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# Connections

RECORDING  
EQUIPMENT  
THE BUYER'S GUIDE

301 OPEN MEGA STUDIO  
VARI-LITE, MARTIN NEW GEAR  
FAIRLIGHT DEBUT MERLIN  
SHOWSAFE COLLAPSES  
AUDIO SALES UP 20%  
FULL LDI REPORT

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Pro Audio, Lighting & Staging monthly

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#72. Dec '99 - Jan '00

The Entertainment & Presentation Technology monthly

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Pro Outlets Directory

Where to buy professional equipment?

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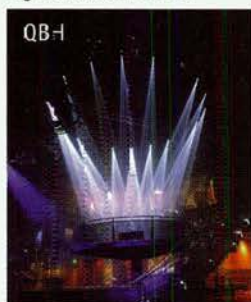


### 301 opens new studios

It's the BIGGEST news in music recording in the region. A large recording complex with no expense spared. And an owner who doesn't mind if he loses money! Hard to believe, we know!

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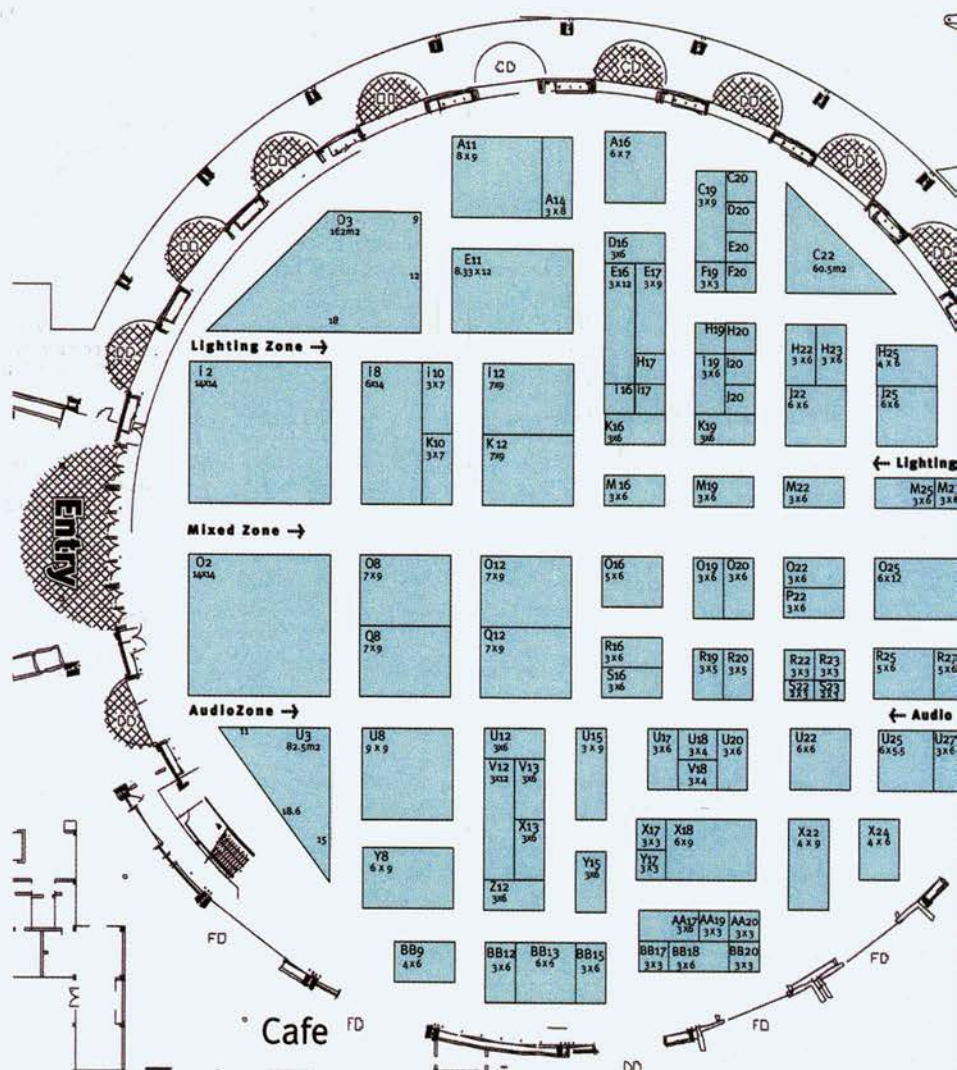
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**108 FLIPPING PAGES - plus the huge wall planner! Took us all damn night to finish. (Hope you enjoy your festive season, readers!)**

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The biennial tradeshow for pro audio, lighting

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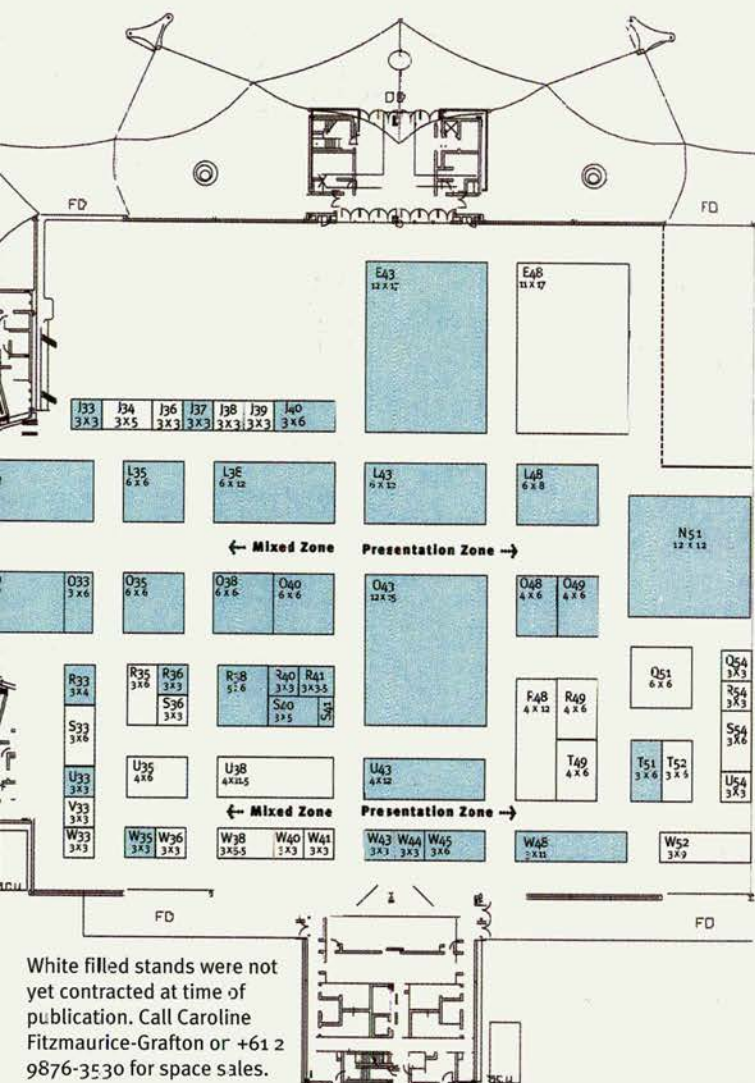


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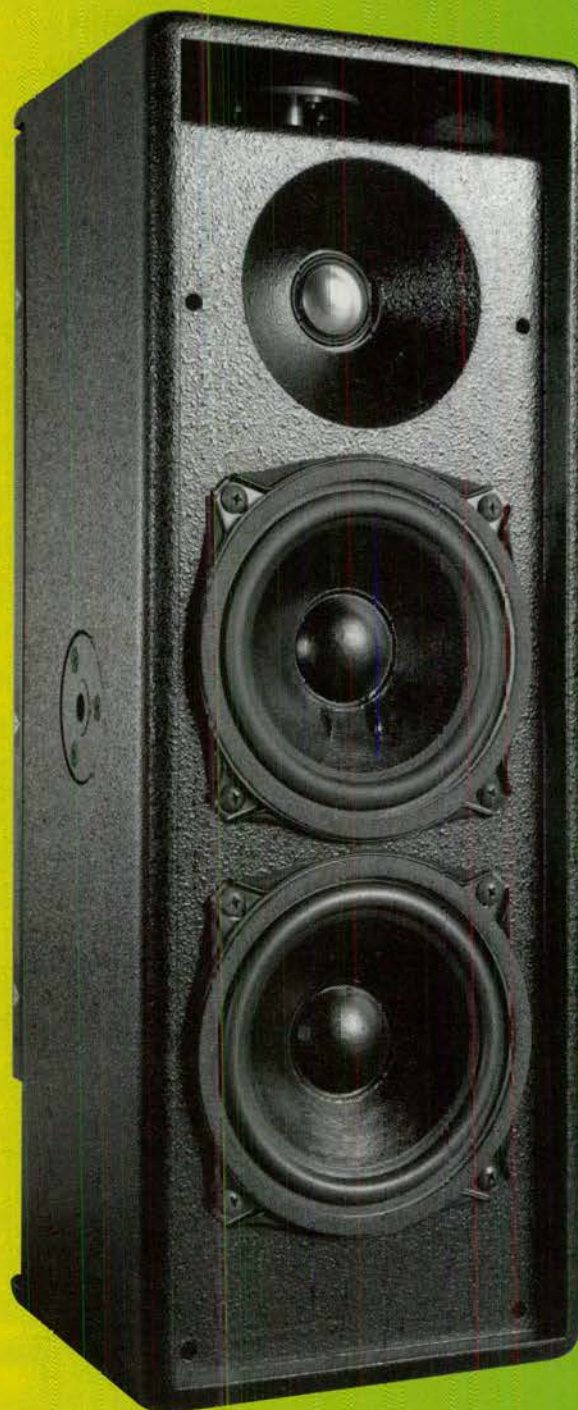
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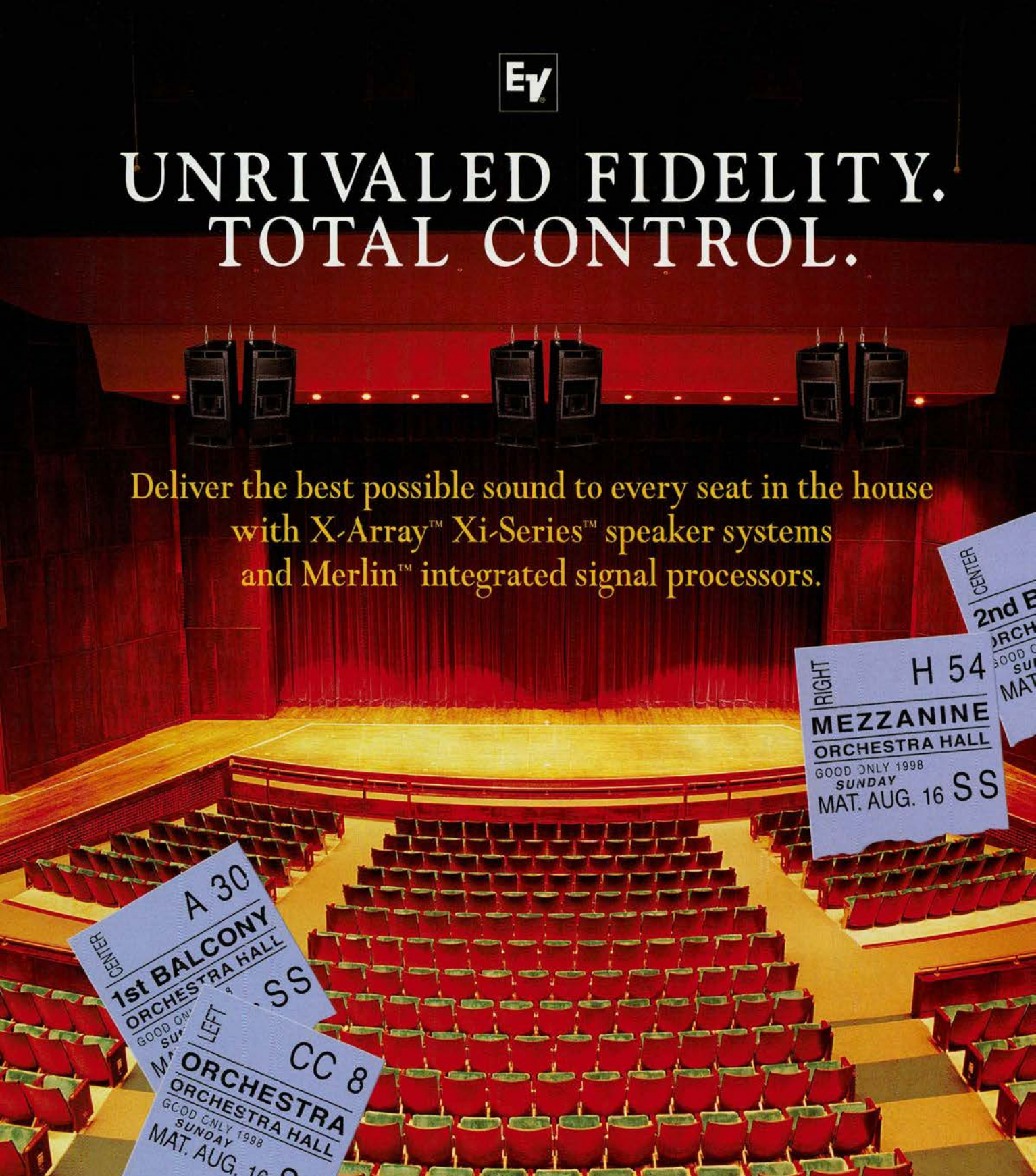
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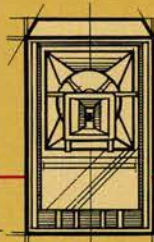
Deliver the best possible sound to every seat in the house  
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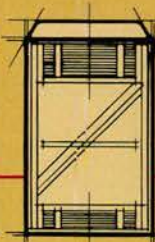
**X-Array** *Xi-Series*



Xi-2153/64  
Xi-2183/64



Xi-1153/64  
Xi-1183/64



X-1191



X-1152/64  
X-1152/94



Xi-1122/85

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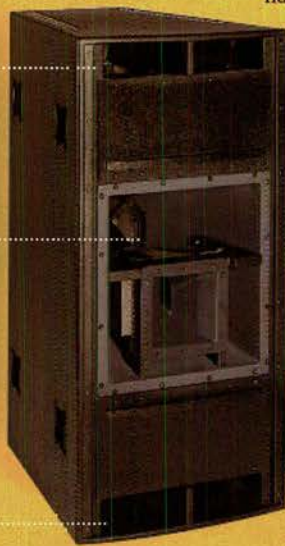
X-Array™ Xi-Series™ speaker systems, like the EV X-Array™ touring systems, feature EV's exclusive Ring-Mode Decoupling (RMD™), the exact technology that gives the Rolling Stones their incredible touring sound quality.

Ring-Mode Decoupling (RMD™) produces vastly improved tonal character and fidelity at all sound pressure levels.

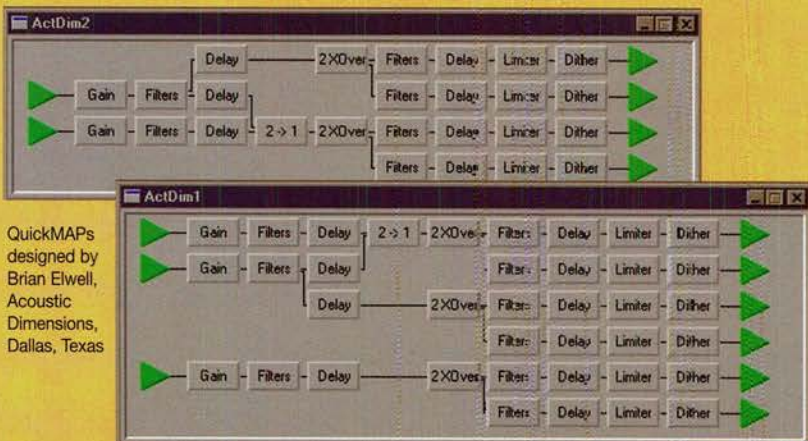
Traditionally, loudspeakers are plagued by time-domain "ring modes," which hang on after the signal has stopped to unpleasantly color the sound and decrease vocal intelligibility. Furthermore, the effect of ring modes is aggravated as sound levels increase, tempting a system operator to adjust system EQ during an event—with little or no success.

RMD™ attacks resonant modes at their source, not with an equalizer. It mechanically suppresses mechanical modes—in speaker diaphragms and cones, or in horn and enclosure walls. It acoustically suppresses acoustic modes—air-column resonances in horns and enclosures, or cavity resonances in compression drivers. RMD™ is a fundamental reexamination of transducer design and behavior.

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This precisely controlled radiation pattern prevents reverberant low-frequency energy (125-600 Hz) from degrading vocal fundamentals. This can happen when significant acoustic energy reflects from floors, ceilings and walls. In conventional systems, poor vertical directivity control results in "spill over" under the enclosure, which not only degrades intelligibility but also limits gain-before-feedback on stage.

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- The location within the signal-flow diagram of "management blocks"; crossover and EQ filters, gain, limiters and signal delay

The ISP-100 has an ultrahigh audio quality that begins with its 24-bit analog-to-digital front end. And the capability to provide performing arts with a wide range of configuration possibilities for crossover, EQ and other signal management—from stereo two-way to state-of-the-art left-center-right applications that complement our DDA Spatial Imaging Technology™ LCR panning mixing consoles.

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# Connections

ENTERTAINMENT TECHNOLOGY ~ Dec '99 - Jan '00

## What's Hot

*Pro audio imports are up 20%.  
We look at where the growth is*

**THE LATEST IMPORT** statistics from the *Australian Music Association Market Report* show professional audio products imports are up 20 percent in the past year.

Speaker boxes are romping along, accounting for 30% of all value in the pro audio category. Not surprising when you consider the number of newly self powered models on the market.

"People are buying powered speakers way more than hard cases, its hurting the powered mixer business" says **Walter Gerin** from Anything Audio in Sydney. "The only powered mixer that's still happening is the Allen & Heath Icon". Icon has digital routing and effects, ideal for solo or duo work, says Walter

**Warren Eales** from Factory Sound in Melbourne agrees that powered speakers are hot at the moment. "We're selling a pile, RCF, Mackie, and dB at the cheaper end". Factory report that since expanding their microphone display to 60 types, overall microphone sales have gone through the roof too. "Another product that sells reasonably well is the rack mount pre-amp" says Warren - but only once you demo them. Until they hear it, they don't realise".

Pro sound cards are hot too, so many people are promoting their desktop PCs up from the standard and usually dubious sounding card that came with the bundle. But selling a sound card - indeed any kind of PC accessory - is fraught with compatibility and system issues.

Harbour Music chief **Harvey Kaufman** is on the front line  
*(please turn to next page)*



Pic by Rowan Turner

New SSL in  
Studio 2 at  
Studios 301

## 301 opens new studios

**W**hat a perfect way to mark the turn of the century. The music recording industry, the same one which spent the 1990's going broke, has turned full circle.

The doom merchants who predicted that the music industry would collapse with the lifting of import restrictions on CDs in Australia are very quiet now. The reality is the power is spread thinner, with independents more easily able to release CDs.

Large recording companies have suffered, as well they de-

serve to. An industry that indentures gullible musicians to long contracts, then picks and chooses which to support, was due for reform. Suffer on, boys!

At the coalface of recording, the winds of change have blown themselves out. More and smaller studios are working smart, making money. And now the region has a flagship music recording studio complex with the new Studios 301 in Sydney.

More than A\$8 million has gone in, and it has a committed owner at the helm. > Page 49

## LDI reveals LX future

In the lighting business, if a new trend is to develop, it is spotted first at the annual LDI trade show. This year in Orlando was no exception.

The 'architainment' move to outdoor lighting has taken root, but driven by artists who conceive, leaving it to our industry to implement.

A rash of new products from LDI are detailed in our lighting pages, go to page 80.

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## Pro audio sales boom

(continued from previous page)

when it comes to compatibility between a sound card, its software, and a customer's PC.

"If a customer has missed a deadline because they've got a problem, they ring me - not the supplier. There are some distributors who are just raping and pillaging and shouldn't be in the business" he says.

Harbour have sold several hundred sound cards of various pedigrees in the last year, alongside around a hundred Ensoniq Paris systems for top end users.

"We've been pretty adversarial with suppliers - because we need to be. In some cases we've given up trying to get local support and get it by email from the manufacturers".

Harvey paints a good argument for dealing with a specialist outlet (like his), and reinforces this by saying that before they'll sell a sound card, they like to ask some questions to establish the customer's requirements first.

His budget buy recommendation include the Guillemot Maxi Studio Isis - it has 4 inputs, 8 outputs, 20 bit converters, midi and bundled software, for A\$750. "It's OK, the sound quality is a step back from what you can achieve if you spend a little

more though".

Across town, Sound Devices have lots of orders for the new Digidesign Digi 001 system, says **Michael Horn**. "There's such a plethora of sound cards it's a bit of minefield". The Yamaha DSP Factory does well for them, and the entry level card is Wave Terminal, at \$599. "The Event cards are very popular too".

As more people discover making sound, they discover they need monitors too. Active monitors are going really well at Sound Devices, the Genelec 1029 entry level monitors are now about \$2000 a pair.

The DJ market isn't really penetrating the pro outlets with the exception of specific DJ outlets, like dmc Lighting and Sound in Sydney. "Omnitronics mixers and turntables are going off, they're priced right" says **Drew Muir**. "And people still buy the Technics SL 1200 turntable, at \$899. Turntables are an art, using use hand and mind. In fact, the swing back to turntables is amazing. If you want a job in a club you need to use both CDs and vinyl".

All outlets report some take up in DJ sales, but say that the average DJ customer is cost sensitive and they are headed for the big music stores to spend a couple of hundred dollars only. The exception appears to be with DJ/sample friendly software from Sonic Foundry and others. Sampler hardware sales are declining, but sample CDs are moving fast - with more people using PCs to sample.

In the professional audio market the contracting audio component is booming too, with large infrastructure projects pushing up demand for top end products.

## Show safety off the agenda as ShowSafe collapses

By Julius Grafton, former secretary, ShowSafe

Workplace safety in the entertainment industry is discussed in serious tones, but is not an important issue - if the fate of the Australian Entertainment Industry Health and Safety Association (ShowSafe) is anything to judge by.

The association collapsed on November 1st when its Annual General Meeting attracted just three members - and only one member of the executive committee - me - turned up. A motion to wind up the association was defeated, but its future is bleak.

ShowSafe was created after a Safety Conference was held at ENTECH 1996 in Sydney. A subsequent safety conference at ENTECH 1988 attracted a good turnout, and at the time of writing ShowSafe had 75 members, with several new applications on hand.

But ShowSafe never really got off the ground.

It's because Australians do not associate.

Unless there is an immediate financial benefit, active membership of an association in this country is very optional.

ShowSafe had its supporters, but when it came down to assuming an active role in the management of the association for the next year, no one volunteered.

Some venues and production companies, notably Jands Production Services, have progressive safety policies and procedures, but most do not. And if they do have good procedures, like at Jands, then they refuse to share them. Such secrets!

ShowSafe has recently introduced a 40 page comprehensive draft Safety Code, which is online at [www.showsafe.com](http://www.showsafe.com) for all to use. It was written over a period of four months by Michael Kent, ironically a former Jands employee. It is, from all feedback, a fine body of work. It's there now to read and use, at no cost to you.

A WebBoard discussion centre on the web site continues, and contains a lot of good dialogue. ShowSafe has enough funds on hand to maintain the website for another year.

My fearless prediction: after another fatal accident, people will rally and pick up the ashes of ShowSafe. I think Australians are too isolationist. I think that apathy when it comes to safety is counter productive.

What's even worse is that although times have changed since an employer routinely expected crew to work 24 hours straight, there is still tacit acceptance that performance enhancing drugs like speed be used during a long setup. ShowSafe has had people freely complaining, under the cloak of anonymity, about show managements and crew routinely using or offering endurance drugs in the workplace.

I think the failure of ShowSafe is really pathetic. Sure, as Secretary I must shoulder some blame. But we need to look at ourselves, and ask if short term self interest will help us when the chips are down.

If any serious and committed people wish to collect the corpse of ShowSafe, call me.

### Juiced up

Worth a look-see is the new [juice.net](http://www.juice.net) website, where youth music publishers Terraplane Press, who do Juice magazine, have thrown a big bundle of money online. It's got some streaming audio too, and clearly is aimed at poking one in the eye of Rolling Stone Australia's publisher.

- Go to [www.juice.net](http://www.juice.net).

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## Dili concert logistics 'staggering'

*Everything to be flown in for army concert in monsoon season*

"IT'S ONE OF THE BIGGEST SHOWS I'VE ever put together," said John Philips- referring to the Xmas concert in East Timor to entertain the troops. John Farnham, Kylie, Gina Jeffries, Living End, James Blundell and Roy & HG will star in the concert which will be broadcast live to Channels 7 and 9 on December 21st.

John Philips is the Tour Manager with the rest of the usual Farnham production crew joining him for the Dili concert. Set up for the concert will begin eight days prior with an 80ft x 56ft stage construction. The actual performing area will only be 40ft x 40ft of that area but such a large roof was needed as it will also be monsoon season. Consequently no drapes or backdrops can be used as there may be strong winds.

About 160 tonnes worth of gear will be carried over in four Hercules aircraft and 140 personnel will fly over for the event.

"There's not a spare table or chair to be had over there," said

John. "So we have to bring tables, chairs, mirrors, fans, generators - everything! One of the biggest tasks has been overseeing the immunisation of all the crew. I've been working 20 hour days, 7 days a week on this project."

John has already visited the area and is returning to inspect sites nearer the border with the aim of doing an acoustic set for the troops stationed there.

"Obviously not everyone (in the Army) can attend the Dili concert or we'd be leaving the doors wide open!" he said.

Jands Production Services will be supplying all the audio and lighting. Securing gear proved difficult as production companies were anxious about their gear being back in time for the New Year celebrations. Insuring it and the crew was also difficult!

A concert will also be held in Darwin on the 19th December. Hopefully all will survive the monsoon, tropical fevers - and militia groups!

- Cat Forcer

## New Pres for ASSG

The new president of the Australian Screen Sound Guild is **Stephen R. Smith**, of Tracks.

## SIM to go

Adelaide sound engineer **Alan Mourant** will be visiting Berkeley California, USA this summer to complete the Meyer Sound Laboratories SIM School. Details: [www.meyersound.com/simschool.htm](http://www.meyersound.com/simschool.htm). It is a self-funded study tour for Alan - good one!

## Jansen add agencies

Jansen are now Radian agents for New Zealand, as well as Jeil Media agents (100v line plus amps and mixers from Korea). They are also sponsoring Ardijah with audio - technica product, their album went gold first week.

- [www.ardijah.com](http://www.ardijah.com)
- [www.jansen.co.nz](http://www.jansen.co.nz)

## DSP advances in West Australia

KOSPRO INTERNATIONAL are pleased to announce the placement of two more DSP

Workstations into Western Australia. The identical systems have been supplied to CURTIN University and Perth Central TAFE. Pictured below are **Stephen Smith** - Technical Supervisor/Curtin University, with **Nick Hassall**, Kospro Install Engineer.

## Arup expands

Arup Acoustics have acquired Elecoustics, the Sydney consultancy business of **Glenn Leembruggen** - who now joins Arup. Both parties are very happy with the new deal. Leembruggen is a leader in the field of acoustics, and will be part of the team presenting the Big Audio Funday on March 6 at ENTECH. • His new number is +61 2 9320-9320.



Euphonix Series 5 console

## EUPHONIX APPOINTS TAG

In a major distribution move Euphonix Corp the LA based manufacturer of digital mixing consoles and recording devices has appointed Technical Audio Group as its exclusive agent in Australia. The decision was announced at AES New York where Euphonix released an all new 96kHz fully digital console: the Series 5.

The S5's control surface provides powerful multi-format monitoring including LCRS, 5.1 and 7.1; dedicated channel processing for dynamics, EQ, filters, aux sends and panning; flexible bus configurations of up to 48 groups, 48 mix, 24 aux and 22 monitor buses and, of course, the massive processing power to provide instant reconfigurability.

The Euphonix product range also includes the CS3000 digitally controlled analogue console and the R1 96kHz hard disc recording system available in 24, 48 and 95 track formats.

R1 is expected to join Fairlight's Merlir and Otari's Radar as the recorder format to watch in the year ahead.

- Technical Audio Group +61 2 9810 5300. [www.tag.au.com](http://www.tag.au.com)

**STOP PRESS: ...YAMAHA PM1D - 192 INPUTS & TOTAL RECALL**  
Tel: 1800 805 413

## DISK EDITS MOVES

Disk-Edits Pty Ltd has moved. The new premises are at: 106 - 108 Gibson Street, Bowden SA. Call +61 8 8340-1377, fax 8346-3081.

## PHILIPS CSS TOO.....

Philips CSS is now at Homebush: 3 Figtree Drive, Homebush NSW 2140. Call +61 2 9704-8311 or fax +61 2 97048465.

## APPOINTMENTS

CMC Music is pleased to announce the appointment of **David Bray** as Southern States sales manager. Call him on +61 3 9809-2002.

**Greg Neal** is the new General Manager for Miller Professional Products. They distribute Lowel and Brightline portable lighting, and Avenger grip products. Call them on +61 2 9439-6377.

Show Technology, Australian distributors of Clay Paky and Martin, have appointed **Phil Buckley** as Martin specialist; and **Neville Lamb** joins too. Call +61 2 9898-1111.

## NEW AGENCIES

Greater Union Entertainment Technology (GUET) are stepping up their wholesale distribution penetration with the addition of two new agencies from the UK:

**StudioMaster** and **Celestion**. StudioMaster are a long established manufacturer of mixing consoles, processing equipment and amplifiers, while Celestion manufacture loudspeaker enclosures and chassis loudspeakers. • Call +61 2 9418-6029.

## LAKE FLOAT SELLOUT

Sydney high-tech audio company Lake Technology Limited collected all 5 million plus dollars from their public float, and closed early. The issue price is A\$0.50 per share, and the code is LAK. The stock started trade on December 3rd.

• Meantime the firm has scored a deal with Sharp Corporation, who will integrate Lake's VZ chip into their goods. This will allow the Dolby Headphone product to be used on consumer hifi equipment.

## Professional sampler for a software price: the new STS-4000

CreamWare presents the STS-4000, a professional software sampler for PC and Mac. This is made possible by integration of host software with Pulsar's DSP hardware, which is responsible for professional performance and perfect timing.

With a latency of only 1-2 ms, the Pulsar sampler outmatches conventional software solutions and has better timing than many hardware samplers. And that at a fraction of the cost of alternative hardware solutions!

As with all of Pulsar's instruments, the STS-4000 can be played just like a "real" hardware instrument. Therefore the sampler can also be used in "live" situations. Of course the STS-4000 seamlessly integrates with the Pulsar setup, so that samples can easily be routed through DSP effects or even Modular synths. Via ASIO-, EASI- and MME-drivers, the sampler output can be directly recorded into a hard disk recording system.

Signals are handled 100% in the digital domain, without any additional AD/DA conversion which might decrease the sound quality.

• Suggested retail price is A\$699

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## Omnitronic dealers

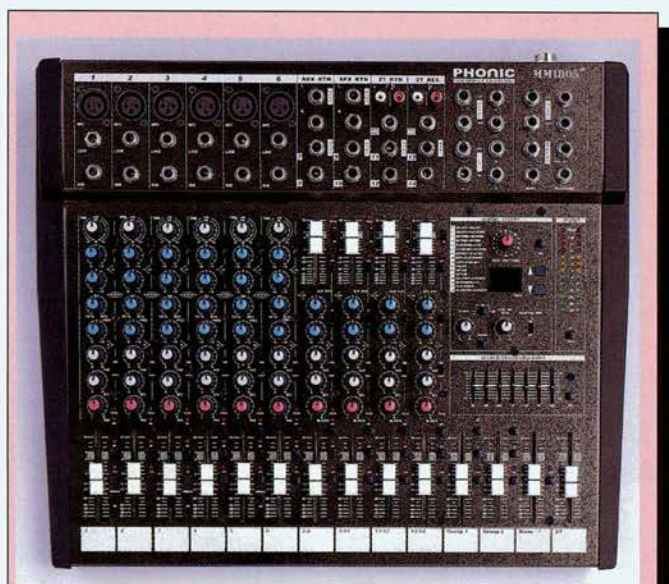
Newly added are **MusicBox** in Northcote Vic, and **Aristocrat Entertainment** in the ACT. Call them on +61 407 005 653.

## Sad but true how technology can thwart some gigsters.

This was emailed to Clan Analogue members recently.....

"Apologies to anyone who actually bothered to come tonight hoping to see me play. My zip drive died at the last minute preventing the loading of any samples. the drive also took the zip disk out (luckily I always take a 'special' live-version backup copy on the road thereby preventing any actual data loss) thereby preventing a hastily arranged spare drive from also loading the disk. oops. I am now thinking of taking up the harmonica — less moving parts.

kooky and I will be arranging an alternative date in the near future..."



## Mix for under a grand

IF ANYTHING THE LAST decade could best be remembered for WAY cheaper mixing consoles. When it started we scratched around and found three inexpensive mixers.

One was a Yamaha 1602, one a Soundcraft Delta (at \$10,000 it hardly rated cheap) and the third a Phonic. Back then the Phonic looked pretty terrible in terms of aesthetics, but boy - it was cheap. It worked.

Funny enough, your editor recently ran into one of those Phonic mixers that he sold a

guy at a Club in 1988 - and it's still going! He replaced all the 60mm faders in 1996.

Phonic have just released their 2000 range, and as the pic above shows, the stylists have caught up with the needs of the user, namely a functional control surface, and the right balance of features.

The MM 1805X has 18 inputs, mid sweep EQ and a 255 program effects processor. Best of all, it costs A\$995.

• CMC +61 2 9905-2511

**STOP PRESS: ...YAMAHA PM1D COMING TO YOUR RIDER SOON**  
Tel: 1800 805 413

# We make our own, so they **cost less!**

Most of the 'cheap' mixers out there are made in 'job lot' factories. But at Phonic, we build our own, in our own factory. Our mixers cut it for music or speech. We don't sit around copying other mixers, we actually DESIGN our own. Phonic has been making mixers since 1973!  
-Tony Ching, PHONIC

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**1860 • 600w • \$1995**  
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**PHONIC**  
PERFORMANCE ENGINEERING

## New AM scores hit

The new owners of **Australian Monitor** have won an order for 45 amplifiers from a company in Finland - the first export market when AM started in 1987. Audio Telex Communications Pty Ltd are the new owners. They acquired the Australian Monitor designs and brand from the previous owners, Australian Monitor Pty Ltd. This company is now no longer trading, and its owners are attempting to minimise payment to previous creditors. The company has changed its name to Hybar Investments Pty Ltd,

and is headquartered at Dover Heights in NSW.

In a letter to creditors, director Lionel Krupp suggested that a compromise payment should be accepted rather than having the company liquidated.

However at least one creditor is proceeding to liquidate the company.

## JBL ANNOUNCES SUPPORT OF EASE

Existing licensees of JBL's CADP2 can now upgrade to the EASE Jr. system design program following an agreement between JBL

Professional and EASE developer, Germany's Acoustic Design Ahnert. JBL CADP2 users can now purchase the EASE Jr. version at the upgrade pricing rather than for the full license fee, and JBL will train and support users moving to EASE Jr. • Call Jands Electronics, +61 2 9582 0909.

## Waterproof head mic

The people at **Aerobic Microphones Australia** have toughened up their Aeromic product, making them the leaders in wet and sweat technology! They export to the world too, great! • Call them on +61 2 9313-4995.

## Visio Sonic DJ audio software

*We get hooked in by the free version*

WE WERE SITTING HERE pondering what to suggest to a subscriber who needed to mix various sources into one output on a PC in a creative, DJ type manner. What about that VisioSonic 1200SL we saw advertised by Disco World, we thought?

Logging on to the website at [www.visiosonic.com](http://www.visiosonic.com) we quickly found it is the ants pants for anyone with a Windows PC. You need a Windows Media Player, which they can download to you if you haven't got it.

The basic product is free, and it's called PCDJ Phat. This baby will mix MP3 files, play CDs, rip CDs, play videos, listen to Internet radio, and fun suchlike.

The Mixmaster variant costs about 50 Aussie bucks, and you can buy it in Au from Disco World. Its got all the features of PCDJ PHAT above, plus features such as cue point setting, beat

matching, and a high speed professional ripper to copy audio onto your hard drive.

Once you're really hooked you can buy the Digital 1200SL (chatchy name, geddit?) version which has got a powerful suite of audio editing tools onboard - and a built-in search engine! Features include full shuffle, auto play, automatic beat matching and real time mixing. You can record from any source - including vinyl. It's easy to use, with drag and drop simplicity, multiple cue point settings, and much more! This sells for about 800 Aussies, again from Disco World.

We looked at the US pricing too, the Disco World price is roughly the US dollar price converted into Aussies. Bargain!

•Go to [www.visiosonic.com](http://www.visiosonic.com) or call Dom or Archie at +61 3 9735-0588.

## Awards Nominations close December 31

ENTECH Award Nominations close on New Years Eve, with the 2000 Awards set to eclipse those before. The new Award is pictured at right.

Friends and colleagues of people working within the entertainment technology and presentations industries are urged to nominate those whose work they admire.

Nominations for people (and companies, like studios, hire or production, or installation firms) are free and should simply contain adequate detail for the judges to identify the nominee and the projects concerned.

A panel will judge the entries during January, ahead of the awards on March 6th.

Product nominations are handled slightly differently this year. As previously, all nominated products will be entered into a voting book, 3000 of

which will be sent at random to some Connections subscribers.

But products must have been released at, or since, the previous ENTECH in April 1998.

And, they must be available on the market at the time of nomination. This presents Connections readers with a simpler choice of contemporary new products.

This year product nominations attract a \$100 fee each, to assist towards the cost of staging the awards, which is a not for profit exercise. The fee also deters frivolous entries, a feature of past Awards.

Awards nominations are open to all, there is no requirement to be a Connections advertiser or an ENTECH exhibitor.

• More info, call us on 1-800-635-514 or +61 2 9876-3530.



## GEAR TO MOVE?

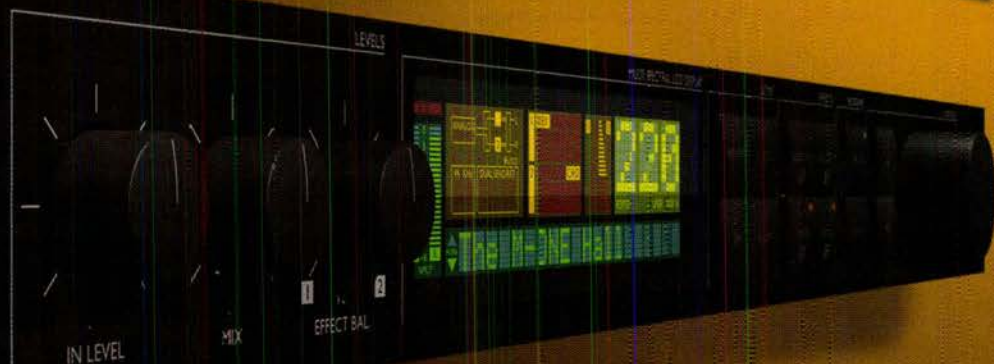
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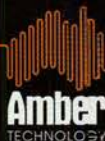
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Connections Publishing Pty Ltd. (ACN 058443182). A private Australian company, est 1992.

## All Mail to:

P.O. Box 439, Epping, NSW 2121 Australia  
(deliveries ONLY to 16 Willoughby street)

Phone: +61 2 9876-3530

Fax: +61 2 9876-5715

E-Mail: mail@conpub.com.au

Large files: images@conpub.com.au

Web site: www.conpub.com.au

**ADVERTISING:** Deadline 15th of each month

Call 1-800-635-514 or +61 2 9876-3530

**Director:** Caroline Fitzmaurice-Grafton caroline@conpub.com.au

**EDITORIAL:** Deadline 15th of each month

**Publisher & Editor:** Julius Grafton

Email: julius@conpub.com.au

**Assistant Editor - 7th year**

Catriona Forcer Email: catriona@conpub.com.au

**Profile journalist:** Madeleine Murray

**Editorial Alliance:** Total Production Magazine (UK)

## Regular Contributors:

**ADELAIDE:** John Matheson **BRISBANE:** Sid Kidman  
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**USA:** Buck Freeman (Detroit), Gary Kayye (NC)  
**SINGAPORE:** Nazir Keshvani **HONG KONG:** Sandy Goh

## CREDITS:

**Production Manager, Art, Layout:** Sharon Miceli sharon@conpub.com.au

**Business Development, Marketing:** Nicole Morris nic@conpub.com.au

**Fiscal Whiz:** Jenny Royal **PerFunctionary:** Barbara Randall

**Web:** Andy Ciddor **Printing:** Superfine, Syd. (3rd year) *Ta Gaz!*

**Reprographics:** Omicron, Sydney (7th year) *Call Ari for film!*

**Platform:** G3 Mac STILL giving us trouble, and Apple don't care!

**Newsagents Distribution:** NDD, Sydney. (7th year)

## DEADLINES:

Monthly except January, deadline 15th of the month prior.

## SUBSCRIPTIONS:

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10. We shall do our utmost to correct any published information found to be harmfully inaccurate.

# industry NEWS



## DIGITECH INTRO VOCALIST ACCESS

THE DIGITECH VOCALIST Access is a 5 part vocal harmoniser with reverb housed in a smart looking 1U chassis. This is another in a long line of harmonisers from DigiTech.

Especially designed for keyboard players and MIDI enthusiasts, this low-cost but high quality product is easy to use and lets you create natural sounding vocal harmonies from one input.

With a large LCD screen and 50 pre-set harmony and doubling programs, Vocalist Access can be used effortlessly with any MIDI

keyboard, sequencer, or standard MIDI File.

Arranging harmony voices above or below the lead vocal is a snap. Simply select from the back-lit voicing buttons on the front panel, to create the desired vocal harmonies. Use Access "on-the-fly" or save selections as a pre-set.

It's got 4 Voice Detune for vocal doubling and 50 pre-set harmony Styles.

• It sells for A\$1,299.00

**Contact CMI in Au, on +61 3 9315-2244**

## EAW introduce club sound series

EAW choose the UK as a venue for the launch of its new AVALON series of Club systems.

"Avalon is evidence of what happens when a company really decides to closely examine the nuances and requirements of a market" says Ken Berger, President of EAW.

There are six models of full range loudspeakers, ranging from the flagship DC1 3 way system to the compact 2 way DC6. The line also includes two super high frequency arrays, one with four drivers, to hang above the dance floor.

The upper corner of most of



the cabinets is cut away to assist mounting in low ceiling rooms. Special subwoofer designs are included in Avalon too.

• **Details: www.eaw.com or PAS, +61 3 9415-1585**

## MAJOR TRADE EVENTS

- NAMM, 3 - 6 Feb 2000. LA. www.namm.com
- AES 108th. Feb 19-22 2000. Paris. Fax +1 212 682-0477. web: www.aes.org
- ENTECH 2000, March 5th - 7th, 2000. Sydney Exhibition Complex at the Olympics, Homebush Bay. Fax + 61 2 9876-5715. web: www.conpub.com.au
- MusikMesse, March 15- 19th 2000, Frankfurt. www.messefrankfurt.com
- SIB, Mar 26 - 29th, 2000. Rimini, Italy. Ph +39 541 711711. www.fierarimini.it
- NAB, April 8-13th, 2000, Vegas, USA. www.nab.com
- NSCA, April 27 - May 1, 2000. Las Vegas. Ph +1 904 273-2760 www.nasca.org
- PLASA Shanghai. June 7-9. +44 171 370-8231. www.lightandsound-shanghai.com
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## NEW WESTERN SYDNEY PERFORMING ARTS CENTRE

*Facility one of the largest of its kind*

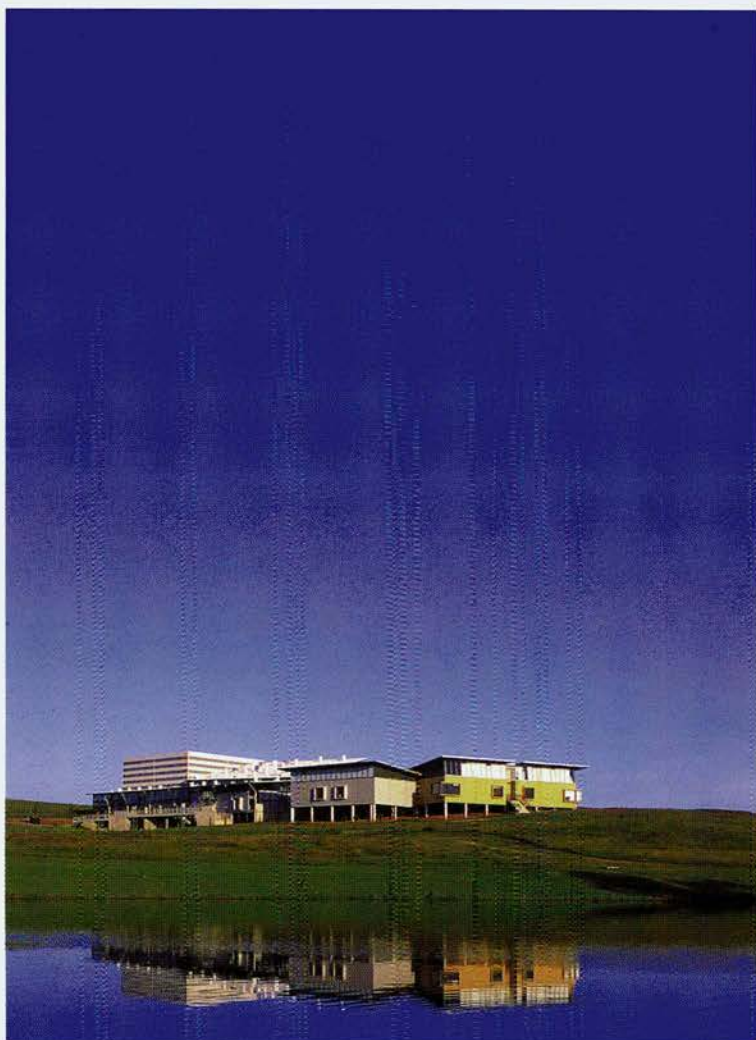
THE NEW PERFORMING ARTS CENTRE at the University of Western Sydney is one of the largest facilities of its kind in the country.

The custom-built \$12.6 million Centre for Contemporary Performance comprises two large black box style theatres along with other teaching spaces including studios, tutorial and lecture rooms and a computer room to serve some 300 students and staff.

Design, building work and equipment fit-out has taken most of this year with Sydney's **Lots of Watts** and **Stage and Studio** working closely with **Jands Electronics** to supply all the audio, lighting and stage machinery for the main theatres. The extensive equipment list includes JBL loudspeaker systems, Soundcraft consoles, dbx signal processing, and Jands lighting control, stage furnishings and machinery.

"Basically we were just given the building as a shell and we had to make it work," UWS technical officer Ian Court explains. "And it's worked fabulously. Trial performances held so far have gone really well. The audio equipment particularly is a big upgrade from what we were used to and we've had a lot of comments already about the difference in the quality and presence of sound."

The new venue will be used by students in the performing arts as well as visual arts and design, and plans are in place to incorporate a multimedia production studio. The university also hopes the centre will be used by the public - "We're hoping the building will be used as a community resource for all of Western Sydney," Ian says. •



## JBL AT HOME IN PARLIAMENT HOUSE

ELECOUSTICS HAS JUST FINISHED COMMISSIONING a permanent JBL sound system for the Great Hall at Parliament House catering for everything from speeches and functions of state to musical performances and corporate events. The Hall had sustained damage over the years from systems being moved in and out and Elecoustics (now part of Arup Acoustics) was given a brief for a permanent, architecturally suitable and flexible set-up. The space is quite reverberant, however, with strong echoes off the back walls, and the speaker positions were constrained by a large hanging tapestry, and lighting and maintenance requirements. The solution was to create a moderately-sized array for the main system with a constant directivity from 100Hz to 15kHz.

"This would ensure the best possible tonal balance throughout the room and minimise the amount of source radiated under the speakers, allowing for a second smaller system for downfill which could be tailored to minimise feedback," Elecoustics' Glenn Leembruggen explained.

Making use of recent JBL research on port designs used in the JBL HLA touring series and some monitor systems, Glenn developed a new port design for enclosures to house JBL's 2226 380mm woofers. The result, he says, is significantly less port compression and a lot more bottom end at high SPLs. By spacing the woofers apart, advan-

tage is taken off the off-axis cancellation to extend the constant directivity of the system down to 100Hz. The mid-range comprises an electrically tapered array of three JBL Venue Series mid range horns, inspired by the recent success of the JBL line array systems in the Sydney Opera House. Standard JBL 35mm drivers handle the top end. To accommodate different modes of operation of the room, the middle speaker system rotates by remote control.

The downfill system (see picture below) comprises JBL's dual concentric 2155 with two 2404s assisting the 2155 at high frequencies.

The whole system is active with DSP processing provided by the Peavey X-Frame.

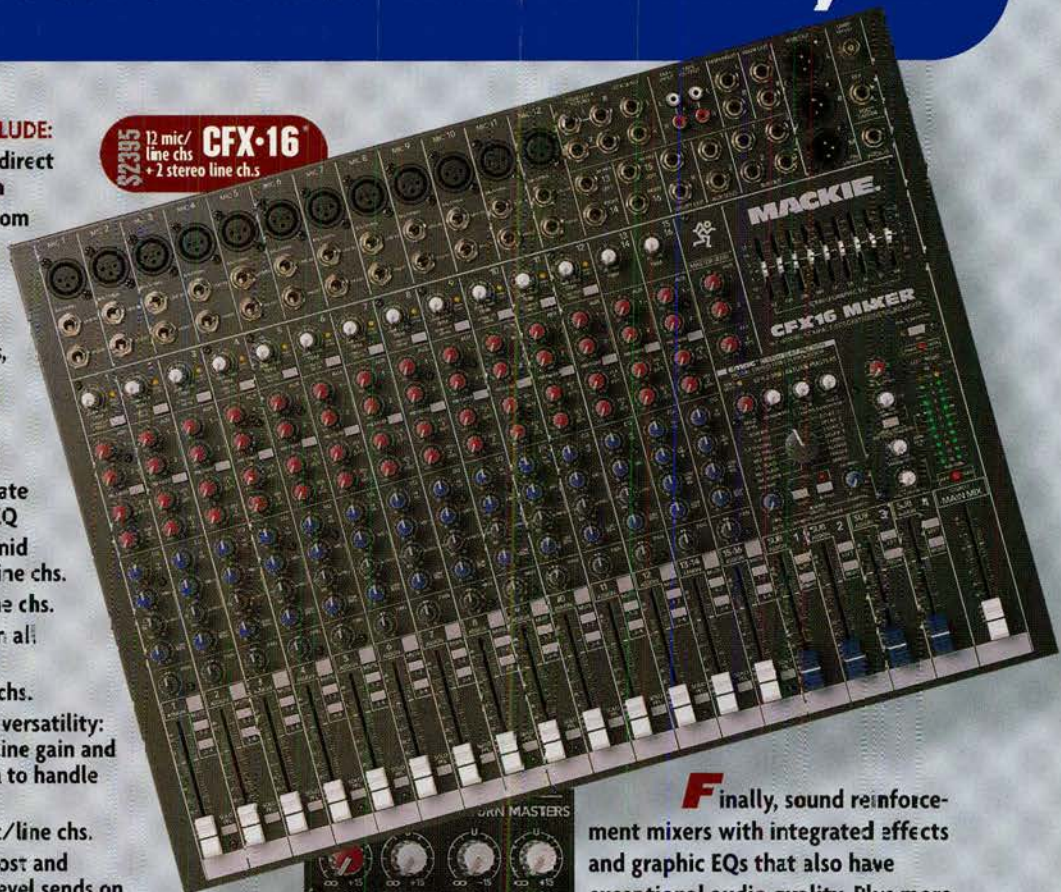
An unusual touch is that all-pass filters have been used to optimise the summation of the main and the downfill systems. •



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Besides the CFX•16, there's a large family size (CFX•20) and a travel size (CFX•12).

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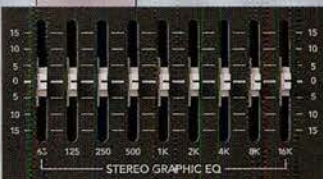
\* Australian Suggested Retail Prices



Write in Reader Service Number: 170

The graphic equalizer is always in the signal path of an EFX mixer. If it's substandard, so is the sound of the mixer. Mackie's CFX Series have expensive, studio-grade graphic equalizers that use multiple summing amps and precision infinite feedback band-pass filters for superior phase and combining properties. Bottom line: The best EFX mixer you ever heard—whether you adjust the graphic EQ or not.

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Write in Reader Service Number: 153

**My Favourite Mic!**

Brent Gray, System Technician, Big Beat Productions

"My favourite microphone of all time is the **AKG C414**. I find that they're pretty good on overheads and especially guitar amps. They sound really good and they've got a very flat pick-up pattern. When I mix a band I want to accentuate the sound of the instruments so they're really good on guitars, and in a studio setting on studio vocals they're pretty clean.

"With overheads you've just got to remember about spacing problems - the 3:1 rule. The cardioid response in them is pretty good so it's pretty much whatever sort of positioning you normally use for overheads and guitars. You can put them in front of the driver, but really it depends on the application. If you want to get an airy guitar sound then you put it back a bit further.

"It's sound is pretty flat, there's not a lot of colouration and you get a lot of the high frequencies as well because it's a dual diaphragm condenser.

"Obviously EQing depends on what you're

using it for whether it's guitars, overheads or vocals, but I usually go straight for the

Hi-Pass Filter, and because it's such a good microphone you shouldn't need to touch too much. But again it depends on the instruments and how good they are, whether they've got good amps or new cymbals or whatever. You might have to do a bit more work if they're not good sounding instruments themselves, but if you've got a

drum kit with new skins on it and a pretty good amplifier you shouldn't need to do too much other than give it a bit more headroom with the Hi-Pass Filter.

"I've probably been using them about 3 years now. I used them on some studio work and we use them live every now and then. As a mixer I'd like to have them, but when you're only doing little house gigs it's a bit hard unless you've got individual phantom power on each channel. Global phantom can be a pretty scary thing."

- As told to Mandy Jones



**Tiny Good's Rigging Note**

**Safe Working Load**

Lots of people talk about safe working loads, but what is a safe working load and how is it calculated.

The manufactures of equipment such as ropes, chain, wire, shackles etc., test their products to destruction, that is pull it until it breaks, and decide a weight they will guarantee as a minimum breaking load (GBL).

The GBL is then divided by a specified safety factor. The safety factors are specified by the Health and Safety Organization (HSO) and are different for different types of equipment.

- The safety factors are as follows:
- Steel structures usually 2.5
  - Chain, and shackles 4
  - Steel wire rope 5
  - Fibre rope 6
  - Synthetic rope and slings (spansets) 8
  - Any equipment used for supporting persons 10

So, to work out the safe working load (SWL) of a steel wire rope you divide its GBL by 5. Example, if the GBL is 1000kg, divide by 5 to get the SWL, which is 200kg.

You can also work it the other way. A Spanset with a SWL of 2000kg has a GBL of  $2000 \times 8 = 16000\text{kg}$ .

A common mistake is that people take the rating of a Spanset as say 2000kg. And then because they are using it to support persons divide that by 10 and end up with a result of  $2000 / 10 = 200\text{kg}$ .

This is not correct it should be  $2000 \times 8 = 16000 / 10 = 1600\text{kg}$ .

This is the reason a lot of new circus and physical theatre companies ask for such large gear, because they have not calculated their SWL properly.

The safety factors are there to give tolerance for dynamic loads, stretch, wear, minor miscalculations in load weights, etc.. They are never to be used as a number you can push your gear to. The SWL is the maximum weight you should hang on your gear.

It is important to note that a lot of industrial gear is rated as SWL or WLL, which is Working Load Limit, however most climbing and yachting equipment is rated as GBL. This is one of the biggest dangers with climbing and yachting equipment is that people do not apply the safety factors to that rating.

**Disclaimer**

The information contained in this note is the opinion of Tiny Good based on industrial training as a rigger, and job experience. No liability is accepted for use or misuse of this information. This material remains the property of Showtech Australia P/L and may not be reproduced without written consent.

# THE EXPERTS AGREE



Paul Sheritt

Bruce Johnston

Grant Walsh

## Australia's best audio engineers are also some of the world's finest

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diesel • sammy hagar • divinyls • baby animals • noiseworks • spiderbait • and many more  
all insist upon the engineers pictured above when it comes to their live sound requirements



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The RCF ART Series – built to a standard, not a price.

# The Gadget Box. With Dr. G

## Cordless Tools - Circular Saw

This little guy is a fantastic idea. If you have ever been involved with building sets etc in a venue, you'll know that the concept of a cordless circular saw would be very useful. I have seen a couple of companies try different cordless tool variations, including the now discontinued Black and Decker "Versa Pak" range. The limitation has often been that the tool in question was a little too "domestic" - i.e. not powerful enough or not robust enough.

Panasonic's new range of cordless professional power tools goes a long way towards addressing these problems. I had the opportunity to play with their "Wood Cutter" circular saw for a couple of weeks, and I was most impressed.

The motor is powerful enough for most applications, and drove the saw for a good while before the battery started to fatigue. Even then, the unit is supplied with two batteries and a fast charger, so you should never be caught out on the job with no power. Not being a carpenter myself, I passed the saw on to someone who was, and he was equally impressed. His only criticism was that the return spring on the blade cover was a bit slack. Panasonic's response to this was that, being an evaluation unit, it has been around the block a couple of times. At \$649 rrp, it is a very pricey unit - ultimately it will be the consumers' wallets that decide whether this saw will stay on the shelves.

- Panasonic Cordless Woodcutter Saw
- available from most electrical suppliers
- Priced at \$649rrp (you can probably get it for \$100 less)

## More Cordless Power Tools

In the market for some cheap tools? Clint's Crazy Bargains have the remaining stock of Black and Decker's unsuccessful attempt at making a cordless tool for every occasion. However, you may need to "make your fingers do the walking" because unless you live in Albury or Dubbo, it won't be easy to just jump in the car to get them. For some reason, only the regional stores seem to have the product. Pictured here is one of the tools that I think should have been cordless from day one - the jigsaw. These are not the most powerful tools, but they are useful - and at \$40 (approx) hard to pass up. You may need to jump on the phone to find it though.

## Curly Cables

Talkback headsets falling apart? Cable dying? Well, consider replacing the cable with this stuff. Originally designed for use with CB radio microphones this cable is fully shielded, and available with either three or five cores. There are three different lengths (extended lengths 1.8m, 2.75m, 3.65m) and is quite robust. The colour range is limited to the colours used on the model "T" Ford (black, black, and black).

- WES Components +61 (0)2 9797 9866
- Part Nos : ML3-6, ML3-9, ML3-12 (three core, 6/9/12 ft lengths) or ML5-6, ML5-9, ML5-12 (five core, 6/9/12 ft lengths)
- All under \$4 (trade price)

(ASC also have a nifty curly cord, destined for the high end of the audio market).

## Cutting Gel

This is a very easy job, and its very easy to get wrong. I have seen many different ways of cutting gel, and a lot of these have been a little dubious. The best system I can remember is the one I think they used at QPAC back when I used to work there casually. It was a simple roller-blade guillotine, wide enough to accept full sheets or gel straight off the roll, with the cut sizes marked in the full width of the sheet as shown in the picture. With the guillotine mounted level to the top of the table, the whole job was quick and easy. I would definitely recommend a white table, or even better, a piece of perspex with a fluro under it.



## Remote Macro Trigger

Did you know that on the back of a lot of lighting desks, there is a little 9, 15 or 25 pin outlet that will allow you to trigger a macro? This little feature has the potential to be one of the most useful outlets on a desk, but so few people realise this.

Usually the plug is wired with a one common, and a pin for each triggerable macro. The number of applications are endless - remote "GO" and "BACK" buttons so that the operator doesn't need to be at the desk, for bringing up the next or previous channel when focusing lights without a standard remote control, for FOH staff to bring up (work?) lights if required, for triggering by actors as part of a show etc, for wiring up your practical lights on a set without the need for an electrician's license etc.

My advice would be to wire a special adapter that goes from whatever plug is required at the desk, to a 3 pin XLR for each pair of macros available. Then you can use standard microphone lines to run to a trigger box, each of which can control two macros. Always check the manual for the wiring of your specific desk before you start.

## Glow Tape

It's used everywhere in our industry. Backstage steps, for actors to hit their marks, for stage managers to know which button to press, rude messages in the Green Room, etc. I recently rang to get the cost of rolls of the Rosco product, and at \$21.96 for a 5m roll, that's not very cheap stuff. Imagine my surprise when later that same day, while wandering in Big W, I saw this stuff - at half the price.

"Cool," I thought. That's going in the grab bag. Unlike conventional sticky tape, this product comes with a backing strip on the sticky side of the tape so you can keep cut lengths handy. The "sticky" bit seems to me to be quite good - having

stuck it to a few things, then removed it to re-stick it somewhere else. The importer (Gijet Pty Ltd), has said that they would be happy to sell box quantities, so here are the details:

- Handy Home Glow In The Dark Tape
- Roll length 25mm x 91.5cm
- \$2.48ea from BigW
- \$144 (approx) wholesale for a box of 72
- Gijet Pty Ltd +61 (0)2 9519 9433



- John Grimshaw

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Write in Reader Service Number: 193

# Magical musical Merlin multitrack

*Fairlight launches 24/48 track Merlin. It looks good, very good..... Julius Grcfton was there*

**F**AIRLIGHT HAS COME A HELL OF a long way from almost sinking into oblivion twice. The Fairlight you see today is a major global pro audio brand, whose future is assured. Which is why a large number of people attended the rollout of Fairlight Merlin.

You've seen the hundreds of hard disk recording systems based on a PC or a Mac, and you've seen systems like Fairlight MFX which are all about audio post production for screen sound. Now meet a Fairlight product for serious professional music recording.

Merlin is a 24 or 48 track replacement for the 2" analogue multitrack recorder. There are other machines not unlike Merlin, Otari Radar comes to mind. But Fairlight have timed this product gorgeously, delivering working prototypes when some other mooted systems appear to be still vapourware.

Merlin comes in three parts. The user console is super sexy, our photo doesn't do it justice. It has rear lit, colourful and well made buttons for transport control, track arming, location select, editing and keypad functions. This console has a lot of pose value. It comes in five different colours too! You connect a suitable VDU monitor, to see your track status.

Hidden away in your control room is the hardware, as yet Fairlight haven't unwrapped the hardware package, but the innards are working, albeit disguised as an MFX 3 rack when we saw the system.

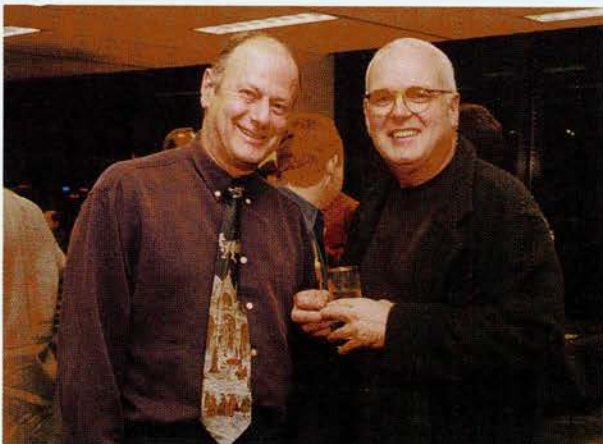
Merlin is powerful.

It does 24 tracks of simultaneous record and playback, on one hard drive - with networking capability too. It can act as a client of Fairlight's Media Link system, an NT based server which connects to external Fairlight products via standard 100 Base T office ethernet wiring. Like we use here at Connections.



*Greg Crittenden (Take 2 Creative Audio), Trevor Harrison (Shoobox Productions), Graeme Rothwell (Fairlight Sales Manager), and Geoff Case (Take 2 Creative Audio) at the Merlin launch. Fairlight somehow snagged the use of a Government Function Centre on the gazillionth level of a building overlooking Sydney Harbour for the Merlin function. Very nice! Ta!*

*At the launch, Andrew Bell (Fairlight Director of Product Development and occasional guitarist, with Richard Lush, esteemed producer and engineer from Studios 301*



At the launch, Fairlight Director of Product Development, Andrew Bell, gave Merlin the hardest task of all - he punched in 24 tracks from one Merlin to another- demonstrating gapless punch in and punch out. This drew applause from the audience!

The console has 48 track arming keys and 48 location select keys. All console keys are strong and rear lit. "Are they Sony keys?" one lady asked. "No, they're Fairlight keys!" came the response. Transport control keys work the traditional way (hold down play and hit record) or you can change via software to a one touch record function.

Machine control allows chase or synchronise any flavour of timecode, or you can slave a video machine or video hard disk player. Fairlight have no problems in this department.

The network ability of Merlin is formidable too, it can act as a node from a MediaLink server, wired using plain vanilla 100 Base T office ethernet cabling. It can file share with MFX or Fame workstations, and even output a wave file for emailing an audio clip!

In practice Andrew Bell demonstrated recording several guitar tracks while retaining each, and a mix down to choose and embed the best track. It was fast, each take took on a sequential file name by default, and the recall was as fast as a couple of key-strokes. The software is smart and written in an intuitive style - for example, hit the 'play again' button and it goes to and plays the same time domain as the previous action.

Likewise the 'record again' function. The last thing you record is the first thing you hear, unless you promote a previous take.

A softpatch lets you send inputs to any track or combination of tracks - so your mixer main vocal output could route to a couple of multitracks for a chorus or harmony effect! Try doing that on an old Studer!

In standard configuration Merlin comes as a 24 channel, 48khz unit with only digital in-

puts and outputs. Cost for this is about A\$42,000 - if you need analogue converters, the cost goes up to A\$53,000.

A 48 track version will follow mid year, and cost A\$78k (digital) or A\$91k with analogue in's and out's.

The 96khz version will require extra cards and deliver less tracks, and will follow. But the core system is prewired for 96Khz.

Some key features include:

- MediaLink audio networking
  - Mix 16, 20 and 24 bit clips in the same project!
  - Background backup
  - Dedicated ADR mode
  - GPO system
  - 999 named cues
  - Auto record
  - MFX3plus and Fame2 file compatibility
  - Sync to AES, timecode or video
  - Traditional or non-destructive Record modes
  - 64 levels of audio
  - Timecode chase and generate
  - Dedicated track select keys
- Best of all, you use a mixing console in the traditional manner, so things don't need to change - but efficiency improves!
- This stands to be a very interesting product, priced VERY reasonably, and the only problem appears to us to be whether Fairlight can build them quick enough!
- Look for it at ENTECH 2000.

## SONY

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Write in Reader Service Number: 184

## Showroom gets new PA

*Crown Casino opts for X-Array system*

**T**HE CROWN CASINO SHOWROOM, ONE OF the largest venues within the Crown Entertainment Complex in Melbourne, has recently been fitted out with an Electro-Voice X-Array concert system.

The opening night for the system was hailed as a 'baptism of fire' with rocker Billy Thorpe, touted as one of Australia's loudest touring acts, as the main drawcard.

Bruce Johnston of Johnston Audio Services from Melbourne designed the system with installation and technical support by Factory Sound.

Comprising a full EV X-Array Xi Series touring system (the system which replaces DeltaMax) it has six Xi-1183 three way cabinets, eight Xi-2181 flying double 18 sub cabinets and six Xi-1122 cabinets as near fill and centre cluster. It is powered by EV P Series power amplifiers and uses a combination of Merlin DSP processors and the new EV DX38 controllers.

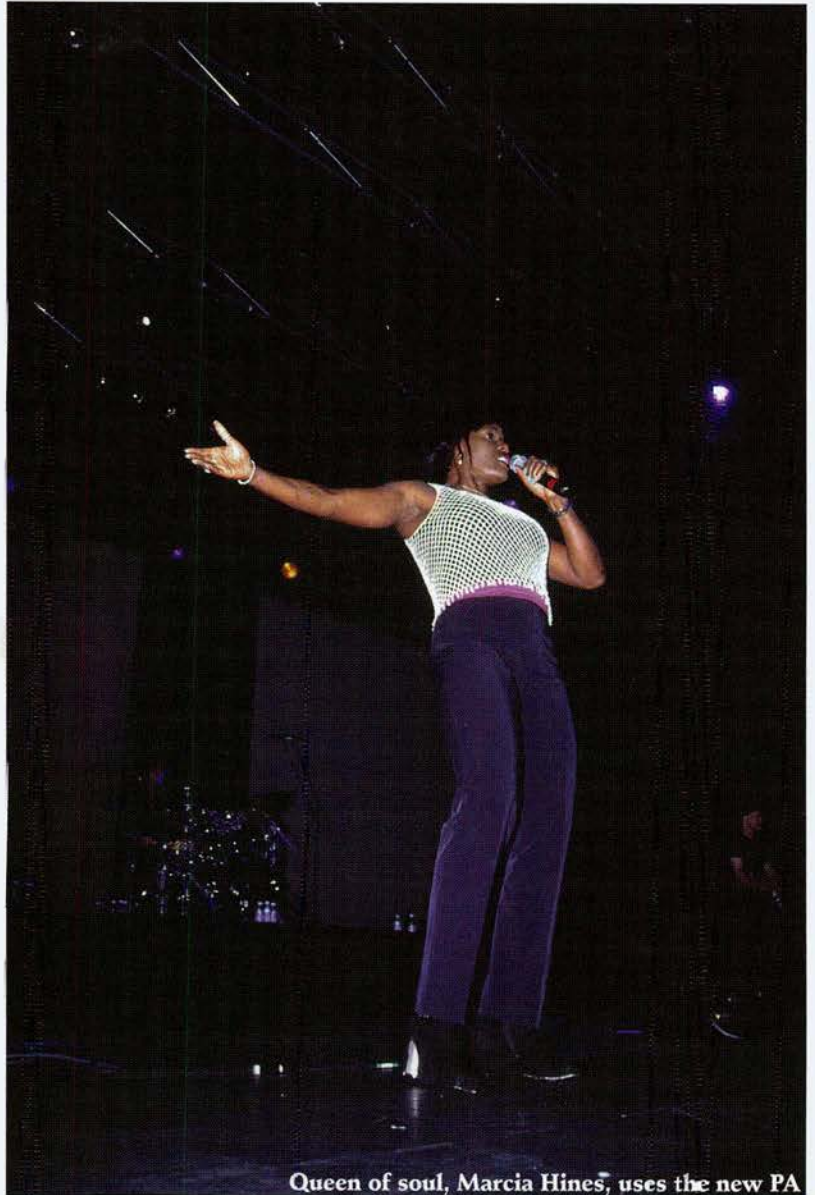
"It was the clarity of the top end and the 'breathiness' of the CD horns that was the deciding factor in choosing the X-Array system" says Bruce. "Nothing else comes close. That, coupled with the Merlin processor which allowed us to input factors such as excursion limiting along with other parameters was a big plus. The end result is a system that sounds outstanding with no mid band distortion and sheer clarity from top to bottom."

"When we first powered up the system we had people there from EV, the Crown Showroom, Factory Sound and engineers such as Grant Walsh and Paul Sherritt and everybody was blown away with the sound, even from the very beginning! We actually started the installation only two days before Billy Thorpe was due to play and he closed his gigs with rave reviews on the show and the sound quality from the Melbourne press. It's a great result!"

The Showroom plays host to acts such as Jerry Lee Lewis, Leo Sayer, Billy Thorpe and Kate Ceberano to name a few. Showroom Production Supervisor, Chris Rogers was ecstatic with the system and has stated that many of the touring engineers are likewise, very happy. In fact, Chris mentioned that Leo Sayer's engineer ran the system completely devoid of FOH EQ and commented very favourably on the capabilities of the cabinets and how 'damn good' they sound flat!

The Merlin is a computer controlled DSP product that provides functions such as signal routing, crossover (double 4 way), complete EQ filtering, delay, compression, limiting and gates. With 24 bit A to D and D to A converters and a noise floor greater than 110dBu it is a very quiet and flexible system for this application.

The design for the Showroom called for a true 4-way system, which allows the speakers to drive harder than a conventional 3 way plus sub configuration. The DX38's take care of the signal routing and processing for the Xi-1122's that are used for near fill and centre cluster. •

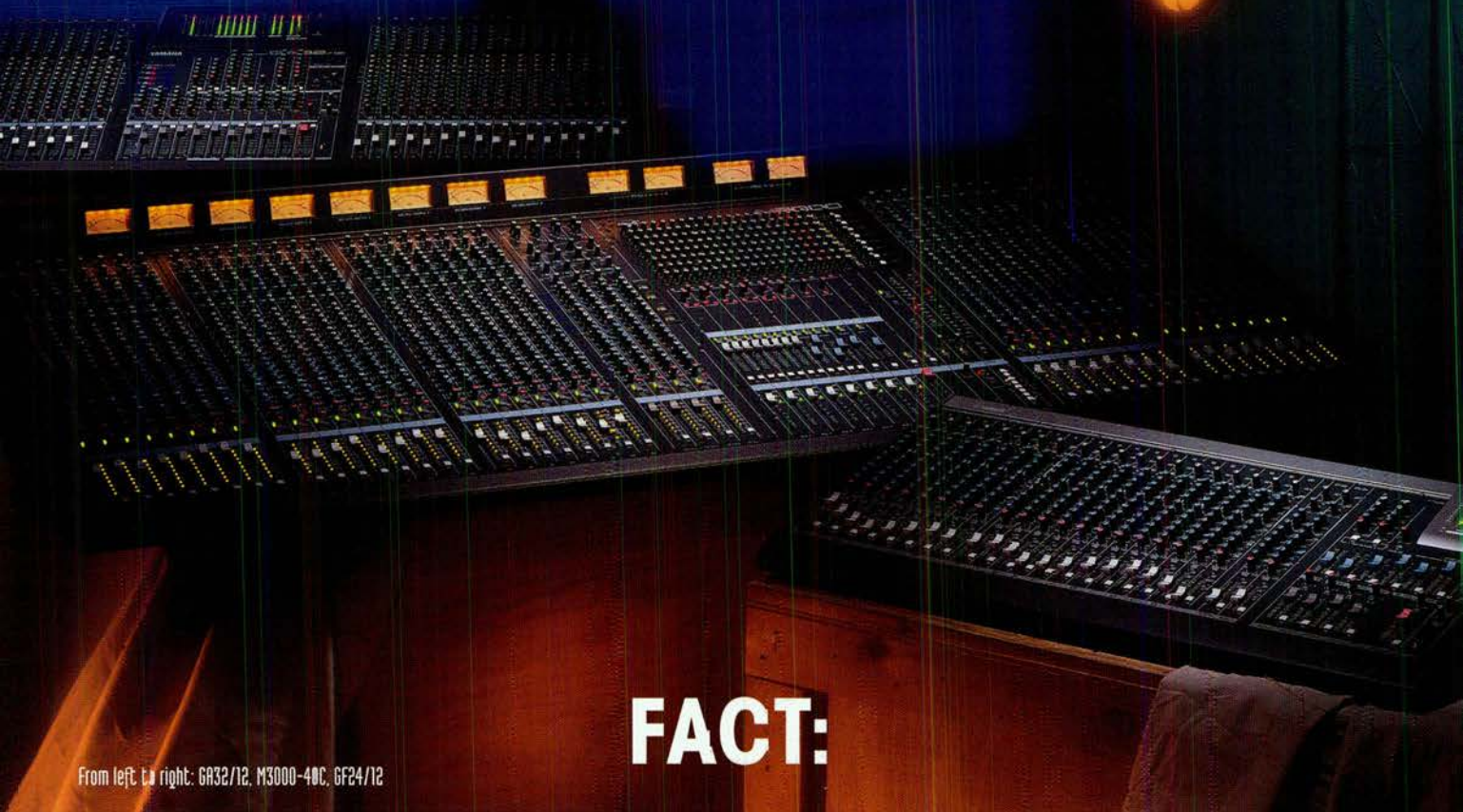


Queen of soul, Marcia Hines, uses the new PA

*Chris Rodgers (Production Supervisor), Gary Rappel (Showroom manager) and Shane Bailey (EVI Audio)*



# YAMAHA MIXERS DID YOU KNOW?



## FACT:

From left to right: GR32/12, M3000-40C, GF24/12

Yamaha consoles are specified by more tours than others. And with good reason. Refined and developed over the years, Yamaha has achieved an enviable reputation for dependable quality. From power supplies to potentiometers, every component has been rigorously tested and retested by Yamaha engineers.

Their passion verges on obsession. And now, with the introduction of three new consoles, Yamaha reliability is reaching brand new audiences.

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### M3000 Series - from \$26,995 RRP

- Available in 24 or 40 mono input channel versions, both with an additional 4 stereo channels
- Mono input: with XLR-type microphone/line connectors • Phantom power individually switchable on all mono inputs
- Stereo channels have both "A" inputs (1/4" jacks) and "B" inputs (RCA pin jacks)
- Group/Aux Diversity System for a wide range of signal-routing requirements allows the console to be used as FOH or monitor mixer... or both!
- Midi Mute Groups with 8 hard assign switches and 128 scene memories with MIDI-control capability
- Input channels can be individually assigned to any of 8 VCA groups
- 20x8 submix matrix provides eight independent mixers of the signals on the 16 mix busses, the stereo buss, and matrix sub inputs
- Outstanding RF noise rejection eliminates unwanted interference and assures a clean clear signal
- Insert send/return patch points are included on all mono channels, stereo channels, as well as mix, aux and stereo busses
- All mono channels feature switchable high-pass filters, sweepable from 20Hz to 400Hz
- Mono channels have a flexible 4-band equalizer, with sweepable frequencies in all 4-bands and switchable bandwidth for the HI MID and LO MID bands
- Fixed-frequency 4-band equalization with switchable HI MID and LO MID bandwidth on stereo channels
- EQ bypass switches are provided on all channels
- Dual (redundant) power supplies may be used with no switching unit required.

### GF Series - from \$1895 RRP

- Available in 12, 16 or 24 input channel versions
- Mono input channels feature both XLR and TRS type connectors
- Phantom power and insert jacks available on all mono inputs
- Stereo inputs are switchable between "A" input (1/4" jacks) and "B" input (RCA type pin jacks)
- Three band EQ with switchable midrange on mono inputs plus HPF
- 6 Aux Sends: aux 1 and 2 are fixed "pre" and auxes 3/4 and 5/6 are "pre" or "post" selectable
- Input channels assignable to any or all of the four busses and/or stereo outputs
- Two stereo aux returns with independent return level control feeding the 4 groups, aux 1-4 and stereo busses

### GA Series - from \$5295 RRP

- Available in 20 or 28 mono input channel versions
- Both consoles have 2 stereo input channels in addition to mono inputs
- Mono inputs have both XLR type microphone connectors and balanced/unbalanced TRS phone jacks
- Phantom power switchable in groups of 4 for all mono inputs
- Twelve Mix Busses: ten mix/aux busses plus (dual) stereo busses
- GA Diversity features allows the console to be used as a FOH or monitor mixer
- Two matrix sub-mixes from the M1 through M4 mix busses and the stereo buss
- Four stereo aux returns with independent level controls
- Record Out/Tape in feature
- Compressive monitoring via control-room monitor and headphone outputs with independent level controls
- Peak-reading level meters provide accurate visual monitoring of the signal appearing at the term mix busses, the stereo buss, and the PFL and AFL busses

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ACN 004 259 527

## The new THX spec: how it has changed

*Stuart Bowling at THX details the difference between the 'old' THX spec and the new:*

Digital sound now provides the listener a much clearer undistorted sound. Dynamic range has also been increased with Digital playback. Now the sound has gone from 4 channels to 5.1, 5.1 is Left, Center, Right, Left Surround and Right Surround.

The .1 is the Sub woofer, as this is a band limited it is not considered to be a true channel. However mixers can now send LFE specifically to the sub.

Now movies carry more sub information making explosions more realistic. Surrounds are now split in half so we now have stereo surrounds, mixers are now utilising the surround channels even more.

Star Wars Episode one was the first film to be mixed in Surround EX, a joint venture with LucasFilm/THX and Dolby. So the mixers can now add a rear surround allowing helicopters to land behind the listener and greater flexibility to panning sound round the room.

So what does this mean to a THX theater?

Well fortunately when the program was created we envisioned that sound would change and become more demanding on the system. So older certified THX houses were not that greatly affected when Digital came about.

Today we have changed the way we looked at Surrounds, more so with the

Advent of Surround EX. We now place them closer together and generally add a few more. This then continues to give the listener a more diffuse field of sound against having a pin point source. Digital overall demands more on the sound system. So to meet this we have increased power handling and placed more sub woofers in a screen to cope with this.

Digital and it's dynamic range also meant that theatres had to improve upon isolation between auditoriums. We revised our criteria for wall isolation to help reduce sound transferring between adjacent theatres.

• Thanks to Jands and Graham Thirkell for obtaining the above.



## HOYTS GO BIG ON SOUND

*3 different sound systems to try out!*

TWO HOYTS CINEMA COMPLEXES HAVE BEEN built within the walls of the new Fox Studios: the Cineplex, a 12-cinema complex, and the Arthouse, a 4-cinema complex.

Greater Union Entertainment Technology (GUET) has been involved with the cinema installation for all 16 cinemas, supplying and installing a large quantity of equipment in both complexes.

All cinemas feature Dolby Digital, providing six channels of digital surround sound in each theatre.

What makes this particular cinema complex rather unique is the fact that the three larger auditoriums in the Cineplex (Cinemas 1, 2 & 3) have each been equipped with a different type of sound system.

This situation is fairly rare within the one cinema complex, although it has taken place in the Malco Cinema complex in Memphis, where three different brands of speakers were installed in different cinemas in order to allow a direct comparison of the sound.

Cinemas 1, 2 & 3 of the Cineplex, each containing 357 standard seats and 75 VIP seats, are equipped with three-way sound systems. Digital soundtracks on today's feature films have the potential of pushing traditional two-way speaker systems designs beyond their performance limits. For venues as large in size as these three auditoriums, the three-way systems allow for a much greater level of power handling with minimal distortion.

One of the above-mentioned auditoriums is fitted with an Electra-Voice (EV) Variplex B three-way system, with Krix KX-1850 sur-

round speakers and KX-4610 subwoofers. The Variplex B system employs Electra-Voice's patented Vari Intense (VI) variable-intensity horn system. The horn system allows the sound coverage for the entire seating area to be very uniform, so that the same level of fidelity may be achieved in the front, middle and back of the room, while the tonal quality is improved.

Another of the Cineplex's larger auditoriums, the THX Cinema, has been equipped with the JBL 5000 series three-way system. THX approval means simply that all recommended industry cinema standards must be observed in the theatre. Tests are performed within the auditorium in regard to the theatre's background noise, wall isolation, reverberation time, optimum audience viewing angle, appropriate SMPTE projection standards and the use of THX-approved equipment. When the THX program was created, it was envisaged that sound would change and become more demanding on a system.

The JBL 5000 series includes the JBL 5674 three-way screen channel system, and is driven by CSC DCA series cinema amplifiers. It uses Krix KX-4510 subwoofers.

The remaining auditorium of the three is equipped with a Klipsch three-way sound system. Installed on a trial basis the Klipsch KPT-535 system which is tucked away behind the theatre's screen, utilises Klipsch's Grand-HF Tractrix horn, and four THX-approved Klipsch KPT-684 subwoofers and sixteen KPT-250 three-way surround speakers.

• By Fiona Stack, GUET

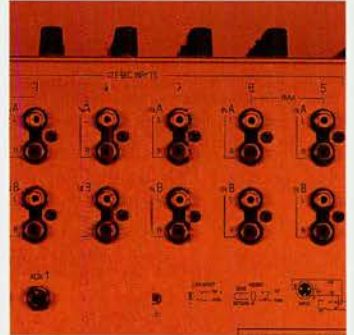
# Knowledge = Desire

## XONE:464 PROFESSIONAL CLUB MIXER

## XONE:62 PROFESSIONAL DJ MIXER

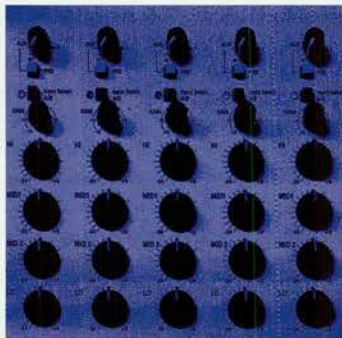
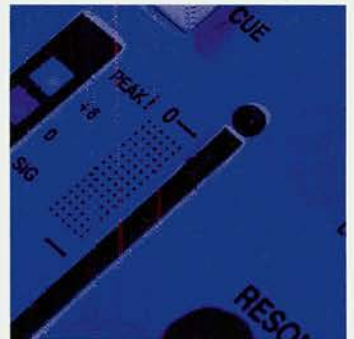
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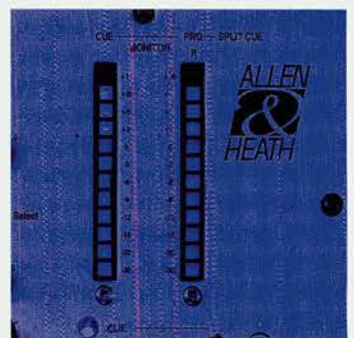
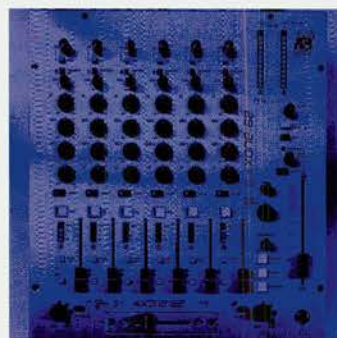
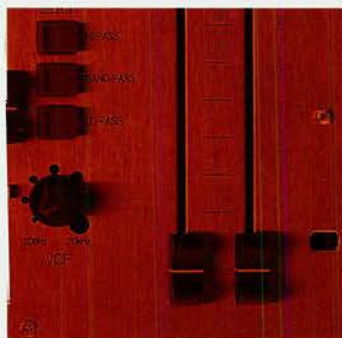
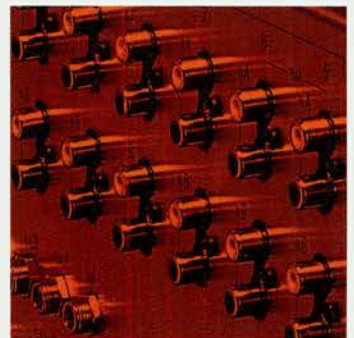
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## A PROPERLY SPECIFIED VENUE

*Angel Place is a surprise, equipped for more than music. Julius Grafton investigates....*

**H**OW RARE IS IT TO VIEW A NEW PERFORMANCE space and hear everyone involved say that everything works properly - that design, budget and the final result all harmonise. Hasn't happened to me, till now.

Angel Place City Recital Hall in Sydney is that place. Its got 1,250 comfortable seats, beautiful sightlines, and the holy grail of the recital hall, a decay time of 1.8 seconds. The location is half way between the other two venues of kind, the Sydney Opera House and the Sydney Town Hall.

Theatre designer Denis Irving and venue Technical Manager Tim O'Neill showed me over the venue, which is shoehorned into a tight block to one side of a large office tower. It was all built by AMP (the architects are Peddle Thorp and Walker) with the venue created in one of those performing arts industry political lobbying deals that most people don't understand.

The prime objective of the venue is classical music, and the design relies extremely heavily on acoustics, which were designed by Peter Griffiths from Arup Acoustics. If it didn't deliver the right result, the repercussions would be swift and crippling for all.

Like all good Sydney venues, a train tunnel runs under, so the venue is isolated within the building on rubber mounts. Every entry and opening to the venue is double isolated to kill stray noise. This includes the most amazing chain motor chain hole plugs which screw into dozens of motor chair access points through the venue roof (see picture).

Within the venue structure are the correct number and orientation

of lighting positions. Bars can be raised and lowered within the fly bridges themselves, while extra positions over the stage are behind ceiling traps. Above the stage are 20 chain motors, which can be slid along the support beams. Access traps are located every half metre, so theoretically any conceivable venue use can be accommodated.

"We've got all the infrastructure to do anything within the hall limits" says Tim O'Neill.

*(continued on next page)*



*Denis Irving*

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## City Recital Hall Angel Place

(from previous page)

This extends to more power than I've seen in a venue this size, 164 prewired dimmer channels, tielines everywhere, 7 spurs of three DMX lines each, and pre-wired audio multicores to the box, a venue FOH position, side stage and OB outlets.

There is a pull out floor area under some seats for a FOH position, which is lowered so the engineer ends up sitting at audience level. A voice PA of Meyer UPA boxes drops through a roof hatch, and is reinforced with extensive delay rings of small EAW speakers. A mic hoist for broadcast microphone about the stage is included.

The design provides a reasonable house lighting and sound system, with complete backbone for anything larger. This would never be used for orchestral music, but the venue is already attracting corporate functions - and in the first week hosted a live big band and Tom Burlison doing Sinatra for a corporate show.

Pegasus Productions are the venue managers, they manage the Hills Centre and also are fairly entrepreneurial - and were obviously chosen to extend the possible uses of Angel Place.

Amplified music wouldn't work with a 1.8 second room decay time, so the consultants (Griffiths and Irving) cooked up a really clever acoustic treatment that could be 'switched in'. Look at the venue photo on the previous page. See the square portals either side, on all three levels? Each has a hatch above, and at the press of a switch, a kind of 'acoustic doona' curtain, finished in royal gold fabric, winds

down. This reduces room decay to 1.4 seconds at the high frequencies.

The doonas were engineered by Irving with a lot of help from John Buckley of Jands. TCP were the prime contractor for audio, lighting and things theatrical - Jands Theatre Projects were sub contracted for mechanicals.

• *Angel Place are looking for part time tech crew. Call Tim O'Neill on +61 2 9231-9030.*



*Nice new followspot, shame about the centre of gravity! Irving and O'Neill were gobsmacked to find that the unit (above) had no forward-rear yoke pivot point. The roll of cable, carefully measured, provides the balance. The Manufacturer is working on a quick fix!*



*Technical manager Tim O'Neill with an acoustic plug. The idea is, the uppermost chain motors are OUTSIDE the acoustic shell. So if used, you choose a position, and drop the chain through one of many pipes into the venue. When not used the cap seals the pipe soundtight. "What happens when the pipe is open with a chain through it" you ask? AHA! An orchestral recital does NOT require flown props or scenery or PA's - so the chain motors are NOT used at that time!*

## No thanks!

Isn't it cool how many lobby groups and knowledgeable users get involved in the acoustics of a recital hall?

Peter Griffiths from Arup Acoustics must've been a masochist to take on this job.

"I was a little disappointed with the violin sound" Sydney Symphony artistic director Tim Calnin told the Sydney Morning Herald. "Not that it's chronically bad, just something that will have to be taken into consideration when we get in there".

The story, appropriately titled 'Devil's in the detail' goes on to quote the Australian Brandenburg Orchestra's artistic director Paul Dyer: "I think we need a bit more time to understand it ... but to be honest there's not a natural bloom on stage for the string section. And we need that bloom, otherwise it just sounds like Chopsticks".

But sometimes you can get it too right. Sydney Philharmonia chief conductor Matts Nilsson told the writer that he thinks the acoustic may "be too clear. It doesn't blend the voices enough. But I'm satisfied with Angel Place when it comes to ensemble singing. It's very easy for the singers to hear each other, which helps to produce a good choral sound".

But the six members of The Song Company, while agreeing that could hear each other with remarkable clarity, complain that the sound lacks presence. "I feel the sound goes over the listener ... it's like listening to something with a gloss on it - dampened, muted", says artistic director Roland Peelman.

The article goes on to say that several major hirers believed the hall's dry acoustic was the fault of a ceiling built too high.

Balancing up all the artistic carping, the story quotes Griffiths saying that what we are dealing with is subjective responses to a technical performance. And, Australian Chamber Orchestra artistic administrator Meurig Bowen suggested that perhaps the human ear needed adjustment. Not the hall.

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Marquis Series integrates with Sound Power and Venue Series, both sonically and visually, to extend the designer's reach to all possible areas.



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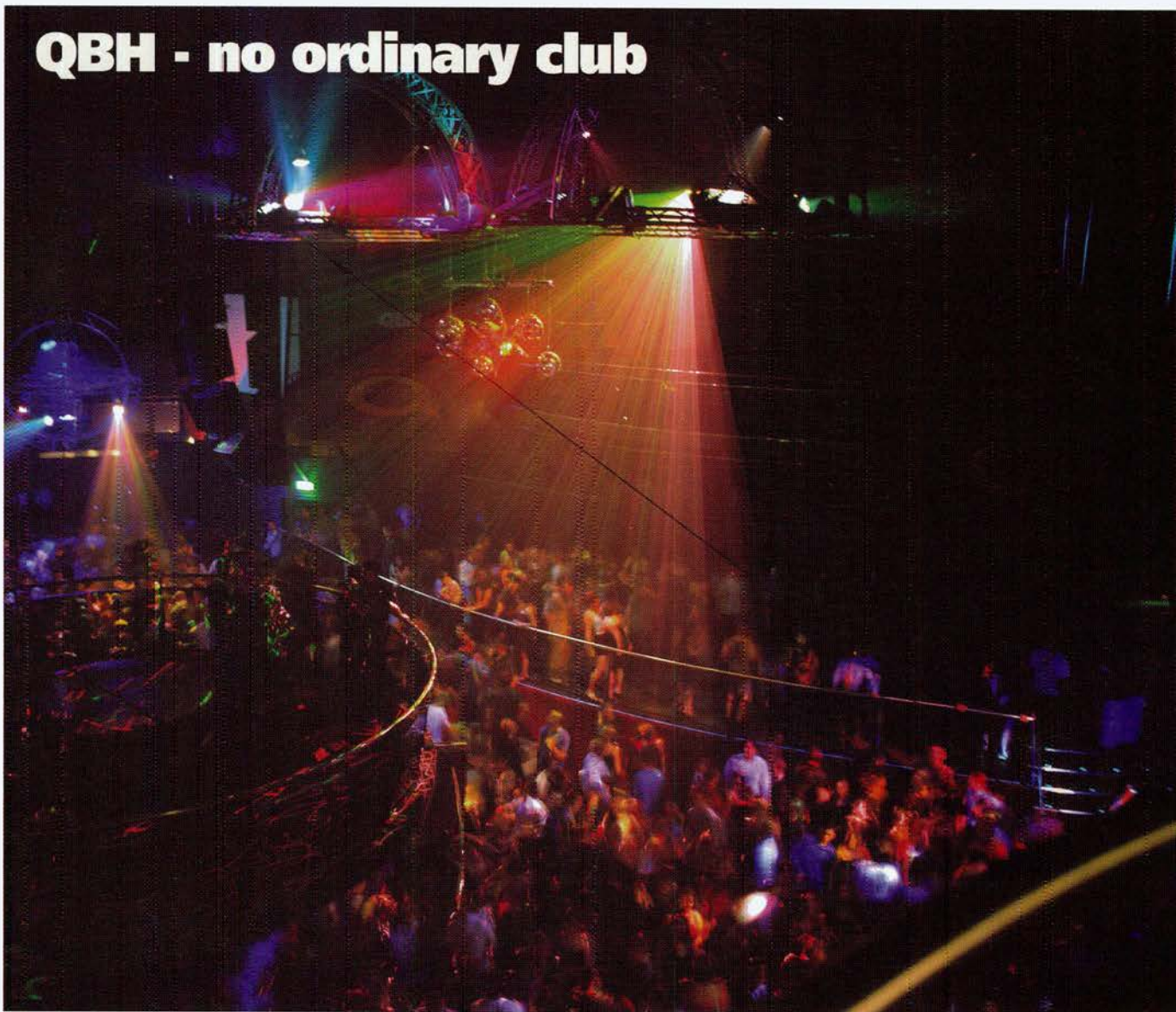
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# QBH - no ordinary club



QBH IS NOT YOUR REGULAR COMMERCIAL DANCE CLUB. The \$12 million redevelopment of the Queens Bridge Hotel in South Melbourne features 2 dance floors, seven bars, various lounges, a 24 hour cafe, and has a capacity of 5500. Architecturally and technically, it is state-of-the-art.

QBH has that 'no expense spared' look about it. Smooth surfaces, curved walls, chrome fittings and comfortable furniture. One of the dance floors is marble, the other is stainless steel, and even the

potentially dreary air-conditioning ducts have been turned into an architectural feature. The main design feature of the club is the huge glass sky dome directly above the dance floors. The dome even has a remote operated cover so those early morning rays of sunlight won't ruin the illusion for the 6am die-hards.

Owned by the Matheson group of Hotels for over ten years, the Queens

Bridge Hotel has been transformed from a 'little old pub' into a world class nightclub venue. Total Concept Projects have worked on a number of Matheson hotels so when planning for the new club commenced they came on board. TCP supplied design, specification and installation of the in-house production for the club, and have the ongoing maintenance and service contract.

David Brace, Account Manager from TCP, showed me around the new Melbourne club.

"They wanted to create something that was unique. They wanted to set a new standard with not only the design and architecture of the building but also the in-house production. It had to be head and shoulders above anything else, to be able to give DJs, bands and the nightclub industry an exceptional new venue in Melbourne, and that's what they've achieved."

## The lighting spec:

QBH features three truss balls which are the basis of the dance floor lighting rig. Two of the truss balls are three metres in diameter and are suspended on chain motors cleverly recessed into the ceiling. The third truss ball is five metres in diameter and is totally unique in design. The ball can be lowered on three separate chain motors and then opens up into two half domes over the centre of the dance floor creating a ten metre truss rig.

Designed specially for the venue, David says the moving truss ball is totally unique.

"There isn't another moving rig like that anywhere in Australia. I've been to clubs all around the world and I've never seen anything



quite as unique and effective as that."

An additional truss ring is suspended directly below the glass sky dome.

Fixtures include 10 x NAT 1200s, 16 x Futurelights, 3 x Galactic Star mirror balls, 2 x Xenon strobe units, Vortex and Cosmo disco effect units and various other effects lighting units. Two diffusion foggers are installed under the stage platform to provide hazing.

A full colour laser is installed above the DJ booth and requires water cooling of 11 litres per second to maintain safe operation. Bounce mirrors are located around the perimeter of the main room to accentuate the laser beams.

The other main design feature of the club is the fibre optic installation which runs throughout the entire complex. Fibre optic feature lighting was installed under stairs, floors, awnings, bars and handrails around the club. The fibre optics can be set to one colour or can run a sequence of slow fades to different colours to vary the look of the venue dramatically.

A Showcad control system is used to program and operate all lighting and effects systems throughout the club complex.

### The audio spec:

TCP designed the audio system to be run in two separate modes.

In nightclub mode a Rane MP24X DJ mixing console is used, and in live band mode the Midas Heritage FOH desk is used.

Both modes utilise the EV speaker system of 8 X-Array 1183-64s, 4 X-Array 2181 subs and 4 EV SX300s flown in clusters on each side of the club. An additional 8 Deltamax boxes are used for dance floor fill in nightclub mode.

The system is powered by EV amplifiers - P3000s, P2000s, P1200s and Q66s, with Merlin ISP-200 and EV DX34A Crossovers. Processing includes DBX 166 stereo compressor/limiters, Klark-Teknik DN360 graphic equalisers, quad noise gates, and

SPX990s.

In addition to a spacious and well equipped DJ box, QBH has a remote DJ box which can be set up anywhere in the room.

"It's another unique concept we designed for QBH. It's run by a remote UHF feed, so all it needs is power. It's great because when they have guest DJs we can literally put them anywhere and that's what they wanted to be able to do in the venue. So instead of having to run stereo

audio feeds all over the club and then be limited by the locations it has all been done with a Shure UHF system. The only thing is you can't do is have your mobile phone on while you're DJ'ing!"

As David explained, the club is equally suited to being a world class live band venue.

"It's set-up with the Rolls Royce of in-house PAs. There's not another PA in the country that comes close to it" he claims. "From the Shure Beta mics and

stands right up to the 48 channel Midas Heritage FOH desk, everything is there. The Rolling Stones could walk in here tomorrow and play, and be happy with what they got. And that's what the intention was."

- By Mandy Jones

QBH is at 1 Queensbridge Street, South Melbourne. The Owner/Manager is Bruce Matheson.



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RCA jacks for record and playback  
3-band master EQ

### PM-401D

4-Channel Powered Mixer Mono  
100 watts rms, 4 OHMS  
Digital Delay  
Individual Channel Equalization  
1/4" and XLR inputs  
RCA jacks for record and playback  
3-band master EQ

### PM-602D

6-Channel Powered Mixer  
200 watts rms, (100w+100w) 4 OHMS  
Individual Channel Equalization  
1/4" and XLR inputs, Phantom Power  
Individual Monitor level control  
band master EQ.  
Delay reverb/effects level control  
1/4" headphone jack & level control  
RCA tape/CD record and play jacks with level control

### PM-802D

8-Channel Powered Mixer  
300 watts rms, (150w+150w) 4 OHMS  
Individual Channel Equalization  
1/4" and XLR inputs  
Individual Monitor level control  
band master EQ. Delay reverb/effects level control, 1/4" headphone jack & level control, RCA tape/CD record and play jacks with level control



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Write in Reader Service Number: 198

## Letter of the Month

I can't let the comment in your November magazine pass, where Peter Fenton at the Screen Sound Awards just had to make a comment about Lisa Hensley's tits. Why not just leave this out of the coverage?

**- Barta Nadriath, email.**

• You read the story selectively, Barta. The par prior, Ms. Hensley herself said that "most of the men present had touched one of her breasts", meaning she had been wired for sound by them. -Ed

## Suggestions....

My only suggestion for your magazine is that you profile smaller companies, not just the big ones. And while I'm at it, why not smaller, cheaper items of gear too? We can't all afford the big stuff.

**- Aldo Scott, email.**

• Points taken well. In general we don't actively 'profile' companies, preferring to write about actual projects. Small players probably have less time to tell us about them, whereas larger firms employ people to generate PR. But anyone should feel welcome to drop us a line.

## With my own kind!

I simply loved the imagery in your story of the Screen Sound Awards, when darling old Clive Cross stands and says "I'm very pleased to be with my own kind". Gorgeous!

**- Barbara Jansen, email**

## It must be the weather

I recently purchased a (brand deleted) soundcard from (deleted). Since, I've been unable to make it function in my PC. The dealer principal, Mr. (deleted) threw me out of the shop when I demanded a refund. Why don't you review this soundcard and tell our readers what a turd the shopkeeper is.

**- Name withheld, email.**

• Speaking with the shop owner concerned, the problem lies somewhere between Win 98 and your PC vendor. It seems your PC is a 'yum cha' kludge of cheap components. The shop owner tells a long story about you walking in with three quotes and hammering him down on price. When asked about your PC you shrugged your shoulders. Once the card didn't appear to work, you stormed into the shop, yelling abuse. The shop owner didn't actually refuse a refund, but asked you to refrain from yelling and swearing. You refused, and so were asked to leave. Despite your ridiculous behaviour, the refund was posted to you the following week, after the shop owner tracked your address down via the phone book. This is because you refused to supply it at the time of sale, stating that the shop owner would sell it to a direct marketing organisation.

The shop owner is distressed that we became involved and was fearful that your story would be published to their detriment.

We suggest that you possess a personality disorder. -Editor

## Time for an 'outing'?

Some degree of 'outing' is required so buyers of lighting desks are warned about (brand deleted). I have one which simply doesn't do what the brochure and user manual say it should. The dealer says tough luck.

**- Name withheld, email.**

• We don't go about an 'outing' unless all other channels of remedy have failed. Go past the dealer and contact the manufacturer direct (I have emailed you a contact name). Last resort, look at the remedies under the consumer laws in your territory. If all that fails, send us all documented proof - and be prepared to put your name to the complaint.

## Happy Days Mic

Nice article on the Happy Days arena show. I think you'll find that the headset mics used by Jands is the AKG C420 headset mic. They were also used for the production of Grease.

Also, you probably know that our product manager, Michael Guest is no longer with us. A replacement will be appointed shortly.

**Paul Turner**

**Area Manger, SA/VIC  
AWA Audio Products P/L**

## Tech Training in QLD

In the August '99 issue Sven Markus Jordon wrote in from QLD asking about training for sound or lighting, and you mentioned after his spiel that there were lots of enquiries for this type of training.

The "Entertainment Training Package" has just been released by the Australian National Training Authority and embraces training for all Backstage areas as well as Front of House.

The Morningside campus of Southbank TAFE was part of the team which put it together and is also delivering a Technical stream which incorporates it.

Your contact person and phone number is Paula Wane (Arts Dept) (07)3244-6317. Her fax Number is (07)3244-6401

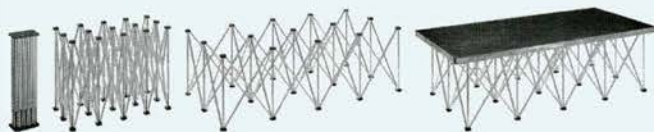
Wide Bay Institute of TAFE in Hervey Bay is also delivering some of the technical modules through the Advanced Diploma of Performing Arts which can be taken separately from the acting modules. The contact name there is Jonathan Dunn on (07)4120-6256. Fax number (07)4120-6423

My name is Sue Hart and I am a part-time tutor for the Hervey Bay campus in the Performing Arts Dept. I am also a freelance lighting operator in our local area and occasionally in Brisbane. I moved up here after working steadily in the Sydney scene for 7 years in the '80's.

**-Sue Hart, email**

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## Survey responses

We periodically bother our readers with surveys, so we can find better ways to deliver the kind of material you - they - like to read. The latest batch had some very interesting comments buried within, and I thought as a good editor I'd share them around.

First up, we are struggling with perception, which is a reality of life. We all are perceived in different ways by different people, and we often have little control over it!

One line of perception from one group of those surveyed was that Connections isn't for end users. It's a trade magazine, they say. Not true, we cry!

We unearthed plenty of end users in the survey, which was aimed at subscribers. We've always sold through newsagents, where many people buy the magazine on an optional basis each month. And, we've been on those same shelves for seven years now!

Greg at Music Farm Studios says that our strength is that we are able to relate to most in the industry. "I have brought a lot of great gear out of this mag" he says.

Neil Gray at True Form Music thinks that it'd be hard to improve Connections. "With such a wide area of interest it is impossible to please everyone all the time".

This is certainly true with some anonymous responders who used our Accountant as a mail drop. Perhaps reflecting the psych profile of *some* people in the lighting industry, all the responders (and these were only a handful) who felt they needed to hide their identity came from the lighting side of the industry! They have nothing to fear from us, since their main complaint was that the Lighting Section isn't large enough! We all agree on that!

Get this: one of this group - who described themselves as a business involved in lighting - demonstrated their remarkable lack of marketing and contemporary business thought by complaining that Connections had shown no interest in their outlet for the past five years - without saying who they are! I hope THEY know!

We got a lot of lament that Michael Orland isn't currently writing for us, and it's not all that surprising that Duncan Fry is clearly the most popular writer here by a country mile. Also the most unpopular with a tiny minority, and wow - those few really do hate his guts! On 'yer, Dunk!

We asked about our ethical position, and got confirmation that almost all our readers agree that we are doing OK there. But once again, one of the anonymous lighting people, this time someone with a typewriter (for goodness sakes) complains:

"Ethics is a matter of personal conscience, so it is not for me to say on your behalf". And in regards to our weaknesses: "Your biased approach." Biased against whom, we wonder? Grumpy lighting people with typewriters, I guess!

Jon Robertson at Feral Studios thinks our ethical position is fine. "You need to call a spade a spade and not be influenced by large advertising budgets". Sounds good to us!

The overall impression I get from pouring through the surveys is that there are always things to do to make this magazine better. And the surveys are full of great story suggestions too.

We've got some internal reorganising going on over the break, all aimed at better and more timely information in these pages. As we head into our eighth year I'd like to sincerely thank all our readers for your support. I hope we never take it for granted.

**-Julius Grafton, Editor.**

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# Millennium Bugged

## Duncan Fry



He couldn't POSSIBLY be THIS good looking!

Hands up if you're as sick to death of hearing about the next millennium as I am? Well, I can't see you out there, but I'm willing to bet that quite a few hands gave a bit of a twitch! Personally I just don't know what all the fuss is about. As far as I'm concerned it's just another New Year, and having survived quite a few New Year's Eve's on the road I'm quite looking forward to spending this one safe indoors.

Mind you, the one good thing about gigs on New Year's Eve is that there are few safer places to be than surrounded by a huge mass of steel behind the wheel of a big truck (provided you don't fall asleep, that is!). Should there be trouble, you can almost guarantee that the other vehicle will come off worse.

This being the end of the 19's and the start of the 20's, doom sayers are everywhere saying this will stop working, that will shut down, we'll have no (insert scare of your choice- water, food, gas, electricity, traffic lights, money in the bank, whatever) and go back to living in the Dark Ages.

Restaurants want upwards of \$500 a head for warm champagne and rubber chicken on December 31st - beats me how they're going to cook anything without - you guessed it - water, food, gas etc etc!

Last year, having weaned myself off New Year's Eves spent making drunk bands sound good enough to keep a roomful of even drunker drunks happy for a few hours, her indoors and myself plus some friends went on a cruise up the Yarra. It was \$80 a head for a tolerable evening out, despite being blasted non-stop by a DJ playing Jive Bunny versions of his idea of classic rock. (Love those DJ speaker systems - an 18 and a piezo! Vocals? What vocals? But I digress)

However, for this year the cruise company wanted \$550 a head for essentially the same thing. Forget it, we said. There are lots of things two people can do with eleven hundred bucks and not one of them involves giving it to Cap'n Klaus (*see footnote 1*) and the DJ from Hell!

So who'll be going to these expensive functions? Nobody in my social circle, that's for sure. Only the must-be-seen beautiful people, plus the obligatory real estate agents, Hooray Henries and bleached blonde-bobbed bimbos in BMWs from Brighton, if the glossy mags' social pages are anything to go by. (Uh oh, my secret's out - if my subscription copy of No Idea doesn't lob into the letterbox of a Monday, then my whole week is just ruined.)

But even if they're not actually working, then just about everyone I know will be on some kind of standby in case of emergency. Even my old friend LL, laser printer supplier to the cognoscenti, is on standby in case the millennium bug bites and laser printers across the state cark it on the stroke of midnight. Although it's hard to know just what he'll do, since there's a VERY big difference between selling laser printers and fixing the bloody things!

I can just see it now. It'll be like a scene from that daytime soap opera Young Sales Reps On Heat - on the stroke of midnight, anxious sales reps are clustered around the laser printer, weeping and gnashing their teeth; in strides LL, lifts up a corner of the dust cover, sighs, and lowers it gently. "What's wrong?" they all ask, looking at him for guidance. LL clasps them by the shoulders, stiff upper lip trembling, eyes moistening, as he gazes nobly off into the distance and says "There's nothing more I can do-it's-it's fucked!"

And who wants to be on the road in a car, driving to and from some function?

As I write this the police, firefighters and hospitals have just had their 500% wage increase for New Year's Eve knocked back and are looking at industrial action, so that should make it pretty safe on the roads, shouldn't it?

Back to the old pre-drink driving awareness days, where it was every man's right - nay, duty, to get horribly shitfaced and then attempt to aim the car in the general direction of home, on whatever side of the road took your fancy.

"I'll be all right once I get behind the wheel", they'd dribble, as they tried to fit the ignition key into the cigarette lighter. (And if you think I speak from experience, you're right! *See footnote 2*)

So there's every likelihood that New Year's eve revellers will have the roads to themselves this year. There'll be no police to book you, no firemen to cut you out of the car, and no-one at the hospital to sew you back together. A night clustered around the old AWA Radiola watching Clive James and those wacky Japanese game shows is looking pretty good.

Actually my nephew was born on New Year's day.

He's 18 or 19 now, with hangovers of his own, but when he was a kid we had to front up to his birthday every lunchtime New Year's day, dead tired, no sleep, with ears still ringing from working with Fred Furkensturkle and the Fudgepackers all night, and make polite conversation with his parents, neither of whom drank much if at all.

I sometimes wonder if he thought jolly old Uncle Dunk had some kind of terrible debilitating sleeping sickness that caused him to slowly nod off head first into his soup bowl every birthday! But being a well brought-up lad, he's no doubt too polite to mention it.

Anyway, have a happy and safe time over the holidays, and let's hope that any millennium bug doesn't bite too deeply (stop laughing all you bug-free Mac users!).

See you in the New Year.

1 From Terry Southern's classic humour masterpiece, *the Magic Christian*. Forget the movie, but definitely read the book

2 Check out [www.world.net/~dunkfry](http://www.world.net/~dunkfry) and go to car stories

### Editor reminisces re NYE

Don't you remember all those New Years Eve gigs? Mainly they're all bad memories for me! Actually, I had a good one working at the Stardust Hotel in the late 1970's with some band or another, and only six people turned up. But we all had a good time anyway!

Before that, my dear friend the late departed (and not forgotten) Roger Barratt had me working every new years eve on Festival Of Sydney concerts at the Sydney Opera House. We did lights, Jands did sound. The creative director had Barratt running ragged, we must've festooned five miles, all before lunchtime. These were four day - and night - setups.

Since, I can count on one hand the really good NYE's. This one will be spent at a much publicised gig - report to follow!



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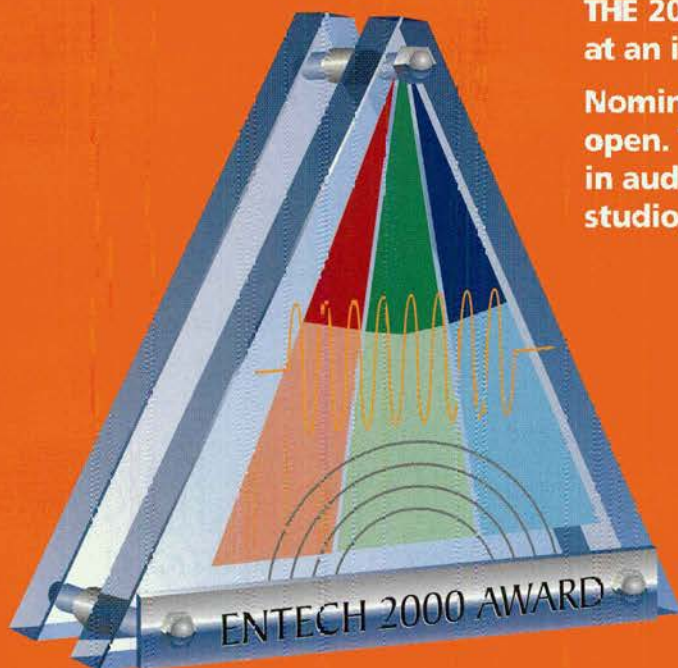
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# call for nominations



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## Audio Cables and Pseudo-Science or: cables remystified

Part 1. By John Matheson

**A AUDIO CABLE MUST INTERCONNECT TWO PIECES OF** audio equipment in a system without introducing any signal degradation of its own, or allowing external influences to degrade the signal. It must be reliable, flexible and able to withstand all sorts of abuse without its signal properties being affected.

Most audio industry professional are (or soon become) far too hackneyed to be over enthusiastic about high performance audiophile loudspeaker and signal interconnect cables. And yet for many there is a lingering doubt about whether more money equals better.

In the Land of Audiophilia, however, interconnect cables are a contentious topic and subject to a lot of argument. This article attempts to put some perspective on the debate. I welcome discussion from readers, either by Letters to the Editor or, if you prefer, directly to my email address which can be found at the end of this article.

The snake-oil merchants of audiophile interconnect cables exploit a general lack of understanding of the basic electrical properties of conductors and electromagnetic wave physics, to purvey all manner of pseudo-scientific explanations for why you

should spend \$200 per metre or more for the latest improvements in mythical signal purity.

One of my favourites is the cable constructed of three different diameter wire strands – fat ones for bass, medium ones for mid-range and thin ones for treble, on the basis of skin effect. The only significant skin effect at play here is the gradual darkening of the pigmentation of the skin of the cable's vendor and family after extracting enough money from gullible consumers to spend summer in the Maldives. I'm certain these cables go a long way to improving the quality of life of the vendor, but as to sonic improvements.....

There *are* audible differences between cables of different constructions. Sometimes the scientific community takes a little time to come up with an explanation for an audible phenomenon. But it rarely involves the re-writing of the existing Laws of Physics! A proper understanding of the physics of cables not only explains why these audible differences exist, but gives pointers to where future improvements can be made.

> continued on next page



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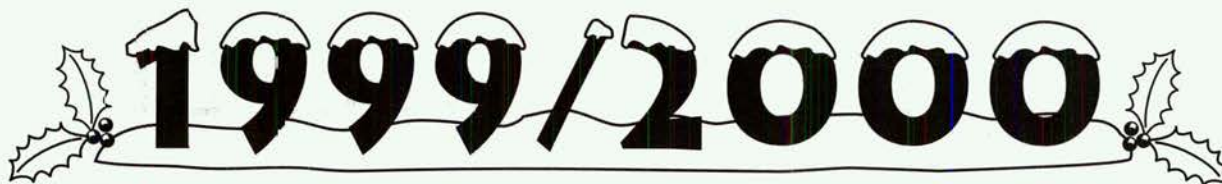
Daniel Duffell - DJ Magazine- UK



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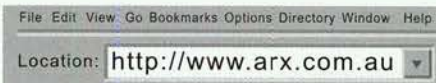
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We certainly hope you have a happy and safe time over the holiday period, and we look forward to even better times in the next thousand!



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## Audio Cables and Pseudo-Science

(continued from previous page)

### Conducting the Flow

We live in a world where materials are categorised as conductors, non-conductors (insulators) or semiconductors. Note that semiconductors are *not* half conductors or bad conductors! They are materials that can sometimes behave like conductors and sometimes like insulators. Semiconductors don't have any application in signal interconnects as far as I am aware and we won't consider any further here.

A signal interconnect consists of at least two conductors separated by an insulator. The performance of that signal interconnect is affected by the physical properties of the conductors *and* the insulator *and* the geometry between them.

Conductors vary in how freely they allow electrons, the basic carrier of electrical signals, to flow. Those that are the most conductive offer the least *resistance*. Gold, silver, copper and aluminium are all good conductors listed in descending order in terms of both performance and cost.

The free electrons around an atom behave like swarming bees buzzing around a hive (the atomic nucleus), except electrons are dumb and keep crashing into each other and the nuclei! The collisions give rise to electrical noise, which turns out to also be a function of temperature. The hotter the conductor, the faster the electrons buzz around and the more frequent and violent the collisions.

The nuclei of a conductor's atoms may be randomly distributed, like people in a crowd. You can imagine that an electron travelling in one direction is going to have a lot of collisions. (We all know this from trying to get from the dance floor to the bar in a hurry. If only everyone would only stand in neat arrays with corridors between, we'd be able to quench our thirst much sooner.)

Because electrons are buzzing around at near the speed of light, they will experience squillions of collisions per second. Except in super-chilled conductors, the additional number of collisions due to a net current flow in an electrical circuit is almost inconsequential against this background.

However long crystal, oxygen free copper (OFC) is an attempt to put order into the nuclei of copper by lining up the nuclei. Oxygen atoms in copper disrupt the formation of an orderly crystalline structure. It is hard to think of metals as crystalline, but the crystals are microscopic and able to slide over each other when a conductor is bent.

Oxygen free copper is measurably better than "regular" copper. However in most applications it would be fairly difficult to

attribute an audible difference due to these properties alone. But what the heck, every person and their dog now claim their cables are made of OFC.

Insulators have important properties too and like conductors, the better ones tend to be more expensive. Most insulators used for signal cables are molecular polymers. These long chains of atoms are inherently flexible, a desirable property for ease of handling.

However, not all polymers are created equal. Some have regions of negative or positive charge, ionic ends if you like. These ionic ends are attracted or repelled by the electromagnetic fields associated with current flow and try to move to follow them. The resultant friction between molecules absorbs energy from the signal current.

Air is an insulator with useful properties and is used in a lot of applications such as air cored coaxial cables and, before fibre optics, the old-fashioned air spaced telephone lines we used to see on telegraph poles.

### Characterising Cables

An electrical current always has an associated electromagnetic field. The electrical part of this field is the potential difference that causes the current to flow, or results from the flow depending on the nature of the circuit. Likewise the magnetic field results from

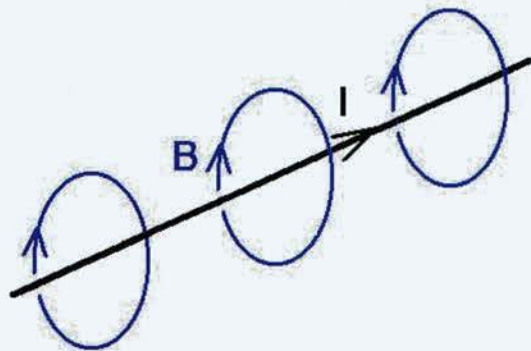


Figure 1: Magnetic field around a conductor follows the "Right Hand Rule". Place the thumb of your right hand in the direction of current (I); your fingers wrap in the direction of the magnetic field (B).

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the current flow, or is the cause of it. It is important to realise that current cannot flow without these associated fields, and that these fields contain energy.

The magnetic energy surrounding a conductor with current flowing in it does not come from no-where; it comes from the circuit itself. When we try to start up a current, some of the energy is used to build up this magnetic field. And when we try to stop the current, the collapsing field returns that energy to the circuit, acting like a flywheel and impeding the slowing of the current. This is the property of electric circuits known as *inductance*. The degree of inductance is affected by the magnetic permeability of the medium surrounding the wire.

*Capacitance* is an analogous property in response to difference in electric potential. When we try to raise the voltage of a conductor relative to another, we need to remove electrons (negative charge) from it. The amount of charge we need to move is a function of the *capacitance* of the conductor. Whenever the voltage on a conductor changes, current will need to flow into or out of the conductor as a result of its capacitance, thus impeding the rapid change of voltage.

The three basic properties of conductors – resistance, inductance and capacitance – are collective known as *impedance* or *reactance*. Just to make things difficult, reactance is frequency dependent.

And whilst on the subject of making things difficult, there is another property, the *characteristic impedance* of a cable, which has little to do with its reactance. The geometry and dielectric properties of its construction determine the characteristic impedance of a cable, not its resistance, inductance and capacitance.

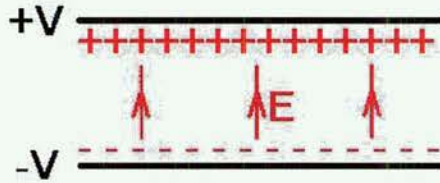


Figure 2: Electric field (E) between two conductors of different potentials (V)

is similar to the length of a cable we want to shove the signal down. The wavelength of a signal is given by the formula  $\lambda = c/f$  (wavelength equals the speed of light divided by frequency).

Since light travels at around 300,000,000 metres per second, at audio frequencies the wavelengths range from 1,500 down to 15 kilometres (20Hz to 20kHz).

Unless your cables are of this order of magnitude in length, you can forget about the application of transmission line theory for audio!

Long distance telephone companies could not ignore the effect. It turns out that two wires spaced about 500mm apart in air has a characteristic impedance of 600 ohms. The pervasion of 600-ohm technology into early professional audio equipment was a carry over from the main audio technology industry of the time, telephones. (If you don't know what I am talking about think yourself lucky!)

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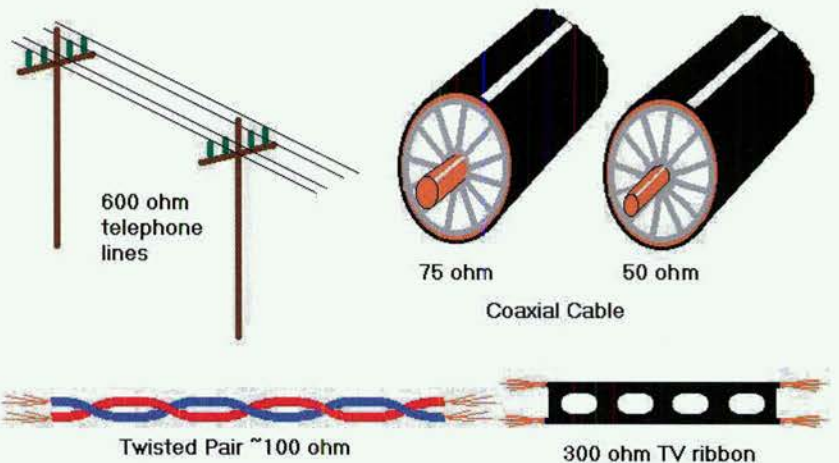


Figure 3: Characteristic impedance of different cable constructions

## Transmission Lines & Impedance Matching

The term transmission line refers to an effect that occurs when the wavelength of an electrical signal

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## Audio Cables and Pseudo-Science

(continued from previous page)

If the spacing between wires is reduced to about one centimetre, the characteristic impedance falls to 300 ohms. Remember flat TV ribbon cable? Going further, the spacing of conductors typical in twisted pairs such as telephone and microphone cables give rise to a characteristic impedance around 100 ohms. Note that these are generalisations that do not take into consideration conductor sizes and insulator dielectric properties.

In coaxial cables, the characteristic impedance is a function of the inner conductor diameter relative to the spacing of inner and outer conductors. For example, 50 ohm cable (used in radio applications) has a smaller inner conductor than a 75 ohm cable (used for TV and video) of similar outer dimensions.

When wavelengths are short compared to our cable length, the cable will behave like a transmission line and we need to provide correct impedance matching to prevent the reflection of energy at the ends of the cable. For video with a bandwidth of 10MHz, the wavelengths are as short as 80 metres. If cable impedance is not matched properly, ghosting can result as well as a loss of brightness in the image.

Digital signals such as AES/EBU and DMX (oops, a bit of lighting techno has slipped into this article) also need correct cable matching, as do all radio frequency signals such as radio microphone antenna cables. Back to audio frequencies, if the interconnect cable you are investigating makes any claims about transmission lines, your being sold on pseudo-science.

### Cable Constructions

There are only a small number of basic cable geometries commonly available: spaced pairs ("figure 8"), quads and coaxial. Note that pairs and quads may also have a screen, but unlike the coaxial cable the screen is not normally part of the circuit. Whilst resistance is always a function of conductor size, these three basic construc-

tions have a different balance of capacitance and inductance.

Quad cables work by creating opposing magnetic fields between adjacent wires. The net result is a reduction in stored energy (and hence inductance) by a factor of about ten. The down side of quad construction is the increase in capacitance, however for many applications, low inductance is more important than low capacitance.

The lower level of the magnetic field associated with a quad configuration is a reciprocal property to its greater immunity to induced noise, the main reason quad microphone cables have become popular. Quad loudspeaker cables will radiate less rubbish into other cables, something worth remembering in complex installations.

*In Part 2 of this article we will look at different applications and ideal cable constructions for each - and explode a few more cable myths!*

John Matheson

johnmath@senet.com.au

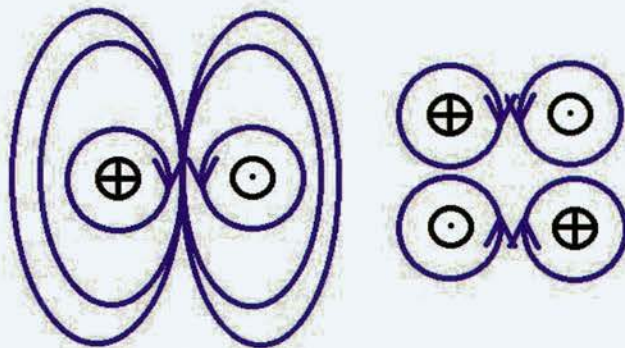


Figure 4: In quad cables (right) the external field is suppressed by counter opposing fields, resulting in lower induction, lower noise radiation and lower induced noise pickup.



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[www.sae.edu](http://www.sae.edu)

# How to do it

## TOM MISNER'S PRACTICAL STUDIO TECHNIQUES

- PRACTICAL RECORDING (Part 21)

### DRUM KIT OVERHEAD

Usual microphones are Neumann TLM170, AKG C460 or Schoeps CMC; use MS stereo technique or, if a wide stereo image is required, use AB stereo technique; position drum kit in semi-live area; compress the overhead microphones 4:1; use a high pass filter below 100 Hz; avoid using equalization if possible.

### ELECTRIC BASS GUITAR

Usual microphones are EV RE 20 or DI box; equalization boost 80 Hz and 800 Hz; compress at 6:1 with slow attack time; flange the sound for special effect; record at 0 VU; can be recorded on edge tracks; if used with amplifier beware of excessive spill into other microphones.

### DOUBLE BASS

Usual microphones are EV RE 20, Sennheiser MD441; compress at 10:1; record at -3 VU; very susceptible to spill from other instruments; place in an acoustically dead area; can be recorded on edge tracks.

### ACOUSTIC GUITAR

Usual microphones are AKG C414, Neumann U 87 or for a tight rhythm sound use Sennheiser MD441; compression 2:1 on steel string guitars, 6:1 on nylon string guitars; equalization cut below 90 Hz, boost around 500 Hz and boost around 4 kHz; place instrument in acoustically live area; use pitch shift if you require a 12 string sound; place microphone at the lower left hand (from engineers point of view).

### ELECTRIC GUITAR

Usual microphones are Shure SM57, Beyer N 260, Neumann U 87; use a short delay (20 ms) for a fuller sound; place microphone in front of one of the speakers of the guitar amplifier; use a second microphone approximately 1 meter away; compress at 8:1; use high pass filter at 100 Hz; pan the guitar in the mix to the left and a delay of the guitar to the right.

### GRAND PIANO

Always record in stereo; usual microphones are Schoeps CMC, AKG C422, Neumann KM84; record at -5 VU; limit the signal at 12:1 fast attack time; avoid equalizing; carefully check the phase relationship of the microphones and position accordingly; the grand piano should always be recorded in the live area.

#### RECORDING INFO: Using HP and LP filters

Using the High Pass (HP) and Low Pass (LP) on a sound source before recording. This will eliminate the unwanted high and low frequency component and allow a higher recording level to tape. Only a few instruments require a full bandwidth such as grand piano, vocals and organ all other instruments can be recorded with a restricted bandwidth. The filters should be adjustable to gain the most flexibility.

### SAXOPHONE

Usual microphones are EV RE 11, EV RE 20, Sennheiser MD421; place microphone off centre approximately 1 meter away from bell; avoid placing the microphone close to the keys of the instrument; use a short reverb setting; compress at 4:1; place instrument in acoustically live area.

### FLUTE

Usual microphone is AKG C460; place microphone about 1 meter away at 45° facing the mouth piece; record at 0 VU; place instrument in acoustically live area; equalization cut around 8 kHz; use a slow decaying reverb.

### BRASS SECTION

Usual microphones are Sony C 37, AKG C414; compress at 8:1; place microphone at least 1 meter away; balance instruments acoustically before recording; insert a gate across the microphone; add a short reverb; record at -2 VU.

### VIOLIN

Usual microphone is AKG C451; place microphone 2 meters above instrument; record in a live area; equalization cut below 120 Hz, boost around 700 Hz; compress around 2:1; use a de-esser to take the edge of the instrument; slight amount of flanging can be used as a special effect.

### STRING SECTION

Usual microphone is AKG C451; record in stereo; use a high pass filter from 300 Hz; do not compress the string section; record at -3 VU; pan full left and right during playback.

### PERCUSSION

Usual microphones are Neumann TLM170, Beyer MC740; place microphone above percussion instruments; record in stereo; use high pass filter at 150 Hz; compress at 6:1.

### CELLO

Usual microphones are Neumann U 87, AKG 414, Beyer MC740; place instrument on a hard surface; record at -1 VU; face the microphone onto the sound hole; the instrument is very susceptible to spill; equalization boost 100 Hz, cut 600 Hz, boost around 3 kHz.

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

# How to do it

## DUNCAN FRY'S LIVE SOUND MIXING SERIES

### - EFFECTS (Part 1)

Effects are the devices that let us add echo, chorus, reverb to the original signal. In the majority of cases effects are run from the Auxiliary sends of the console. The signal goes out to the effect, is modified, and is then brought back into the console and mixed in (sometimes in very small amounts) with the original signal.

These units have been around for quite a while, in various forms, but the advent of digital technology has seen them proliferate enormously.

There are just so many that a book like this can't go through them all, so we'll stick to models that have all the typical characteristics and controls of a particular type of effect.

We'll split delay units into four categories: Tape, Analog, Digital with knobs and Digital without knobs. Reverbs will be covered by three sections: a short one on the Spring type, and then Digital Reverbs with knobs, and Digital Reverbs without knobs. In this way we'll cover just about every type of effects unit you're likely to come across.

### Tape Delays (Tape Echo units)

Tape delays have been around for quite a while, and although superseded in many cases by the digital delay, they do have a 'feel' to their sound that many digitals don't have. They are also a cheap way of getting a very long delay.

### How to get it to work

Use any input unless there is one marked "PA In". Set the LEVEL switch at the number closest to 0 dB, and the Input Volume control at about 2 o'clock. Set the Output Level the same if it's adjustable. The Mode switch sets up the type of echo (short, medium, long), and the Repeat Rate fine tunes the echo speed by speeding up or slowing down the tape.

Some Space Echo models have built in electronic Chorus effect, like a guitar pedal, and this whole family of delays has one of the twangiest reverbs ever!

On some models a shorted out guitar jack plugged into the Remote or Foot Switch socket will shut off the motor during the band's breaks to avoid wearing out the tape. Don't forget to pull it out when the band goes back on stage again, though.

One final thing on Tape Delays. If the tape chews itself up,

you'll have no delay. Keep a spare tape in the drawer of your effects rack for emergencies. Don't use ordinary recording tape or it will chew up in about 2 songs. The tape is special graphite lubricated tape; if you can't get any you could get an old 8 track cartridge (remember them?) or the professional cart version that radio stations used.

### Analog Delays

Analog Delays were an interim model between Tape and Digital. Even the good ones suffered from a lack of HIGH end on any delay over 300 milliseconds (ms), but they usually worked reliably enough, having no tape to wear out.

### How to get it to work

Set the Input at about 2 o'clock and the Output the same if there is one. Set the Mixing control at all Delay, as we only want the delayed signal: set up the delay you want in milliseconds (usually switches for Short through Long and a knob to fine tune the delay), the amount of repeats on the Feedback control, and bring up the return on the mixing desk.

Stay away from any controls marked Frequency Modulation, Depth or Speed unless you are using very short delays and want chorus or flanging effects. If you do, then press the shortest Delay switch in, and set the Frequency and

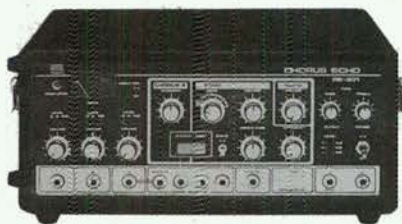
Depth controls at 12 o'clock. You should hear a sweeping chorus type effect. Move each control and listen to the difference.

### Digital Delays

The whole digital effects revolution has been the biggest major change in sound mixing in the last 10 years, and it looks like continuing indefinitely. They are clean, quiet (some more than others), reliable, and affordable.

Affordable digital delays have been around now for about eight years, and can be split into two basic

groups; those with knobs, and those without.



This is extracted from the top selling book: LIVE SOUND MIXING, by Duncan Fry. © D.R. Fry 1998. ISBN0 646 11235 X. Retail: \$39.00. Available from book stores and music shops everywhere, also through the Connections Shop, call 1-800-635-514.

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## STAGES FOR TOMORROW \$38

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## SOUND ENGINEER'S POCKET BOOK \$50

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

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STAGE DESIGN & PROPERTIES Michael Holt .....	\$29.00	Titles: I am NOT the DRUMMER, NOTHING you DO will get you	
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STAGE LIGHTING HANDBOOK Francis Reid .....	\$39.00	Sensitive LIGHTING Person* *Oxymoron?	
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## Studios 301 reborn as world class facility



Pic: Fowan Turner

The Australian recording industry got a major boost when Studios 301 opened their new Sydney facility late November. The venerable studios have existed in one form or another since 1926 - but have never had the kind of injection of expertise and cash that 1999 brought.

Moving from the former 301 Castleridge street site, (which will remain the mastering suites for the time being) the new premises are a custom renovated pair of buildings in Mitchell Road Alexandria - half way to Sydney airport from the city.

The new complex had already been planned as the ultimate recording facility for customers of Mirage Studios and its owner, the head of SAE colleges worldwide, Doctor Tom Misner.

Misner stunned the local recording industry when he purchased Studios 301 earlier in 1999, and announced they would be incorporated into the new facility at Alexandria. After some bothersome

delays caused (as you would expect) by local government approvals, the new facility opened on Friday the 19th of November.

What a facility it is. The opening drew at least six hundred people from across the spectrum of the industry.

"The studio is impressive and certainly meets world-class standards", says Dan Daley, a specialist writer for Mix Magazine in the USA.

By any benchmark, the facility is certainly in the top percentile of other studios worldwide, and should attract both talent and improved standards in the regional music recording scene.

"Any other owner would concern himself with how many clients it could pull from overseas, since the Oz market is finite. But Tom regards it as much a tool for his own work as a revenue generator in and of itself. It's good to be the king".

In saying this, Daley refers to the lack of stress that the new

# Studio ROUNDUP

facility imposes on its owner, who was recently lauded by the Australian Financial Review as one of the richest people in Australia - possibly the ninth richest, if you can believe the hype. The success of SAE globally is behind Misner's affluence, all built on the back of a lot of hard work.

It's worth saying that over time Tom Misner has attracted some petty negativity in the Australian recording scene, mainly from people who've perceived that SAE was producing too many graduates for too few jobs. Now it's owner has put back into the industry some eight million dollars - infinitely more than SAE's Australian operations would EVER make - and created a facility that will raise standards.

That this has been done with money earned around the world, teaching people how to record, is remarkable indeed. To me, it's almost purely a passionate investment, and to Misner it's probably the worst financial decision he's ever made. And, he's happy to have made it!

In lineage, Studios 301 is the world's second oldest studio, having commenced operations as Columbia Gramophone Studios

## Come inside

The main entrance is one the corner, in through what was once the front door of a bank. The vault remains, perfect for stashing tapes.

The premises are euro-chic but comfortable. A courtyard reveals a very Aussie BBQ, and provides a staging area for a seventy piece orchestra to enter the main studio.

Studio One is orchestra ready, and measures 335 square metres, with a Neve VR 48/48 Legend console. The room is lofty, 10.2 metres tall at the apex, is naturally lit, gorgeously finished with 100 year old exposed beams, and has been voiced just right, according to insiders.

The sound of this room is an issue which will determine some of its future work. The acoustical design was done mainly by Misner, with help from Acoustic Architecture in London.

Building such a room within an existing warehouse structure involved some staggering statistics. Starting with 92 truck loads of concrete (350 cubic metres), the floor has been built up to an average of 1.2 metres thick, in two layers.

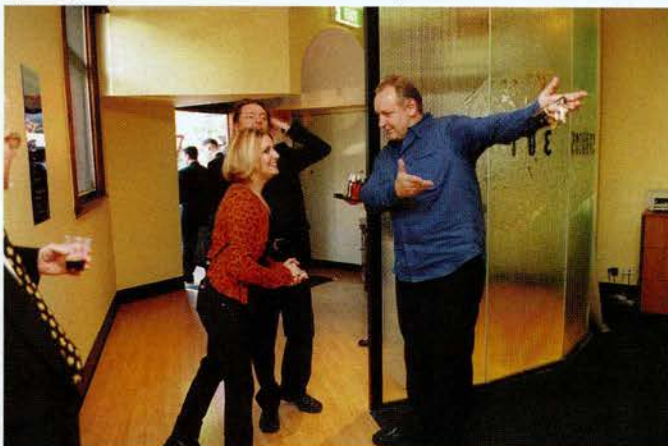
Walls and ceilings are made from a special reinforced modular wall system filled with concrete, floating on rubber pads.

2,300 sheets of high density MDB went into the place, along with 1,300 tubes of silicon sealer and 1,200 square metres of high density, acoustic 100mm Sonex foam.

Staggering construction statistics aside, 301 features no fewer than five studios and a multimedia suite.

*(continued on next page)*

Opening night: Louise Anton is welcomed by Dr Tom Misner



301 Studio Two

## Studio One

Neve VR 48/48 Legend, Flying Faders  
Martin Sound surround  
Yamaha 01V submixer  
Genelec surround monitors  
Yamaha NS 10  
Tannoy 6.5  
ProTools Mix24 with one 888/24 bit converter, 9 Gig HD, 2Gig jazz Drive, 128 Meg Ram, G3/266 with plasma screen.

**Studio: (pictured right)**  
335 sq. meters, 70+ musicians, orchestral facilities, two iso rooms  
Yamaha 76 concert grand piano with MIDI interface

**Tape machines and recorders:**  
Studer A 820 24 track analog (2)  
Studer A 80 1/2 inch  
Otari Radar 24 bit/24 track (2)  
Mitsubishi X880 32 track digital  
Tascam DAT 24 bit or 16 bit  
Marranz pro 3 head cassette deck  
Sony CDP 2700 CD player  
Akai DD 8, MO drives 24bit/96kHz

**Outboard gear:**  
Lexicon 480 reverb  
Lexicon PrimeTime  
AMS RMX 16 Reverb  
AMS S-DMX DDL  
AMS D.M-22 Phase

TC 5000 Reverb with re note  
TC M 3000  
TC 2290 DDL  
TC Intonator  
TC Finalizer  
Pultec EQ2 1A (2)  
Pultec EQ2 1A3  
Urei 1178  
Urei 1176 (2)  
Urei LA 4 (2)  
EMT 156 compressor  
EMT Classic Stereo Plate  
Dynamite compressor  
Focusrite Red 3 Compressor  
Focusrite Red 2 Equalizer  
Ameck 9093 stereo compressor  
Ameck 9093 pre-amp/equaliser  
Avalon 747  
Eventide H 3000 Harmonizer  
Roland SDE 3000 DDL (2)  
A & D Vocal Stressor F760  
Yamaha SEFX 100C  
Yamaha REV 7  
dbx 160x compressor  
Yamaha REV 7  
Drawmer 1960  
SSL Stereo compressor  
Behringer De-esser  
Korg rack tuner  
Sony M7 DDL  
SPL Transient Responder

Avigail Herman, Chris Gordon and Iva Davies



# Studio ROUNDUP

## Studio Two

SSL G+ 64 channel with Ultimotion Moving Faders  
Genelec Surround monitors  
Yamaha 01V submixer  
ProTools Mix24 with one 888/24 bit converter, 9 Gig HD,  
2Gig jazz Drive, 128 Meg Ram, G3/266 with 15" plasma screen.

### Studio: (pictured left)

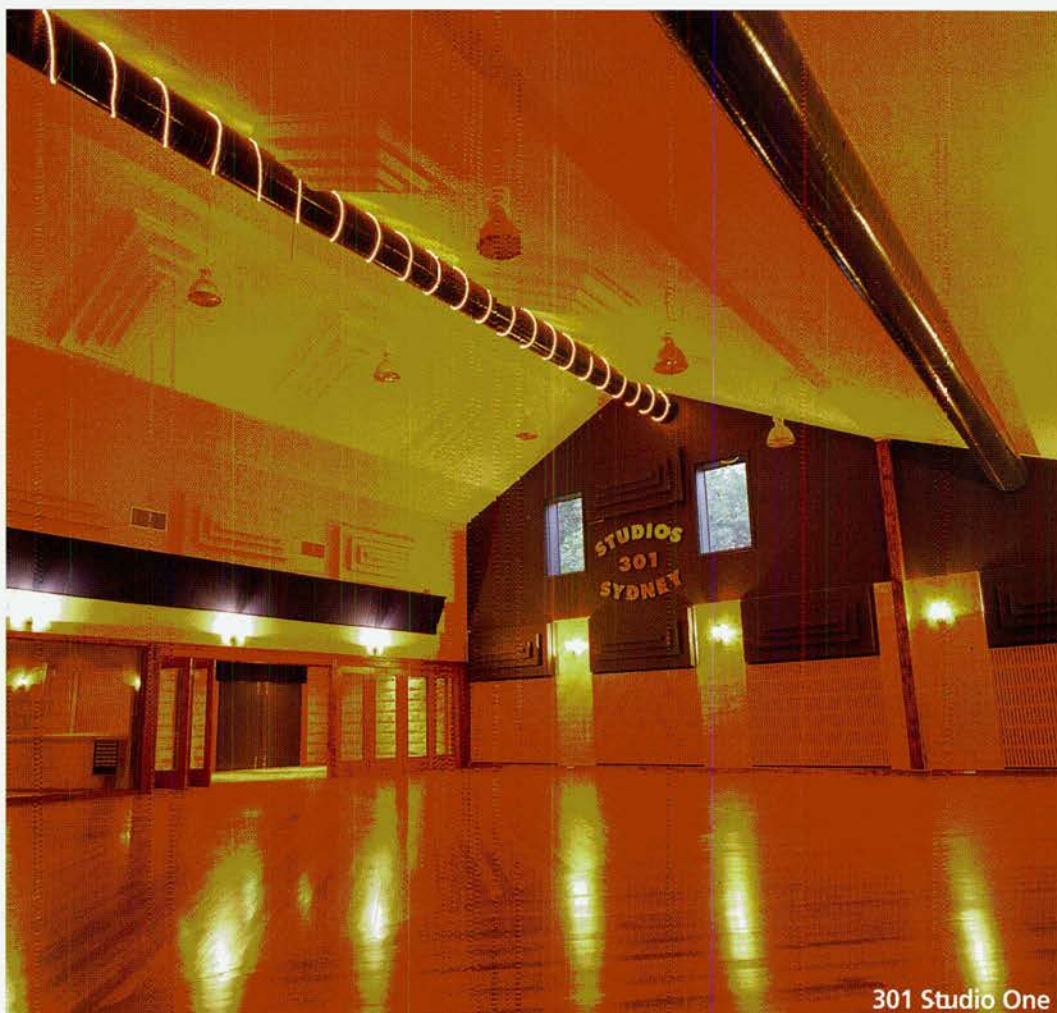
100 sq.meters floor space with 4.4m ceilings three isolation rooms  
Hammond B3 with Leslie cabinets

### Tape machines and recorders:

Studer A 800 Mk III 24 track analog (2)  
Otari Radar 11 24 bit/ 24 track (2)  
Mitsubishi X880 32 track digital  
Tascam DAT 24 bit or 16 bit  
Ampex ATR 102 1/2" analog  
Mitsubishi X880 32 track digital  
Marrantz professional  
3 head cassette deck  
Sony CDP 2700 CD player  
Akai DD 8 with MO drives  
24bit/96kHz

### Outboard gear:

Lexicon 480L reverb  
Lexicon 224 XL reverb  
Lexicon PCM 70  
Neve 2254E compressors (2)  
Fairchild 670 stereo valve limiter  
Focusrite Red 3 compressor  
AMS RMX 16 Reverb  
Amek 9098 EQ/Mic  
Amek 9098 stereo compressor  
BSS DPR 402 compressor  
dbx 120X boom box  
dbx 160 x limiters  
EMT 140 classic stereo plate  
Eventide H 3000 SE  
Eventide Super H 3000 S  
AMS DMX DDL  
Yamaha REV 7  
Avalon 747  
DBX 900 rack (7)  
Manley MU stereo valve limiter  
Manley Leveling amplifier  
Pultec EQPIA3 equalizer (2)  
Pultec EQ Mid equalizer  
Roland SBF 325 flanger  
Roland SDE 3000 DDL  
TC 2290 delay  
TC 5000 with remote



301 Studio One

TC Intonator  
TC Finalizer  
SPL Transient  
Urei 1176 (2)  
Urei 1178  
Valley People Dynamites  
Yamaha SPX 1000  
Urei 565 notch filter  
Sans Amp guitar preamp  
GML Parametric EQ 3200  
Neve classic equalisers (8)

## Additional items

### Video

DoReMi digital hard disc system,  
18 Gig

### Sync

Lynx  
Motorworks

### Other equipment

Dolby SRIA multitrack noise reduction  
Dolby SRIA stereo noise reduction  
HHB CDR burner (2)  
Sony 2700 DAT  
Studer 1/4" taperecorders  
ADAT XT (2)  
Tascam M 38 (2)

Who can we identify here? Second from left, Hortense Plimister with Glen, at far right Ian Macnamara is consoled by Brendan Frost. Others in pic: apologies!



Peter Norman (Sony), Richard Lusk, and Col Joye



# Studio ROUNDUP

The third studio is loaded with an Amek Langley Big 44 console, ProTools 24, and a Studer A800 MkIII 24 track analogue recorder. It hasn't got a studio space, but does have a long list of outboard effects.

Studio Four has a 4.5m x 6.5m studio space, a Mackie Digital 48/24 console, a Mac loaded with Logic Audio, a ProTools 888/24 frame with 16 in and out, and a sound library with over 15,000 sounds and samples available.

Studio Five is similar to four, minus the studio space.

The MultiMedia Suite has a couple of Mac's, and a long list of software.

As we went to press the new facility was getting a work-in, with opening projects for Christine Anu and Adam Brand. Connections spoke with Adam Brand's engineer, David Price about the new facility.

"It's definitely the best in Australia" he said. "The SSL is great, and if you don't want to use their onboard dynamics, there are

heaps of outboard here - like Neve EQ, Pultecs, GML".

Asked about the room sound in Studio Two, he confirmed that in his mind at least it was really good. "It's a large room, with 3 isolation booths. It's definitely world class!"

The new 301 is up and running, and will hopefully attract some off shore recording to Australia. Although it is not part of the SAE business, it certainly serves as a powerful magnet for aspiring students, and that's how it ought to be. Future assistant engineers at 301 will need to be graduates from an SAE course.

**-Julius Grafton**

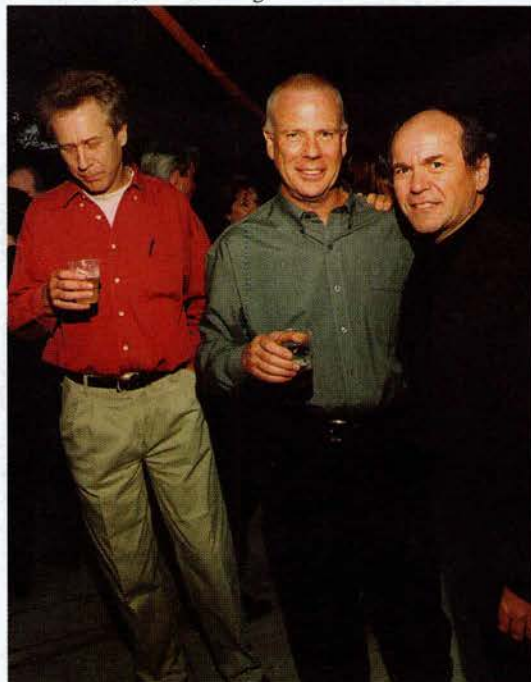
## Microphones (100 units)

Neumann M 49 (X2)  
Neumann M 50 (X3)  
Neumann KM 84 (X2)  
Neumann U 87 A (X6)  
Neumann KM 184 (X8)  
Neumann U 47 fet (X3)  
Neumann U 67 (X4)  
Neumann TLM 170 (X4)  
Neumann KM 56 (X2)  
AKG Tube, AKG Tube VR  
AKG C 414 EB (X1) 0  
AKG D 12, AKG D 112  
AKG C 451 EB (X4)  
AKG C 451 EB (X4)  
Shure Beta 58 (X2)  
Shure SM 57 (X5)  
Audio Tech. 4003  
Bruel&Kiaer 4006 (X2)  
RCA 77 DX (X2)  
Sanken CU 41  
Beyer M 88 (X3)  
Sennheiser MD421 (X5)  
Electrovoice RE 20 (X2)  
Switchcraft PZM (X2)  
Crown PZM (X2)  
Schoepps CMC SU (X 1 1)  
PM1- DC63

*Entertainment sets the international flavour of 301*



*Christo Curtis, Martin Bengé and Glenn Shorrock*



*Dr. Tom Misner relaxes at the opening*



*George Brodbeck, Errol Buddle, Mrs Daley with Warren Daly*



# Studio ROUNDUP



## BASF National Tracking Guide

ARTIST PRODUCER ENGINEER/PROGRAMMER NOTES

### New South Wales

ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
<b>A # Sharp</b> Jeff Cripps Tel: (02) 9153 9988. 24 tk Analogue + 8 tk digital			
David Westmore	Jeff Cripps	Jeff Cripps	CD
Kane	Jeff Cripps	Jeff Cripps	Demo
The. Aust. Cher Show	Jeff Cripps	Jeff Cripps	Demo
Seizure	Jeff Cripps	Jeff Cripps	Pre-Production
John DaSilva	Jeff Cripps	Jeff Cripps	CD
<b>Aphek Studio</b> Greg Dixon Tel: (02) 9876 8170 16 tk 1" analogue 8tk hard disk soundtrack ghost console.			
Sh-Mantra	Band/Greg Dixon	Greg Dixon (E)	Album
Mark Peterson	Mark/Greg	Greg Dixon (E)	Mixing
Christine Woodward	Christ ne/Greg	Greg Dixon (E)	Album
Riz	Riz	Riz (E)	Demo
<b>Crystal Clear Studios</b> Dave Tozer Tel: (02) 9907 4025 24Tk ADAT, AMEK Big 32ch fully automated/recall/dynamics desk.			
Ratial Harmony	Dave Tozer/Band	Dave Tozer (E)	Album
Zetanite	Dave Tozer/Band	Dave Tozer (E)	E.P.
Blue Heelers	Dave Tozer/Band	Dave Tozer (E)	E.P.
Intrinsic	Dave Tozer/Band	Dave Tozer (E)	E.P.
Second Best	Dave Tozer	Dave Tozer (E)	Demo
<b>Damien Gerard</b> Marshall Tel: (02) 9555 1700 2" 24/Pro Tools - Music			
Pancake Day	Russ Pilling	Russ Pilling	E.P.
Silo	Dave Trump	D Trump/Kristian Hill	Album
O.C.D.	Band	Russ Pilling	Album
Elysium	Marshall Cullen	Russ Pilling	E.P.
Jug & Junk Band	J. Cook/M.Conway	Russ Pilling	Album
<b>Entrec Studio</b> Steve Newtor (02) 9858 2686 Ampex Analogue/hard Drive d gital			
AMI Williamson	Steve Newton (E)		Wr ter Demos
<b>Festival Mastering</b> Suzanne Tel: (02) 9395 3070. Professional Mastering facility - seriously cool sounding.			
Turnstyles		William Bowden (E)	Album
Amiel	Josh Abrahams	William Bowden (E)	Single
Various	Anthony Partos	William Bowden (E)	Soft Fruit Sound Track
Atticus	The Band	William Bowden (E)	Album
Groove Terminator	G.T./Noel Burgess	William Bowden (E)	Album & Single
<b>Festival Studio</b> Suzie Tel: (02) 9395 8070. Recording			
Lotel	Band	Matt Lovell	Single
Gadflys	Band	Mark Thomas	Album

ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
Midnight Oil	Daniel Denholm/Band	Daniel Denholm	East Timor Benefit track
Aguagefor	Band/Lovell	Matt Lovell	Single
Paul Mac/Tex Perkins	Paul Mac	Matt Lovell	Single
<b>Hadley Records</b> Eric Scott Tel: (02) 6765 7813 24 Tk analogue MCI Automated Desk			
Lee Kernaghan	Garth Porter	Ted Howard	New Album
Shorty Ranger	Eric Scott	Eric Scott (E)	Tracking Album
Mark Moulynox	Garry Adams	Eric Scott (E)	Gospel Album
Trevor M. Kay	Trevor M. Kay	Eric Scott (E)	Gospel Album
<b>Hindsong Studio</b> David & Lyn Hinds (02) 6582 7070 Digital Project Studio			
Balance	Balance	D & L Hinds	Album Tracks
<b>Hullabaloo</b> Geoff (02) 9906 2933 2x Protools Suites/24 tk analogue			
Disney	-heaton/McGarvey	Glenn Heaton	New Live Show
Heaton/McGarvey	-heaton/McGarvey	Geoff McGarvey	Channel 10 Idents.
Paul Hanna	Paul Hanna	Daniel Bowers	Talking Books
<b>JMF Recording Studio</b> Fran Esther Tel: (02) 9790 4097. 24 Tk. 2"x850,1" Digital, 24 Tk. ADAT			
Back Seat Blues	Band	Ralph Esther (E)	Demo
Robert Fauvotto	Robert Fauvotto	Ralph Esther (E)/R. Fauvotto (P)	Album
Miscreation	Miscreation	Tony Jarrett (E)	Demo
Jonas	Jonas	Guy Saminaden (E)	Album
Cold Turkey	Bill Croft	Guy Saminaden (E)	Album
<b>Lindsay Butler Studios</b> Shaza or Lindsay Tel: (02) 6760 5010 16-40 Tk facilities - digital & analogue			
Lindsay Butler	L. Butler	L. Butler (E)	Album
Brian Letton	L. Butler	L. Butler (E)	Album
Various	L. Butler	L. Butler (E)	Album
Barry Thornton	L. Butler	L. Butler (E)	Album
<b>Megaphon</b> Shane Fahey Tel: (02) 9550 6576 24Tk analogue. Great Tracking Studio for album releases.			
Mark of Cain	Phil McKellar	Phil McKellar (E)	Album
Alien Christ	3and/Shane Fahey	Shane Fahey (E)	Album
The Necks	Band	Tim Whitten	Album
Steve Clark	S. Clark/S. Fahey	Shane Fahey (E)	Album
<b>Nu-Town Studio</b> Greg Hopping Tel: (02) 9516 3306. Recording & Production. Anal & Digital			
Bezema	Band	Mark Worrall (E)	Demos
Madona Barrett	Artist	Greg Hopping (E)	Demos
Dean Anderson	Greg Hopping	Sofie Loizou (PR)	Single
Mark Edwards	Greg Hopping	Michael Lawrence (PR)	Demos
Liani	Greg Hopping	Sofie Loizou (PR)	Demos



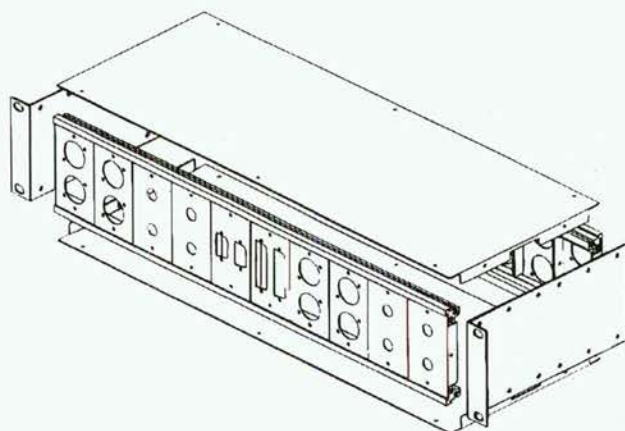
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# Studio ROUNDUP

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**ARTIST                      PRODUCER                      ENGINEER/PROGRAMMER                      NOTES**

<b>Q Recording</b>	Richard Muecke (02) 9212 4851 2" 24 tk SSL G+		
Native Fear	W.B./Band	Warwick Buzacott (E)	Single
Sound of Music	Peter Casey	Christo Curtis (E)	Cast Recording
Cats "Runaway To The Circus"	Peter Casey	Christo Curtis (E)	Cast Recording
Grounded	Band/M.S.	Mik Seage (E)	E.P.
Segression	Band/R.M.	Richard Muecke (E)	Album Mixing
<b>Rockinghorse</b>	Anthony Lycenko Tel: (02) 6688 4005 48 Chan Neve 24 Tk Studer, Protocols		
Mix24 Neve V Series Console.			
Ginger	Brendan Morley B. Morley (E)/Anthony Lycenko (E)		EP Track/Mix
Pulse	Band	Anthony Lycenko (E)	Single
Kailash	Artist	Michael Worthington (E)	Album Track/Mix
Pirol	Christian Pyle/A. Lycenko	Michael Worthington (E)	Album Mastering
<b>Sony Music Studio</b>	Frank/Peta (02) 9383 6461 Recording facility with audio & video production		
The Olympics Band	R. Hirst/R. Crossman	James Cadsky	Album
Leonardo's Bride	James Cadsky	James Cadsky	Album
Storm & Serenity	Band	Louise Taylor	Album
Ulf Kaiser	Jivan Diwano	Ross A'Hern	
Vince Jones	Vince Jones	Ross A'Hern	Album
<b>Soundwarp</b>	Meredith Brooks Tel: (02) 9905 7144. Mastering		
Welter	Elliott Weston	Meredith Brooks	EP
NBA Final Promo	Terry	Meredith Brooks	Opener
On	Scott Chapman	Meredith Brooks	Album
Rising Tide	Matt/Todd	Meredith Brooks	Album
Sensory Deprivation	Chuckles	Meredith Brooks	Compilation
<b>Studios 301 Mastering</b>	Jacqui Espie Tel: (02) 9211 7301. CD Mastering Facility		
Alanis Morissette	Chris Fogel	Don Bartley (E)	Unplugged Album
Cold Chisel	Cold Chisel	Don Bartley (E)	Re-Master
Various	Warren Costello	Don Bartley (E)	The Panel Live Album
Alex Lloyd	Triple J	Don Bartley (E)	EP
Australian Crawl	EMI	Don Bartley (E)	Album
Grinspoon	Jonathan Burnside	Don Bartley (E)	Album
<b>Tiger Recording</b>	Lynda Hanbury (i)@ 9922 4700		
Various	The Rockmelons	David Hemming (E)	Happy Days Album
Mark Duffy	Michael Szumowski	David Hemming (E)	Album
Various	Kere Buchanan/John Bettison	David Hemming (E)	Album
Human Nature	The Rockmelons	David Hemming (E)	Single
<b>Top Cat Recording Studio</b>	Brad Wann Tel: (02) 6628 0843 24 Tk 1" Anal. 24Tk Digital		
mastering.			
Honeyeye	Band	Brad Wann (E)	EP Tracking
Balaam's Ass	Band/ Brad Wann	Brad Wann (E)	EP Mixing
Dream Seeds	Nathan	Brad Wann (E)	EP Tracking
Geraldine Loong	Brad Wann	Brad Wann (E)	Album Mixing
Toke	Toke	Brad Wann (E)	EP Mastering
<b>Troy Horse</b>	Mickey Levis Tel: (02) 9319 1799 Fax: (02) 9698 9494. 24 Tk recording/CD manufacture		
Jigsaw	Peter Kennard	Colin Wright (E)	Album
Jon English	English/Blicka	Blicka (E/PR)	Album
Silencer 7	Band/Blicka	Blicka (E)	EP
Meanderthal	Bull/Band	Colin Wright	EP
J-Eleven	Band/Worral	Mark Worral (E)	EP
<b>Velvet Sound Recording Studios</b>	Dave McCunn Tel: (02) 9267 2915. 64 Ch. Protocols/24 Tk. Analogue		
Tashka	Steve James	Steve James	Album Tracking
Montana	John Haeny	John Haeny (E)	Album Tracking
Welter	Elliott Weston	Tony Wall (E)	EP Tracking
Lior	Lior	Adrian Grigorieff (E)	EP Track & Mix
Frank Bennett	Franco Monteverde	Tony Wall (E)	Album Mixing

## Queensland

<b>Grevillea Studios</b>	Bruce Jacobson Tel: (07) 3262 8422 24tk digital/24tk analogue studios, mastering suite.		
Cathy Francis	Tony Byrne/Cathy Francis	Tony Byrne	Album
Smash Alley	Warren Trout	Matt Bodman	Demos
Mark Hadden	Phil Ross	Phil Ross/Bruce Jacobson	Demos
Brisbane State High Big Band	A. Firth/P. Meneely/B. Jacobson	Bruce Jacobson	Album

**ARTIST                      PRODUCER                      ENGINEER/PROGRAMMER                      NOTES**

Cameron McKenzie	Cameron McKenzie	David Champoin	Jingle Package
<b>Taramalin Sound</b>	Allan Lahey Tel: (07) 3208 9736 16 Track Analogue: Pro Tools.		
Ben Kerswell	Ben	A. Lahey (E)	E.P.
The Reflections	Mark Finigan	A. Lahey (E)	Album
Firetruck	Justin Daley	A. Lahey (E)	E.P.
Trisha Anderson	Trisha	A. Lahey (E)	Album
Ellie Lee	John Lee	A. Lahey (E)	Album
<b>Vandersound Studios</b>	Eric Vandersande Tel: (07) 5546 8100. All Digital & Valve ADAT/XT 02R CDR HDR		
Ian Francis	Eric Vandersande	Andrew Hines (E)	Mix Album
Oz Deli	A Hines/T Masterson	Toby Masterson (E)	EP
Mystery of Sixes	Eric Vandersande	Andrew Hines (E)	Demo
Atoned	A Hines/C O'Connell	Chris O'Connell (E)	EP

## Victoria

<b>Back Beach Recording</b>	Mark Rachelle (i)#0 5988 6948 Class A Analogue Auto mixing 2" recording		
Madison Avenue	Van/Coats	Mark Rachelle (E)	Album
Superheist	Band	D. W. Norton	B Sides
Andrea Lees	John Chester	Hibbard/Rachelle	Demo Single
Parafin	M. Rachelle	Mark Rachelle	Single
Duane Morrison	Duane Morrison	Mark Rachelle	Epic
<b>Cavalier Music</b>	Jeff/Justin Tel: (03) 9437 0444 Multi Track Digital Studio		
Manacide	Band/Justin	Justin	Demo
Seeling	Band/Justin	Justin	Demo
Scout Hall	Band/Justin	Justin	Demo
Tim Gartland	Tim	Justin	Single
Mr Black Predictions	J. Skim/J. Samin	Justin	Soundtrack
<b>Crystal Mastering</b>	Joe Carra Tel: (03) 9326 2318. CD Mastering Facility		
Toe Cutter	Band	John Ruberto	Mastering Album
No Grace	Band	Joe Carra	Remastering Album
Rose Haden	Haden/Wilson	John Ruberto	Mastering Album
Jan Preston	Durr/Preston	John Ruberto	Mastering Album
Within Blood	Band	John Ruberto	Mastering Album
<b>Dex Mastering</b>	Adam Dempsey (03) 9372 2266 Prc CD mastering since 1982		
Dancehall Racketeers	Graham Thomas	Adam Dempsey (E)	Album
Dili All Stars	Paul Stewart	Adam Dempsey (E)	EP
Second Honeymoon	Ben/Band	Ben Hurt (E)	Album
Caama Music	Stan Satour	Adam Dempsey (E)	Double CD Sampler
Playground	Band	Adam Dempsey (E)	EP
<b>Edensound Mastering</b>	Martin/Robbie (03) 9682 9066 Prof. CD Mastering using focusrite 'Blue' mastering suite.		
Donna Fisk & Michael Cristian	D Fisk/M Cristian	Martin Pullan (E)	Album
Kate Cerberano	Doug Brady	Martin Pullan (E)	Live Disc
Deep Purple	Drew Thompson	Martin Pullan (E)	Video soundtrack
Paul Norton	Paul Norton	Martin Pullan (E)	Album
Bucko & Champs	Greg Champion	Robbie Adams (E)	Christmas album
<b>Lo Ricco Sound Studios</b>	Marcello Tel: (03) 9701 6220. 16 Tk. ADAT XT, 32 Tk. Logic Audio		
From The Inside	Band	Marcello Lo Ricco (E)	EP Tracking
All Down	Band/ M Lo Ricco	Marcello Lo Ricco (E/PR)	Demos
Al Taweel	A. Taweel/M. Lo Ricco	Marcello Lo Ricco (E/PR)	Demo
Anthony Costanzo	A. Costanzo/M. Lo Ricco	Marcello Lo Ricco (E/PR)	Demos
Mathew Unwin		Marcello Lo Ricco (E/PR)	Midi Programming
<b>Moose Mastering</b>	Francois Tetaz (03) 9417 7712 Music post production		
Ether	Ryley Fogg		Album
Blimp	Shaun Green		Album
Biftek	Skelty/Crawford		Album
David Paige	Danny Simsic	Jeremy Allom	Demos
Earthcore	Various		Album
<b>Shabtech</b>	Cal Orr Tel: (03) 9532 4865 Analogue, 16 tk/64 tk digital		
The Grapes	The Grapes	Cal Orr (E)	Album Tracks
Memory Man	Memory Man/Cal Orr		Demo
The Mavis's	Shaun Holt	Shaun Holt	Demo
Dan Brody	Dan Brody	Cal Orr	Demo
The Cammarays	Don	Cal Orr	Demo
<b>Studio 52</b>	Paul Higgins Tel: (03) 9417 7707. Studio A: 32 Tk. Analogue/digital 24 Tk. ADAT		

# ENTECH

The countdown is on!

March 5 - 7, Sydney

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ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
Peter Cupples/Katya Hipmo Ave	Peter Cupples	T. Carter/A Meakes	Album
Keiran Hernon	Keiran Hernon	Andrew Meakes	E.P.
Aloop	Aloop	Andrew Meakes	Spoken Word Album
SOCOG Mascots	P Cupples/T Carter	Tim Cummings	Demo
<b>The Ranch</b>	Norman James Tel: (03) 9419 1506	A Meakes/T Cummings	Album
Shenanigans	Gary King	N. James	Album
Jaci Denman	N. James	N. James	Demos
Various New Oz Talents	Aust. Music Marketing	Abroad N. James	CDs
Cobbers	John Armstrong	N. James	Archival Album
<b>Toyland Recording Studio</b>	Adam Calaitzis Tel: (03) 9482 2111	24 Tk Analogue, 128 Tk (24 sep. outs) Logic Audio	
Pseudo Echo	Brian Canham	Adam Calaitzis (E)	Live Album
Ikon	Chris McArthur	Adam Calaitzis (E)	Album
Smash & Grab	Darren Glen	Adam Calaitzis (E)	Vccals Recording
Encaboulous	Band	Adam Calaitzis (E)	5 song EP
Celafain Vain	Adam Calaitzis	Adam Calaitzis (E)	Album
<b>True Form Recording</b>	Neil Gray (03) 9391 0907	24tk digital/analogue + H/disk	
Roger That	Neil Gray	Neil Gray (E)	Pre Production
Surdo	Ross/Band	Ross O'Driscoll	Mix EP
Various	Stussfest 99	Neil Gray	Album
Woodward	Neil/Band	Neil Gray (E)	EP
<b>Wombat Road Recording Studio</b>	Barrie Clissold (03) 5145 4204	16tk ana ogue + 32tk digital CD mastering & duplication	
John Mazur	J. Mazur	B. Clissold (E)	Album mixing
Mick Diamante	M. Diamante	B. Clissold (E)	Album mixing
George Rawlings	B. Clissold	B. Clissold (E)	Demo CD
Terry Flynn	T. Flynn	B. Clissold (E)	
John Ablet	B. Clissold	B. Clissold (E)	Album Tracking & Mastering

## Western Australia

<b>Planet Sound Studio</b>	John Villani Tel: (08) 9382 2211		
Rebecca	Kevin Peck	John Villani	Album
Kim Taggart	Kevin Peck	John Villani	Demos
Frenzee	Boyd Wilson	Boyd Wilson	Album
Lash	John Villani	John Villani	Album
Relish	J.V./Relish	John Villani	EP
<b>Poons Head</b>	Rob/Sam Tel: (08) 9339 4791	32+ track	
Seahorse Radio	Rob Grant/Ronin Charles	Rob Grant (E)	Album
The Mission Blue	Rob Grant/Simon Leach	Rob Grant (E)	Album
Paradox	Alfredo Mallabello	Rob Grant (E)	Album
Wilburforce	Rob Grant & Band	Rob Grant (E)	Album
Subtruck	Rob Grant/Phil Bradley	Rob Grant (E)	E.P.
<b>Revolver Sound Studio</b>	Vic Manfrin Tel: (08) 9272 7505	32 Tk. Automated Analog & Digital	
Greenroom	Band/Ben Glatze	Ben Glatzer	Tracking

ARTIST	PRODUCER	ENGINEER/PROGRAMMER	NOTES
Sleepy Jackson	Band/Ben Glatzer	Ben Glatzer	Tracking
Wax Tadpole	Band/Ben Glatzer	Ben Glatzer	Mixing
Novak N' Goode	Artists	Ben Glatzer	Live Rec. Mix
Silent Type	Band	Vic Manfrin	Demos
<b>Satellite Recording Studio</b>	Darren Halifax Tel: (08) 9470 4003	Protools 64Tk x 24 bit.	
The Vibrolators	Band	Darren Halifax	Live Album
The Joys of Women	Ellie Kounieher	Darren Halifax	Album
Mike Burns	Andrew Neal	Andrew Neal	Album
The Dingo's Breakfast	Eric Kowoski	Eric Kowoski	Album
Souvina	James Hewgill	James Hewgill	Demo

## South Australia

<b>Disk-Edits</b>	Catherine Linke (08) 8340 1377	Audio Pre-Mastering & Post Production	
The Mollys	Bard/Big Star Records	Neville Clarke	Mastering CD
Myarctic Surrender	Band	Neville Clarke	Mastering CD
Little Black Dress	Band/The Crossing Record Co.	Neville Clarke	Mastering CD
Kurb	Band	Neville Clarke	Mastering CD
DJ HMC	Artist	Neville Clarke	Mastering CD
The Vermen	Band	Neville Clarke	Mastering CD

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**Connections**

**PRO** **Outlets**

**Pro Outlets Directory**  
**December 1999/January 2000**

# What now for the pro outlet?

I've got to make a confession.

When I sit (prop) at a bar at a far away tradeshow, I'm often in the company of people who control whole brands. They own the firm, or they are senior managers. Sadly, 99 percent of them are males too, but that's another story.

Anyway, the topic is now almost always Distribution. And the metric is very ugly indeed.

Most (maybe almost all) brand managers HATE retailers. It isn't raw hate of the kind you see in politics or some failed spousal unions. Rather, it's a hope or a dream that the new world order of the internet will take away the retailer and deliver the customer direct to the factory. For more profit.

Some brands never really bothered with 'retailers', or in our case, pro outlets. One of these is Fairlight, whose direct global marketing approach was sneered at until it started to yield serious penetration. Their product is also specialised to a degree that most of the outlets in this directory wouldn't know how to sell it.

But when some pretty common names in our business start rubbing their hands together and counting un-realised future profits, you know insurrection is in the air.

The really good news is that it generally will happen in our region first. This is because the thick condensed markets of the US and the EU get first. The problem for the manufacturers is that they will then boilerplate the US or EU distribution model onto Australia, New Zealand and to a lesser degree

south east Asia. And it will not work.

Already right now a lot of software and small products are purchased off shore and Fe-Ex'ed into your workplace. But the long distances and the lack of a supersonic Fed-Ex freighter anytime in the next quarter century mean that a lot of organisations still need to buy products off the shelf.

The reason that maybe half the firms listed in this directory will survive another couple of years is that that half have forward thinking management. These are some the things pro outlet management needs to do to survive:

1. Adopt contemporary business practice. Study successful businesses, see what they do, and imitate them.
2. Understand that marketing means more than just buying an advertisement in Connections. (And try to get your listing into these pages!)
3. Be flexible with good staff, understand that clever people are often now part time contractors- not indentured career clock watchers.
4. Go to the major tradeshow to LEARN, not to prop up a bar (like I do).
5. Read smart magazines from the rest of the world (and this one!)
6. Never, ever accept the status quo. Never say 'it isn't broke, so I won't fix it! (Also remember the customer REALLY is king - or queen!)
7. Remember first impressions count, keep your store clean, make your advertisements and web page look great, keep a nice tone on the phone.

If you still go broke doing all these things, call me and I'll issue a new set of guidelines!

**-Julius Grafton, editor.**

**A.C.T.**

**Pro-Audio**

Fax: (02) 6280 8177

Email: [nk@enternet.com.au](mailto:nk@enternet.com.au)

Key Staff: N. Korte: Sales Manager, S.

Nano: Production Manager; B. Frazer:

Hire Manager.

Main Brands: JBL, Shure, Sennheiser.

**A.C.T.**

**Audio Visual**

**N.S.W.**

**Pro Audio**

## Better Music

29-31 Colbee Court

PHILLIP ACT 2608

Tel: (02) 6282 3199

Fax: (02) 6282 5436

Key Staff: Gary Woodbridge: Audio,

Dave Bowron: Lighting

**A.C.T.**

**Lighting**

## Better Music

29-31 Colbee Court

PHILLIP ACT 2608

Tel: (02) 6282 3199

Fax: (02) 6282 5436

Key Staff: Gary Woodbridge: Audio,

Dave Bowron: Lighting



## Lightsounds Canberra

Unit 1, 41/45 Tennant Street

FYSHWICK ACT 2609

Tel: (02) 6239 1455

Fax: (02) 6239 2723

Web Site Address:

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

Main Brands: FAL Lighting, American

DJ + Cerwin-Vega, ESP Technology.

## Better Music

29-31 Colbee Court

PHILLIP ACT 2608

Tel: (02) 6282 3199

Fax: (02) 6282 5436

Key Staff: Gary Woodbridge: Audio,

Dave Bowron: Lighting

## Electroboard

10 Thesiger Court

DEAKIN ACT 2600

Tel: (02) 6285 1534

Fax: (02) 6285 1838

Main Brands: Infocus-Multimedia

Projectors, Smart-Interactive

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Whiteboards.

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## Sound Advice Australia Pty Ltd

4/4 Wiluna Street

FYSHWICK ACT 2609

Phone: (02) 6280 8777

**A.C.T. N.S.W.**

**Avsound Productions Pty Ltd**

15/28 Roseberry Street  
BALGOWLAH NSW 2093  
Phone: (02) 9949 9000  
Email: [info@avsound.com.au](mailto:info@avsound.com.au)  
Web Site Address:  
[www.avsound.com.au](http://www.avsound.com.au)  
Key Staff: Matthew Kline: Managing Director  
Main Brands: Electro Voice, Denon & Technics, Pioneer, Martin Audio, Clay Paky & Martin Lighting

**Black Express Light & Sound**

275 Homer Street  
EARLWOOD NSW 2206  
Phone: (02) 9559 4363  
Fax: (02) 9558 4923  
Email: [candrews@blackexpress.com.au](mailto:candrews@blackexpress.com.au)  
Web Site Address:  
[www.blackexpress.com.au](http://www.blackexpress.com.au)  
Key Staff: Con Andrews: Managing Director, Angelo Andrews: Sales Manager  
Main Brands: JBL, Clay Paky, Martin.

**Byron Music**

93 Jonson Street  
BYRON BAY NSW 2481  
Phone: (02) 6685 7333  
Fax: (02) 6685 7552  
Key Staff: Peter Woolnough, Craig Ptter, Sumitra Birch

**CANNON SOUND SYSTEMS**

Unit 11A/3-9 Kenneth Road  
MANLY VALE NSW 2093  
Phone: (02) 9948 4440  
Fax: (02) 9948 9336  
Email: [sales@cannonsound.com.au](mailto:sales@cannonsound.com.au)  
Web Site Address:  
[www.cannonsound.com.au](http://www.cannonsound.com.au)  
Key Staff: Neil Smith: Sales manager, Daniel Trevor: General Manager  
Main Brands: P. Audio, Cannon Cabinets.  
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**CENTRAL STATION RECORDS**

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DARLINGHURST NSW 2010  
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Fax: (02) 9331 4446  
Email: [hardwax@centralstationrec.com](mailto:hardwax@centralstationrec.com)  
Web Site Address:  
[www.centralstationrec.com](http://www.centralstationrec.com)  
Key Staff: Con Nomikos, Kavi R. Central Station Record's Hardwax Equipment Section: Specialising in DJ set ups, both in nightclub and home environments. With helpful customer service, wide range of products (including DJ accessories such as record boxes, turntable roadcases + more) and music and the best prices in town. Hardwax won't let you down! \*Roland Groove Studio available for use in Hardwax. Stocking brands such as: Vestax, Rane, Roland, Pioneer, Senheiser, Denon, Numark, Sony, Ortofon, Shure, Stanton, JBL, Citronic, Phonic & much more!

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Fax: (02) 6361 7875  
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Key Staff: Allan Brown: Proprietor  
Main Brands: JBL, Shure, Martin

**Coda Audio Services Pty Ltd**

9-11 Layton Street  
POTTS POINT NSW 2011  
Tel: (02) 9557 2111  
Fax: (02) 9557 2366  
Email: [codamail@coda-audio.com.au](mailto:codamail@coda-audio.com.au)  
Web Site Address:  
[www.coda-audio.com.au](http://www.coda-audio.com.au)  
Key Staff: Leigh Williams: Administrator, Philip Murphy, Michael Wilkie

**Custom Audio Installations & Lighting**

150 Maitland Road  
MAYFIELD NSW 2304  
Tel: (02) 4967 7733  
Fax: (02) 4967 7736  
Email: [cusaudio@idl.com.au](mailto:cusaudio@idl.com.au)  
Key Staff: Colin Rathapfel: General Manager, Steve Masan: Hire Manager, Scott Morris: Sales Manager  
Main Brands: EV, DAS, JBL

**Custom Music Pty Ltd**

107A Banna Avenue  
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Tel: (02) 6962 2843  
Fax: (02) 6962 2843  
Key Staff: Anthony Biondo: Store Manager, Nathan Kschenka: Salesman  
Main Brands: Peavey, Behringer, AKG

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44 Baylis Street  
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Tel: (02) 6921 5855  
Fax: (02) 6921 5855  
Key Staff: Craig Williams: Store Manager, Sean Daniell: Salesman  
Main Brands: Peavey, Behringer, AKG

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Tel: (02) 6959 2239  
Fax: (02) 6959 2639  
Key Staff: Chris Kschenka: Store Manager, Neville Kschenka: General Manager  
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Fax: (02) 9310 2685  
Email: [dmcflight@one.net.au](mailto:dmcflight@one.net.au)  
Web Site Address:  
[www.dmclightingandsound.com.au](http://www.dmclightingandsound.com.au)  
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Fax: (02) 4324 5878  
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Key Staff: Neale Mace: Manager, Carolyn Mace: Account/Purchasing, Glenn Stewart: Hire/Production  
Main Brands: JBL, EV, QSC

**Jazzright Production Services**

30 Romani Parade  
MATRAVILLE NSW 2036  
Phone: (02) 9311 1197  
Fax: (02) 9661 7110  
Email: [mailjazz@jazzright.com.au](mailto:mailjazz@jazzright.com.au)  
Web Site Address:  
[www.jazzright.com.au](http://www.jazzright.com.au)  
Key Staff: John Perez: Director, Keith Clarkson: Operations Manager  
Main Brands: Acoustic technologies, Martin Audio, Peavey

**Jonathan Page Audio Workshops**

5 Myrtle Street  
CROWS NEST NSW 2065  
Phone: (02) 9957 5309  
Fax: (02) 9957 3213  
Email: [jonpage@ozemail.com.au](mailto:jonpage@ozemail.com.au)  
Key Staff: Jonathan Page: Manager

Main Brands: Quantegy Med a, Tascam  
Pro repairs

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Key Staff: Matthew Mcleod: Sales  
Manager/Hire  
Main Brands: FAL Lighting, American  
DJ + Cerwin-Vega, ESP technology

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112 Pacific Highway  
GOSFORD NSW 2259  
Tel: (02) 4353 4908  
Fax: (02) 4353 4918  
Web Site Address: [www.lightsounds.com](http://www.lightsounds.com)  
Main Brands: FAL Lighting, American  
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#### Lightsounds Leichhardt

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LEWISHAM NSW 2049  
Tel: (02) 9560 0120  
Fax: (02) 9560 0022  
Email: [sales@lightsounds.com](mailto:sales@lightsounds.com)  
Web Site Address: [www.lightsounds.com](http://www.lightsounds.com)  
Main Brands: FAL Lighting, American  
DJ + Cerwin-Vega, ESP technology

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LIVERPOOL NSW 2170  
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Fax: (02) 9829 3615  
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Main Brands: FAL Lighting, American  
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170c Riley Street  
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Tel: (02) 9357 1771  
Fax: (02) 9331 1515  
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Phone: (02) 9635 0302  
Fax: (02) 9638 0331  
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Web Site Address:  
[www.lotsofwatts.citysearch.com.au](http://www.lotsofwatts.citysearch.com.au)  
Key Staff: Wayne D'Chong: Audio  
Sales, Garry Morley: Lighting Sales,  
Carey Leghorn: Installation Manager  
Main Brands: Shure, EV, Clay Paky.

#### Magpie Music

109 Carp Street  
BEGA NSW 2550  
Phone: +61 2 6492 3533

Fax: +61 2 6492 3780  
Email: [magmusic@acr.net.au](mailto:magmusic@acr.net.au)  
Key Staff: Tony Heid: Sales Manager/  
Director, Darren Russell: Sales Rep/  
High Tech. Garry Williams  
Main Brands: Bose, JBL, Peavey, Mackie,  
Shure, CAD, E.V., Jands, Selecon.



#### Night-Shift Entertainment Services

164 Liverpool Road  
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Phone: (02) 9744 7777  
Fax: (02) 9744 7798  
Email: [nfo@nightshift.com.au](mailto:nfo@nightshift.com.au)  
Web Site Address: [www.nightshift.com.au](http://www.nightshift.com.au)  
Key Staff: Steven Tanou: Managing  
Director, Steven Dally: Hire/Operations  
Manager, Tina Medaglia: Marketing  
Executive  
Main Brands: EV, Audiotelex, Mackie

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Tel: (02) 4627 8000  
Fax: (02) 4627 7555  
Email: [raystandenaudio@bigpond.com](mailto:raystandenaudio@bigpond.com)  
Web Site Address:  
[www.users.bigpond.com/  
raystandenaudio/](http://www.users.bigpond.com/raystandenaudio/)  
Key Staff: Ray Standen: Director, Jill  
Standen: Office Manager, Paul & Peter:  
Technicians  
Main Brands: Electro-Voice, TOA-AGK,  
Peavey

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265 Sussex Street  
SYDNEY NSW 2000  
Phone: (02) 9263 2077  
Fax: (02) 9283 337  
Email: [infor@sounddevices.com.au](mailto:infor@sounddevices.com.au)  
Web Site Address:  
[www.sounddevices.com.au](http://www.sounddevices.com.au)  
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Lewis Mallia: Director, Cameron  
Howie: Sales Manager  
Main Brands: Digidesign, Apogee  
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Email: [gear@studiofx.com.au](mailto:gear@studiofx.com.au)  
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Key Staff: David Carr: Manager, James  
Bulley  
Main Brands: Fender, Kawai

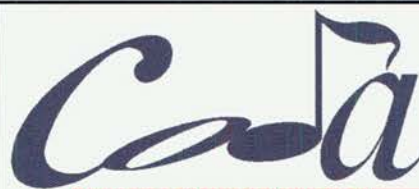
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Fax: (02) 9799 7219  
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Key Staff: Michael Orland: CEO,  
Margaret Orland: Accounts



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Web Site Address:  
[www.themusicbox.com.au](http://www.themusicbox.com.au)  
Key Staff: Dave Dempsey: Sales Man-  
ager, Greg Leto: Service Manager, Vic  
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Main Brands: E.V., JBL, RCF, Martin,  
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Web Site Address: <http://www.turramusic.com.au>  
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BALGOWLAH NSW 2095  
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Email: [info@avsound.com.au](mailto:info@avsound.com.au)  
Web Site Address: [www.avsound.com.au](http://www.avsound.com.au)  
Key Staff: Matthew Kline: Managing Director  
Main Brands: Electro Voice, Denon & Technics, Pioneer, Martin Audio, Clay Paky & Martin Lighting

## Black Express Light & Sound

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Web Site Address: [www.blackexpress.com.au](http://www.blackexpress.com.au)  
Key Staff: Con Andrews: Managing Director, Angelo Andrew: Sales Manager  
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MENAI CENTRAL NSW 2234  
Phone: (02) 9541 4888  
Fax: (02) 9541 4199  
Email: [info@blm.com.au](mailto:info@blm.com.au)  
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Web address: [www.cls.com.au](http://www.cls.com.au)  
Key Staff: Trevor Lloyd: Director, Matt Hanson: Hire and Production Manager

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Fax: (02) 4967 7736  
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Key Staff: Colin Rathapfel: General Manager, Steve Masan: Hire Manager, Scott Morris: Sales Manager  
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Key Staff: Bruce Thompson: Store Manager, Pete Glover: Salesman  
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Key Staff: Jonathan Giddor: CEO, Paul Owen, Kent Dayhew  
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Web Site Address: [www.lotsofwatts.citysearch.com.au](http://www.lotsofwatts.citysearch.com.au)  
Key Staff: Wayne D'Chong: Audio Sales, Garry Morley: Lighting Sales, Carey Leghorn: Installation Manager  
Main Brands: Shure, EV, Clay Paky.

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Julie Vanry: Sales Consultant, Chris  
Etreich: Consultant.  
Main Brands: All Brands

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109 Carp Street  
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Phone: +61 2 6492 3533  
Fax: +61 2 6492 3780  
Email: [magmusic@acr.net.au](mailto:magmusic@acr.net.au)  
Key Staff: Tony Haid: Sales Manager/  
Director, Darren Russell: Sales Rep/  
High Tech.  
Main Brands: Bose, JBL, Peavey,  
mackei, Shure, Cad, E.V., Jands  
Selecon.



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Fax: (02) 9744 7798  
Email: [info@nightshift.com.au](mailto:info@nightshift.com.au)  
Web Site Address: [www.nightshift.com.au](http://www.nightshift.com.au)  
Key Staff: Steven Tanou: Managing  
Director, Steven Dally: Hire/Operations  
Manager, Tina Medaglia: Marketing  
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Main Brands: Martin, Clay Paky, Geni



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Fax: (02) 9938 4504  
Email: [info@oraclelaser.com.au](mailto:info@oraclelaser.com.au)  
Web Site Address: [www.oraclelaser.com.au](http://www.oraclelaser.com.au)  
Key Staff: Paul Mezlin: Director, Jon  
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Main Brands: Oracle Laser Systems, T2  
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Key Staff: Francis Taylor: Chris Roarty,  
David Kentish Audio-visual

## N.S.W.

## Audio Visual



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FRENCHS FOREST NSW 2036  
Tel: (02) 9438 4900  
Fax: (02) 9453 4911  
Email: [info@allav.com.au](mailto:info@allav.com.au)  
Web Site Address: [www.allav.com.au](http://www.allav.com.au)  
Key Staff: Anthony Jeffcoat: Director,  
Technical/Research, Jason Lewis:  
Sales Manager.  
Main Brands: NEC, Hitachi.

## Black Express Light & Sound

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Fax: (02) 9558 4923  
Email: [candrews@blackexpress.com.au](mailto:candrews@blackexpress.com.au)  
Web Site Address: [www.blackexpress.com.au](http://www.blackexpress.com.au)  
Key Staff: Con Andrews: Managing  
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Main Brands: JBL, Clay Paky, Martin.

## Custom Audio Installations & Lighting

150 Maitland Road  
MAYFIELD NSW 2304  
Tel: (02) 4967 7733  
Fax: (02) 4967 7736  
Email: [cusaudio@idl.com.au](mailto:cusaudio@idl.com.au)  
Key Staff: Colin Rathapfel: General  
Manager, Steve Masan: Hire Manager,  
Scott Morris: Sales Manager  
Main Brands: EV, DAS, JEL

## Electroboard

20 Atchison Street  
ST LEONARDS NSW 2265  
Tel: (02) 9433 4444  
Fax: (02) 9439 4900  
Main Brands: Infocus - Multimedia  
Projectors, Smart - Interactive  
Whiteboards, Plus - Electronic  
Whiteboards

## Image Design Technology Pty Ltd

Unit 2, 33-35 Alley Street  
CHATSWOOD NSW 2067  
Tel: (02) 9417 4924  
Fax: (02) 9417 8945  
Email: [info@idt.com.au](mailto:info@idt.com.au)  
Web Site Address: [www.idt.com.au](http://www.idt.com.au)  
Key Staff: Gerry Wilkins: Managing  
Director, Michael Hearder: Sales  
Executive, Nic Beavis: Technical  
Director  
Main Brands: Pioneer, Toshiba, Clarity  
Visual Systems.

## Intergrated Audio Visual

65 Dickson Avenue  
ARTARMON NSW 2064  
Tel: (02) 9966 5944  
Fax: (02) 9460 8844  
Email: [mike@iaav.com.au](mailto:mike@iaav.com.au)  
Web Site Address: [www.iaav.com.au](http://www.iaav.com.au)  
Key Staff: Mike Neale: Manager

## Sound And Visual Innovators (SAVI)

5/108 Warrane Road  
WILLOUGHBY NSW 2068  
Phone: (02) 9417 4388  
Fax: (02) 9417 2118  
Email: [savi@zip.com.au](mailto:savi@zip.com.au)  
Key Staff: Edgar Kramer: Director.

## N.S.W.

## Other

## Custom Audio Installations & Lighting

150 Maitland Road  
MAYFIELD NSW 2304  
Tel: (02) 4967 7733  
Fax: (02) 4967 7736  
Email: [cusaudio@idl.com.au](mailto:cusaudio@idl.com.au)  
Key Staff: Colin Rathapfel: General  
Manager, Steve Masan: Hire Manager,  
Scott Morris: Sales Manager  
Main Brands: EV, DAS, JBL

## Image FX

8/18 Leighton Place  
HORNSBY NSW 2077  
Phone: (02) 9477 6435  
Fax: (02) 9477 7095  
Email: [ifx@compuserve.com](mailto:ifx@compuserve.com)  
Key Staff: David Roberts: Managing  
Director  
Main Brands: IFX

## Scion Audio Hire

150 Maitland Road  
MAYFIELD NSW 2304  
Tel: (02) 4960 0199

Fax: (02) 4967 7736  
Email: [cusaudio@idl.com.au](mailto:cusaudio@idl.com.au)  
Key Staff: Steve Mason: Hire Manager,  
Anthony Tillman: Assistant Manager,  
Evan Hoetchies: AV Hire.

#### Stage & Studio Pty Ltd

26 Hotham Parade  
ARTARMON NSW 2064  
Phone: (02) 9439 8188  
Fax: (02) 9439 7881  
Email: [stageandstudio.com.au](mailto:stageandstudio.com.au)  
Key Staff: Francis Taylor, Chris Roarty,  
David Kentish  
Main Brands: Stage Machinery,  
Curtains Cycloramas, Portable Stages

#### Ray Standen Audio Pty Ltd

PO Box 99  
MACARTHUR SQUARE NSW 2560  
Phone: (02) 4627 8000  
Fax: (02) 4627 7555  
Email: [raystandenaudio@bigpond.com](mailto:raystandenaudio@bigpond.com)  
Web Site: [www.users.bigpond.com/raystandenaudio/](http://www.users.bigpond.com/raystandenaudio/)  
Key Staff: Ray Standen: Director, Jill  
Standen: Office Manager, Paul & Peter  
Standen: Technicians.  
Main Brands: Electro-voice, Toa, Peavey

**N.T.**

**Pro Audio**

#### Desert Sounds

Gregory Terrace  
ALICE SPINGS NT 0870  
Tel: (08) 8953 3333  
Fax: (08) 8953 4025  
Email: [info@desertsounds.com.au](mailto:info@desertsounds.com.au)  
Key Staff: Matthew Guggisberg:  
Manager  
Main Brands: Electrovoice, Peavey,  
Shure



#### TOP END SOUNDS PTY LTD

24 Stuart Highway  
STUART PARK, DARWIN NT 0820  
Phone: (08) 8981 7744  
Fax: (08) 8981 7525  
Email: [tes@topendsounds.com.au](mailto:tes@topendsounds.com.au)  
Web Site Address:  
[www.topendsounds.com.au](http://www.topendsounds.com.au)  
Key Staff: Colin West: Director,  
Kerrie Alterator: Administration/  
Sales, David Houghton: Production,  
Jeremy Wright: Hires/AV  
Conferencing  
Main Brands: Shure, JBL, EV, Bose,  
Martin Audio  
Professional Audio, Lighting,  
teleconferencing and Video sales and  
installations. Our wide range of  
Professional Products includes Martin  
Professional Lighting, GENI, Selecon,  
Jands, LSC and much more. We will  
match any genuine price, our  
professional and qualified staff are  
available to give you professional  
advice on product to suit any  
application.

**N.T.**

**Lighting**



#### TOP END SOUNDS PTY LTD

24 Stuart Highway  
STUART PARK, DARWIN NT 0820  
Phone: (08) 8981 7744  
Fax: (08) 8981 7525  
Email: [tes@topendsounds.com.au](mailto:tes@topendsounds.com.au)  
Web Site Address:  
[www.topendsounds.com.au](http://www.topendsounds.com.au)  
Key Staff: Colin West: Director,  
Kerrie Alterator: Administration/  
Sales, David Houghton: Production,  
Jeremy Wright: Hires/AV  
Conferencing  
Main Brands: Shure, JBL, EV, Bose,  
Martin Audio  
Professional Audio, Lighting,  
teleconferencing and Video sales and  
installations. Our wide range of  
Professional Products includes Martin  
Professional Lighting, GENI, Selecon,  
Jands, LSC and much more. We will  
match any genuine price, our pro-  
fessional and qualified staff are  
available to give you professional  
advice on product to suit any  
application.



#### TOP END SOUNDS PTY LTD

24 Stuart Highway  
STUART PARK, DARWIN NT 0820  
Phone: (08) 8981 7744  
Fax: (08) 8981 7525  
Email: [tes@topendsounds.com.au](mailto:tes@topendsounds.com.au)  
Web Site Address:  
[www.topendsounds.com.au](http://www.topendsounds.com.au)  
Key Staff: Colin West: Director,  
Kerrie Alterator: Administration/  
Sales, David Houghton: Production,  
Jeremy Wright: Hires/AV  
Conferencing  
Main Brands: Shure, JBL, EV, Bose,  
Martin Audio  
Professional Audio, Lighting,  
teleconferencing and Video sales  
and installations. Our wide range  
of Professional Products includes  
Martin Professional Lighting, GENI,  
Selecon, Jands, LSC and much  
more. We will match any genuine  
price, Our professional and  
qualified staff are available to give  
you professional advice on product  
to suit any application.

**QLD.**

**Pro Audio**

**N.T.**

**Audio Visual**

#### Electroboard

Suite 2/6 Lindsay Street  
DARWIN NT 0800  
Tel: (08) 8941 8338  
Fax: (08) 8981 8660  
Main Brands: Infocus – Multimedia  
Projectors, Smart – Interactive  
Whiteboards, Plus – Electronic  
Whiteboards

#### Audio & Visual Innovations

41 Brookes Street,  
BOWEN HILLS QLD 4001  
Phone: (07) 3252 4022  
Fax: (07) 3257 4950  
Key Staff: Cameron Gunning: Sales  
Manager, Steve Grimes: Operations  
Manager  
Main Brands: Turbosound, Mackie,  
Samson Wireless

#### Audio Sales & Recording

66 Abbotsford Road  
BOWEN HILLS QLD 4006  
Phone: (07) 3852 2646  
Fax: (07) 3854 1608  
Email: [ijs@ats.com.au](mailto:ijs@ats.com.au)  
Web Site Address: [www.ijts.com.au](http://www.ijts.com.au)  
Key Staff: Ivan Simon: Director  
Main Brands: R.C.F., Lexicon/Drawmer,  
EAW/Crest

### Brisbane Sound

36 Agnes Street  
FORTITUDE VALLEY QLD 4006  
Phone: (07) 3257 1040 Sales  
Phone: (07) 3252 4935 Hire  
Fax: (07) 3252 7874  
Email: [sales@brisound.com.au](mailto:sales@brisound.com.au)  
Web Site Address:  
[www.brisound.com.au](http://www.brisound.com.au)  
Key Staff: Alf Velm: Hire Manager, Nigel  
Line: Managing Director, Michelle  
Barralet: Sales Representative  
Main Brands: Yamaha, Sony, Shure and  
many more.

### Camerons Music Centre

2 Anzac Avenue  
REDCLIFFE QLD 4020  
Phone: (07) 3889 3422  
Fax: (07) 3889 3404  
Email: [cameronsmusic@flatrate.net.au](mailto:cameronsmusic@flatrate.net.au)  
Key Staff: Anthony Cameron: Owner,  
Scott (The Surf God) Buttman  
Main Brands: Australian Monitor,  
Samson, Shure.

### Gold Coast Music Pty Ltd

53 Nerang Street  
SOUTHPORT QLD 4215  
Phone: (07) 5532 7100  
Fax: (02) 5591 1099  
Key Staff: Alan Driscoll: Director, Colin  
Hill: P.A. Specialist  
Main Brands: Yamaha, Sennheiser,  
Peavey

### Lightsounds Brisbane Southside

14A Milsom Street  
COOPAROO QLD 4151  
Tel: (07) 3847 1744  
Fax: (07) 3847 1956  
Email: [ease@technologist.com](mailto:ease@technologist.com)  
Web Site Address:  
[www.lightsounds.com](http://www.lightsounds.com)  
Main Brands: FAL lighting, American  
DJ + Cerwin-Vega, ESP TechnologyS

### Luminous Energy

22 Maud Street  
NEWSTEAD QLD 4006  
Phone: (07) 3252 1500  
Fax: (07) 3252 8910  
Key Staff: Peter McKenzie: Manager  
Sales, Craig Fussell: Sales/Programming  
Main Brands: JBL, Clay Paky, Martin

### Mick James Electronics

7-9/11 Surfers Avenue  
MERMAID BEACH QLD 4216  
Tel: (07) 5572 0133  
Fax: (07) 5572 4478  
Email: [mje@ion.com.au](mailto:mje@ion.com.au)  
Key Staff: Mick James: Managing  
Director, Pascal Bonnet: Sales  
Manager, Garth Ives: Service Manager  
Main Brands: Acoustic Technologies,  
JBL, Shure

### PARAMOUNT AUDIO SYSTEMS & COVERS

34 Torelliana Drive  
STRATHPINE QLD 4500  
Phone: (07) 3205 7151  
Fax: (07) 3205 7151  
Email: [gregf@powerup.com.au](mailto:gregf@powerup.com.au)  
Web Site Address:  
[www.powerup.com.au/~gregf](http://www.powerup.com.au/~gregf)  
Key Staff: Greg French: Owner/  
Director  
Main Brands: Australian Monitor,  
RCF, Paramount Audio Canvas Covers  
Production hire sales and  
installations. We deal in most  
brands of pro audio equipment  
including Turbosound, Auciotelex,  
Sabine, Shure, SKB, Behringer,  
Alesis and many more. We also  
manufacture canvas speaker and  
amp covers, supplying most pro  
audio companies and music shops  
in Queensland and shipping to  
others throughout Australia.

### Show Biz Sound

66 Kitchener Street  
SHERWOOD QLD 4075  
Phone: (07) 3379 7900  
Fax: (07) 3379 7900  
Key Staff: Richard Autenzio: Owner/  
Production Manager.

### The Guitar Garage

168 Barry Parade  
FORTITUDE VALLEY QLD 4005  
Tel: (07) 3252 4299  
Fax: (07) 3252 1992  
Email: [drumworz@futureweb.com.au](mailto:drumworz@futureweb.com.au)  
Key Staff: Mike Braxton: Manager  
Main Brands: Peak Audio, Yamaha,  
Behringer



### The Production Shop

82 Berwick Street  
FORTITUDE VALLEY QLD 4005  
Phone: (07) 3216 1340  
Fax: (07) 3216 1376  
Email: [sales@productionshop.com.au](mailto:sales@productionshop.com.au)  
Web Site Address:  
[www.productionshop.com.au](http://www.productionshop.com.au)  
Key Staff: Graeme Hicks: Managing  
Director, Tim Kennard: Lighting Sales  
Manager.

### Transtec (Sound, Lighting & DJ's)

5/25 Upton Street  
BUNDALL QLD 4217

Phone: (07) 5570 3345  
Fax: (07) 5570 3395  
Email: [transtec@bigpond.com](mailto:transtec@bigpond.com)  
Key Staff: Mark Stanford: Director,  
Jason Terry: Director, Rod Smith:  
Sales/Hire  
Main Brands: Abstract, Infinity, EVI

### Wild Gravity

106 Boundary Street  
TOWNSVILLE QLD 481C  
Tel: (07) 4721 3540  
Fax: (07) 4721 1375  
Email: [wildgrav@ozemail.com.au](mailto:wildgrav@ozemail.com.au)  
Key Staff: Noel Anthony: Managing  
Director  
Main Brands: Electro-Voice, Total  
Structures, Martin Lighting



### Audio & Visual Innovations

41 Brookes Street,  
BOWEN HILLS QLD 4001  
Phone: (07) 3252 4022  
Fax: (07) 3257 4950  
Key Staff: Cameron Gurning: Sales  
Manager, Steve Grimes: Operations  
Manager  
Main Brands: Martin, C-ay Paky, JEM

### Entertainment Lighting & Sound

30 Taree Street  
BURLEIGH JUNCTION QLD 4220  
Tel: (07) 5593 5105  
Fax: (07) 5593 5161  
Email: [els@onthenet.ccm.au](mailto:els@onthenet.ccm.au)  
Key Staff: Phil Stafford: Managing  
Director, Greg Horrocks: Sales  
Manager, Di Ritchie: Administration  
Manager

### Exciting Lighting, Sound & Special Effects Pty Ltd

PO Box 130  
BUDDINA QLD 4575  
Phone: (07) 5493 8999  
Fax: (07) 5493 9300  
Key Staff: Trevor McGavin: Director.

### Luminous Energy

22 Maud Street  
NEWSTEAD QLD 4006  
Phone: (07) 3252 1500  
Fax: (07) 3252 8910  
Key Staff: Peter McKenzie: Manager  
Sales, Craig Fussell: Sales/Programming  
Main Brands: JBL, Clay Paky, Martin

### Multi-Image Lighting

Suite 15, Level 2  
12 Short Street  
SOUTHPORT QLD 4215  
Tel: (07) 5528 1253  
Fax: (07) 5528 1256  
Key Staff: Chris King: General  
Manager, Adam De Vries, Andrew  
Hudson  
Main Brands: Martin Intelligent  
Lighting, ADJ, Geni, Jupio, JEM,  
Lytequest



### The Production Shop

82 Berwick Street  
FORTITUDE VALLEY QLD 4006  
Phone: (07) 3216 1340  
Fax: (07) 3216 1376  
Email: [sales@productionshop.com.au](mailto:sales@productionshop.com.au)  
Web Site Address:  
[www.productionshop.com.au](http://www.productionshop.com.au)  
Key Staff: Graeme Hicks: Managing  
Director, Tim Kennard: Lighting Sales  
Manager.

### Transtec (Sound, Lighting & DJ's)

5/25 Upton Street  
BUNDALL QLD 4217  
Phone: (07) 5570 3345  
Fax: (07) 5570 3395  
Email: [transtec@bigpond.com](mailto:transtec@bigpond.com)  
Key Staff: Mark Stanford: Director,  
Jason Terry: Director, Rod Smith:  
Sales/Hire  
Main Brands: Abstract, Infinity, EVI



### Electroboard

Level 2, 131 Leichhardt Street  
SPRING HILL QLD 4000  
Tel: (07) 3839 3366  
Fax: (07) 3839 3377  
Main Brands: Infocus – Multimedia  
Projectors, Smart – Interactive  
Whiteboards, Plus – Electronic  
Whiteboards

### Luminous Energy

22 Maud Street

NEWSTEAD QLD 4006  
Phone: (07) 3252 1500  
Fax: (07) 3252 8910  
Key Staff: Peter McKenzie: Manager  
Sales, Craig Fussell: Sales/Programming  
Main Brands: JBL, Clay Paky, Martin

**QLD.**

**Other**

**Holograms Fantastic & 3D Optical Illusions Pty Ltd**

PO Box 130  
BUDDINA QLD 4575  
Phone: (07) 5493 8999  
Fax: (07) 5493 9300  
Key Staff: Trevor McGaw: Director

**S.A.**

**Pro Audio**

**B.S.S. Light & Sound**

334 Port Road  
HINDMARSH SA 5007  
Tel: (08) 8340 3100  
Fax: (08) 8340 4177  
Email: [sales@bsslighandsound.com.au](mailto:sales@bsslighandsound.com.au)  
Web Site Address:  
[www.bsslighandsound.com.au](http://www.bsslighandsound.com.au)  
Key Staff: Matthew Dixon: Sales  
Manager, James Hryciuk: Sales/Hire  
Main Brands: DAS, Inter-M, Yamaha



**DERRINGERS MUSIC PTY LTD**

66-72 Leader Street  
FORESTVILLE SA 5035  
Tel: (08) 8371 1884  
Fax: (08) 8371 4030  
Email: [sales@derringers.com.au](mailto:sales@derringers.com.au)  
Web Site Address:  
[www.derringers.com.au](http://www.derringers.com.au)  
Key Staff: Peter Vitek: Retail  
& Direct Sales, Everett Kemp: Hire  
Manager, Robbie Vorel: Hitech/  
Studio Retail & Direct Sales  
Main Brands: All Audio, All Hitech,  
All Studio.

Australia wide retail and trade  
sales of Audio, Hitech, DJ, Studio  
and Lighting components.

Venue, Club, Church, School  
installations.

Yamaha, Event, Shure, Mackie,  
JBL, Martin, Korg, Digidesign,  
Emagic, Cubase, Rode, Vestax,  
Technics, Allen & Heath, Akai.

Backline, Dance, Live System Hire.

**Lightsounds Melrose Park**

20 Regent Street  
MELROSE PARK SA 5039  
Tel: (08) 8277 3444  
Fax: (08) 8374 2070  
Web Site Address: FAL Lighting,  
American DJ + Cerwin -Vega, ESP  
Technology

**Lightsounds Hindmarsh**

334 Port Road  
HINDMARSH SA 5007  
Tel: (08) 8340 4900  
Fax: (08) 8340 4177  
Web Site Address:  
[www.lightsounds.com](http://www.lightsounds.com)  
Main Brands: FAL Lighting, American  
DJ + Cerwin -Vega, ESP

**Mixmasters Productions**

21 Darwin Avenue  
HAWTHORNDENE SA 5051  
Phone: (08) 8278 8506  
Fax: (08) 8278 6295  
Email: [mixm@senet](mailto:mixm@senet)  
Key Staff: Mick Wordley: Manager  
Main Brands: Avalon, RND "Really Nice  
Compressor", Sytek Class A Mic-Pre's.

**Pro Go Stage Sound Whyalla**

1/77 Essington Lewis Avenue  
WHYALLA SA 5600  
Phone: (08) 8644 0211  
Fax: 908) 8644 0233  
Email: [proco@wh.camtech.net.au](mailto:proco@wh.camtech.net.au)  
Key Staff: Ron Hay: Proprietor, Irene

Palmer: Office Manager  
Main Brands: Jands, JBL, Shure

**Shrape International**

21 Darwin Avenue  
HAWTHORNDENE SA 5051  
Tel: (08) 9939 4004  
Fax: (08) 9939 4007  
Email: [shrape@ozemail.com.au](mailto:shrape@ozemail.com.au)  
Web Site Address:  
[www.ozemail.com.au/~shrape](http://www.ozemail.com.au/~shrape)  
Key Staff: Mick Wordley: Sales  
Manager  
Main Brands: Joe Meek, Sherman  
Filter Banks, vintage Studio Equipment

**S.A.**

**Lighting**

**Quantum Efex. Pty Ltd**

20 Regent Street  
MELROSE PARK SA 5039  
Phone: (08) 8277 3444  
Fax: (08) 8374 2070  
Email: [gfx@dove.net.au](mailto:gfx@dove.net.au)  
Key Staff: Glen Gitsham: Manager,  
Michael Hogan: Sales  
Main Brands: SLS Panscan,  
Optikinetics, Flexilight.

**S.A.**

**Audio Visual**

**Electroboard**

26 Greenhill Road  
WEYVILLE SA 5034  
Tel: (08) 8271 0019  
Fax: (08) 8373 0162  
Main Brands: Infocus - Multimedia  
Projectors, Smart - Interactive  
Whiteboards, Plus - Electronic  
Whiteboards.

**VIC.**

**Pro Audio**

**ALLANS MUSIC**

133 Bourke Street,  
MELBOURNE VIC 3000  
Phone: (03) 9654 8444  
Fax: (03) 9654 7868  
Email: [hitech@allens.com.au](mailto:hitech@allens.com.au)  
Web Site Address:  
[www.allans.com.au](http://www.allans.com.au)  
Key Staff: Mark King, Steve Clarke,  
Mel Sciarrone  
Main Brands: A.K.G., A.R.T., Akai,  
Aphex, Audio Technica, Boss,  
C.A.D., dB Technology, dbx, D.O.D.,  
Digitech, Emu, Focusrite, Fostex,  
Genelec, JBL, Kawai, Kurzweil,  
Mackie, Phonic, PreSonus, Rode,  
Roland, Sennheiser, Shure, Spirit,  
Tannoy, Tascam, Yamaha, Yorkville  
and Zoom.  
Near-Field Monitors; Analogue and  
Digital mixing desks; Tape and  
hard-disk multi-track recorders;  
outboard rack gear; microphones  
(live and condenser); and all major  
computer card and software  
recording systems.

**CC's Light & Sound Pty Ltd**

17 Alex Avenue  
MOORABBIN VIC 3189  
Phone: 1800 803 064/03 9532 0488  
Fax: (03) 9553 2798  
Email: [info@ccslightsound.com.au](mailto:info@ccslightsound.com.au)  
Web Site Address:  
[www.ccslightsound.com.au](http://www.ccslightsound.com.au)  
Key Staff: Roger Clapton, Rick Baker.  
Main Brands: Second-Hand Equipment,  
JBL, Yamaha

**David Stephen Electronics**

135 MacPherson Street  
NHILL VIC 3418  
Phone: (03) 5391 3339  
Fax: (03) 5391 1463  
Email: [dse30@hotmail.com](mailto:dse30@hotmail.com)  
Key Staff: David Stephen: Owner  
Main Brands: Mackie, Acoustic  
Technologies, Crest Audio.

**DB Concert Sound Pty Ltd**

26 Riversdale Road  
GEELONG VIC 3220  
Phone: (03) 5221 1688  
Fax: (03) 5221 4113  
Email: [dbs@pipeline.com.au](mailto:dbs@pipeline.com.au)  
Key Staff: Bill Busbridge: Sales  
Manager, Bill Dart: Managing Director,

Allan Kelly: Service Manager  
Main Brands: JBL, Soundcraft,  
Australian Monitor

#### Disco World Pty Ltd

Factory 20, Cave Hill Road  
LILYDALE VIC 3140  
Phone: (03) 9735 0588  
Fax: (03) 9739 5441  
Email: [info@discoworld.com.au](mailto:info@discoworld.com.au)  
Web Site Address:  
[www.discoworld.com.au](http://www.discoworld.com.au)  
Main Brands: Gemini, Lyte Quest, Visio  
Sonic



#### IBS AUDIO VISUAL

23-25 Burwood Highway  
BURWOOD VIC 3125  
Tel: (03) 9888 8987  
Fax: (03) 9808 6645  
Email: [sales@ibsav.com.au](mailto:sales@ibsav.com.au)  
Web Site Address:  
[homecinema.com.au](http://homecinema.com.au)  
Key Staff: Ian Ward: Managing  
Director  
Main Brands: AMX, Barco,  
Mitsubishi  
Toshiba, NEC, Bose, JBL, Shure,  
Harmon Kardon, Pioneer, Acoogee,  
DA Lite, Elmo, Screen Technics, In-  
Line, Extron, Kramer, Wolf, Fujitsu,  
Sony, Autopatch, Gentner, Team  
Board.

#### Lightsounds Reservoir

145 Keon Parade  
RESERVOIR VIC 3073  
Tel: (03) 9469 5954  
Fax: (03) 9469 5640  
Web Site Address: [www.lightsounds.com](http://www.lightsounds.com)  
Main Brands: FAL Lighting, American  
DJ + Cervin Vega, ESP Technology

#### Music Junction & Drum City/MJB Audio Visual

171 Whitehorse Road  
BLACKBURN VIC 3130  
Tel: (03) 9878 8488  
Fax: (03) 9877 4425  
Email: [musicjbl@ozemail.com.au](mailto:musicjbl@ozemail.com.au)  
Key Staff: Miles Jackson: Director,  
Mike Quin: Director, Tony Azopardi:  
Sales



**outlook**  
COMMUNICATIONS

#### OUTLOOK COMMUNICATIONS PTY LTD

121 Rupert Street  
COLLINGWOOD VIC 3066  
Tel: (03) 9415 7677  
Fax: (03) 9415 7655  
Key Staff: Greg Ginger: Managing  
Director  
AKG microphones, Canare Cable,  
Clear-com intercom systems, Crest  
amplifiers and consoles. Denon  
Relay equipment, DDA consoles,  
Dynacord powered mixers, EAW  
speakers, Electrovoice speakers  
and microphones, Eurocable,  
Fostex, K & M Stands, Klerk-Teknik  
Processing equipment, Marantz  
replay equipment, Neutrik  
connectors, Rycote, Sennheiser  
microphones and headphones –  
Evoluton series specialist, Tannoy  
speakers, Telex wireless Intercoms,  
TOA public address, XTA signal  
processors

#### Production Audio Services Pty Ltd

6-8 Elizabeth Street  
RICHMOND VIC 3121  
Tel: (03) 9415 1585  
Fax: (03) 9415 1595  
Email: [gsteve@ozemail.com.au](mailto:gsteve@ozemail.com.au)  
Web Site Address:  
[www.prodctionaudio.com.au](http://www.prodctionaudio.com.au)  
Key Staff: Graeme Stevenson: General  
Manager, Claire Greenwood: Sales &  
Administration, David Di Muzic:  
Service Manager  
Main Brands: Eastern Acoustic Work,  
Crest Audio, XTA Electronics

#### Showcase Productions Pty Ltd

10/136 Cochrans Road  
MOORABBIN VIC 3189  
Tel: (03) 9555 1997  
Fax: (03) 9555 9220  
Email: [show.case@bigpond.com](mailto:show.case@bigpond.com)  
Key Staff: George Gobaira: Managing  
Director



#### SOUNDCORP PTY LTD

199 Heidelberg Road  
NORTHCOTE VIC 3070  
Phone: (03) 9488 1555  
Fax: (03) 9488 1550  
Email: [sales@soundcorp.com.au](mailto:sales@soundcorp.com.au)  
Web Site Address:  
[www.soundcorp.com.au](http://www.soundcorp.com.au)  
Key Staff: Michael Lasa: Sales  
Manager, Scott Jamieson: Sales  
Consultant, Kylie Moran: Sales  
Consultant.  
Main Brands: JBL, Yamaha, Sony  
Specialising in professional audio  
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CANARE, CREST, CRESTRON,  
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TASCAM, TC-ELECTRONIC,  
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#### System Sales

10-13 Porter Street  
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Phone: (03) 9529 2633  
Fax: (03) 9529 4897  
Email:  
[peterjago@systemsound.com.au](mailto:peterjago@systemsound.com.au)  
Key Staff: Peter Jag: Manager, John  
Scandrett: Director, Peter Grubb:  
Director  
Main Brands: Tannoy, Cyberlogic,  
Meyer, LCS, BSS, Yamaha, Cadac,  
Richmond Sound Design

#### Warehouse Sound Systems Pty Ltd

77 Argyle Street  
FITZROY VIC 3065  
Phone: (03) 9417 4866  
Fax: (03) 9419 0958  
Email: [sven\\_langebeck@hotmail.com](mailto:sven_langebeck@hotmail.com)  
Key Staff: Sven Langebeck: Managing  
Director, Ray Best: Retail Manager,  
Martin Brown: Sales Manager  
Main Brands: Shure, JBL, Yamaha

#### The Disco Factory

Factory 3, 35 Malvern Street  
BAYSWATER VIC 3152  
Phone: (03) 9729 9987  
Fax: (03) 9738 0640  
Email: [disco@dbworld.net.au](mailto:disco@dbworld.net.au)  
Web Site Address:  
[www.discofactory.com.au](http://www.discofactory.com.au)  
Key Staff: Dean McGrath: Sales  
Manager, Tim Walton: Marketing  
Manager

Main Brands: RCF, Omnitronics,  
Dennon, AKG, Technics.

#### Troy House of Music Pty Ltd

568 Chapel Street  
SOUTH YARRA VIC 3141  
Phone: (03) 9827 9955  
Fax: (03) 9827 0871  
Key Staff: Luke Troy: Manager, Justin  
Dare: Sales/Hire Manager

**VIC.**

**Lighting**

#### CC's Light & Sound Pty Ltd

538 City Road  
SOUTH MELBOURNE VIC 3205  
Phone: 1800 633 363/03 9690 3999  
Fax: (03) 9690 3988  
Email: [info@ccslightsound.com.au](mailto:info@ccslightsound.com.au)  
Web Site Address:  
[www.ccslightsound.com.au](http://www.ccslightsound.com.au)  
Key Staff: Roger Clapton, Arseno Fabay Jr.  
Main Brands: Martin, ProLite, Jands



#### Clearlight Shows Pty Ltd

9 Horscroft Place,  
MOORABBIN VIC 3189  
Phone: (03) 9553 1688  
Fax: (03) 9553 4401  
Email: [clearlight@clearlight.com.au](mailto:clearlight@clearlight.com.au)  
Key Staff: John McKissock: Managing  
Director, Martin Bowman: Hire  
Department Manager, Lachlan Sinclair:  
Production Manager  
Main Brands: Selecon, James Thomas  
Engineering Ltd, Mastercut Australia



#### Concert Lighting Systems

63-65 Kingsway  
SOUTHBANK VIC 3006  
Phone: (03) 9682 6111  
Fax: (03) 9682 6777  
Email: [info@clsa.com.au](mailto:info@clsa.com.au)  
Web address: [www.clsa.com.au](http://www.clsa.com.au)  
Key Staff: Leigh Greig: Production  
Manager, John Andrews: Hire  
Manager, Sharyn McKee: Sales  
Manager

**Lightmoves Pty Ltd**

7 Mayston Street  
EAST HAWTHORN VIC 3123  
Phone: (03) 9813 2955  
Fax: (03) 9813 2466  
Email: [info@lightmoves.com](mailto:info@lightmoves.com)  
Web Site Address:  
[www.lightmoves.com](http://www.lightmoves.com)  
Key Staff: Joe Casamento: Sales  
Manager.  
Main Brands: LSC, Prolite, Lee Filters.

**SLC - Sound & Light Concepts**

26 Martin Drive,  
DELACOMBE VIC 3356  
Phone: (03) 5336 1255  
Fax: (03) 5336 1320  
Email: [slc@slc.au.com](mailto:slc@slc.au.com)  
Web Site Address: [www.slc.au.com](http://www.slc.au.com)  
Key Staff: Craig Butterworth: Partner/  
Manager, Geoffrey Johnston: Partner,  
Matthew Oates.  
Main Brands: LSC, Selecon, Lamps –  
all types.

**Stage Two Lighting Pty Ltd**

51 Glen Eira Road  
EAST ST KILDA VIC 3183  
Tel: (03) 9528 2917  
Fax: (03) 9532 8430  
Key Staff: Terry Haigney: Production  
Manager, Ray Haigney: Hire Manager

**Star Sound & Lighting**

3/35 Malvern Street  
BAYSWATER VIC 3153  
Tel: (03) 9729 9987  
Fax: (03) 9738 0640  
Email: [discofactory@acl.com.au](mailto:discofactory@acl.com.au)  
Web Site Address:  
[www.discofactory.com.au](http://www.discofactory.com.au)  
Key Staff: Tim Walton: Marketing,  
Dean McGrath: Sales Manager, Brian  
Walton: Tech. Manager  
Main Brands: Abstract, JB Lighting,  
Infinity

**The Disco Factory**

Factory 3, 35 Malvern Street  
BAYSWATER VIC 3152  
Phone: (03) 9729 9987  
Fax: (03) 9738 0640  
Email: [disco@dbworld.net.au](mailto:disco@dbworld.net.au)  
Web Site Address:  
[www.discofactory.com.au](http://www.discofactory.com.au)  
Key Staff: Dean McGrath: Sales  
Manager, Tim Walton: Marketing  
Manager  
Main Brands: RCF, Omnitronics,  
Dennon, AKG, Technics.

**VIC.****Audio Visual****Electroboard**

Ground Floor  
570 St Kilda Road  
MELBOURNE VIC 3000  
Tel: (03) 9521 7600  
Fax: (03) 9521 7555  
Main Brands: Infocus – Multimedia  
Projectors, Smart – Interactive  
Whiteboards, Plus – electronic  
Whiteboards

**H & C Audio Pty Ltd**

9 Forest Court  
NORTH RINGWOOD VIC 3134  
Tel: (03) 9876 2333  
Fax: (03) 9876 2033  
Email: [hcaudio@ozemail.com.au](mailto:hcaudio@ozemail.com.au)  
Web Site Address:  
[www.ozemail.com.au/~hcaudio](http://www.ozemail.com.au/~hcaudio)  
Key Staff: Hilary Evans: Director  
Main Brands: Sound Advance,  
Soundtube, IMP Systems



**IBS**  
Audio Visual

**IBS AUDIO VISUAL**

23-25 Burwood Highway  
BURWOOD VIC 3125  
Tel: (03) 9888 8987  
Fax: (03) 9808 6645  
Email: [sales@ibsav.com.au](mailto:sales@ibsav.com.au)  
Web Site Address:  
[homecinema.com.au](http://homecinema.com.au)  
Key Staff: Ian Ward: Managing  
Director  
Main Brands: AMX, Barco,  
Mitsubishi  
Toshiba, NEC, Bose, JBL, Shure,  
Harmon Kardon, Pioneer, Apogee,  
DA Lite, Elmo, Screen Technics, In-  
Line, Extron, Kramer, Wolf, Fujitsu,  
Sony, Autopatch, Gentner, Team  
Board.

**Music Junction & Drum City/MJB  
Audio Visual**

171 Whitehorse Road  
BLACKBURN VIC 3130  
Tel: (03) 9878 8488  
Fax: (03) 9877 4425  
Email: [musicjbl@ozemail.com.au](mailto:musicjbl@ozemail.com.au)  
Key Staff: Miles Jackson: Director,

Mike Quin: Director, Tony Azopardi:  
Sales

**Soundcorp Pty Ltd**

199 Heidelberg Road  
NORTHCOTE VIC 3070  
Phone: (03) 9488 1555  
Fax: (03) 9488 1550  
Email: [sales@soundcorp.com.au](mailto:sales@soundcorp.com.au)  
Web Site Address:  
[www.scoundcorp.com.au](http://www.scoundcorp.com.au)  
Key Staff: Michael Lasa: Sales  
Manager, Scott Jamieson: Sales  
Consultant, Kylie Moran: Sales  
Consultant.  
Main Brands: Crestron, Fujitsu, Sony

**VIC.****Other****Melmusic.com.au  
(Second hand retail)**

523 North Road  
ORMOND VIC 3163  
Phone: (03) 9578 2426  
Fax: (03) 9578 5112  
Email: [melmusic@melmusic.com.au](mailto:melmusic@melmusic.com.au)  
Web Site Address:  
[www.melmusic.com.au](http://www.melmusic.com.au)  
Key Staff: Brad Coates: Managing  
Director, Wolf Franke: Pro Audio, Choo  
Packer: M.I.  
Main Brands: Hammer – new, All  
Brands & Models second hand.

**Music Junction & Drum City/MJB  
Audio Visual**

171 Whitehorse Road  
BLACKBURN VIC 3130  
Tel: (03) 9878 8488  
Fax: (03) 9877 4425  
Email: [musicjbl@ozemail.com.au](mailto:musicjbl@ozemail.com.au)  
Key Staff: Miles Jackson: Director,  
Mike Quin: Director, Tony Azopardi:  
Sales

**The Disco Factory**

Factory 3, 35 Malvern Street  
BAYSWATER VIC 3152  
Phone: (03) 9729 9987  
Fax: (03) 9738 0640  
Email: [disco@dbworld.net.au](mailto:disco@dbworld.net.au)  
Web Site Address:  
[www.discofactory.com.au](http://www.discofactory.com.au)  
Key Staff: Dean McGrath: Sales  
Manager, Tim Walton: Marketing  
Manager  
Main Brands: RCF, Omnitronics,  
Dennon, AKG, Technics.

**W.A.****Pro Audio****AVLA (Audio Visual Lighting  
Australia)**

19 Regal Place  
EAST PERTH WA 6004  
Phone: (08) 9221 1888  
Fax: (08) 9221 1444  
Email: [sales@avla.com.au](mailto:sales@avla.com.au)  
Web Site Address: [www.avla.com.au](http://www.avla.com.au)  
Key Staff: Paul Raphael: Sales DJ,  
Lighting, Mark Van Welie: Sales  
ProAudio, Lighting, Gino Lombardi:  
Sales AV  
Main Brands: Clay Paky, Numark, EV

**Kosmic Sound and Lighting**

7/44 Hutton Street  
OSBORNE PARK WA 6017  
Tel: (08) 9242 3844  
Fax: (08) 9444 1144  
Email: [sales@kosmic.com.au](mailto:sales@kosmic.com.au)  
Web Site Address: [kosmic.com.au](http://kosmic.com.au)  
Key Staff: Roy Adams: Sales and  
Marketing Manager, Clint Arnold:  
Product Manager, Kim Musa: Product  
Manager  
Main Brands: Roland, Fender,  
Digidesign



**KOSPRO**  
INTERNATIONAL

**KOSPRO INTERNATIONAL**

Level 2/165 Adelaide Terrace  
PERTH WA 6000  
Phone: (08) 9221 8880  
Fax: (08) 9221 8989  
Email: [rob@kospro.com](mailto:rob@kospro.com)  
Web Site Address:  
[www.kospro.com](http://www.kospro.com)  
Key Staff: Rob Scott: Manager,  
Rick Browne: Projects, Paul Cale:  
Lighting  
Main Brands: JBL, Yamaha, Digital  
Studio processing  
Kospro International are turnkey  
project specialists including  
acoustic consultancy, studio  
design, large venue sound/lighting  
design, supply, installation,  
commissioning, training and  
troubleshooting. Such is our  
reputation for excellence that we  
have been endorsed and  
recommended overseas by the  
Government of Western Australia.  
Other major products include  
Digidesign, EAW, Crown, Shure,  
Behringer, Peavey, Sony, Rane,  
Roland, Electro Voice.

**W.A.**

**Lighting**

**AVLA (Audio Visual Lighting Australia)**

19 Regal Place  
EAST PERTH WA 6004  
Phone: (08) 9221 1888  
Fax: (08) 9221 1444  
Email: [sales@avla.com.au](mailto:sales@avla.com.au)  
Web Site Address: [www.avla.com.au](http://www.avla.com.au)  
Key Staff: Paul Raphael: Sales DJ, Lighting, Mark Van Welie: Sales ProAudio, Lighting, Gino Lombardi: Sales AV  
Main Brands: Clay Paky, Numark, EV

**Stage & Studio**

6 Cleaver Street  
WEST PERTH WA 6005  
Phone: (08) 92279932  
Fax: (08) 9227 9347  
Email: [ssprod@networx.net.au](mailto:ssprod@networx.net.au)  
Key Staff: David Cook: Managing Director, Darren Heath: General Manager, Natalie Stankovic: Office Administrator.  
Main Brands: Selecon, Jands Shure.

**W.A.**

**Audio Visual**

**AVLA (Audio Visual Lighting Australia)**

19 Regal Place  
EAST PERTH WA 6004  
Phone: (08) 9221 1888  
Fax: (08) 9221 1444  
Email: [sales@avla.com.au](mailto:sales@avla.com.au)  
Web Site Address: [www.avla.com.au](http://www.avla.com.au)  
Key Staff: Paul Raphael: Sales DJ, Lighting, Mark Van Welie: Sales ProAudio, Lighting, Gino Lombardi: Sales AV  
Main Brands: Clay Paky, Numark, EV

**Electroboard**

Level 12, 256 Adelaide Terrace  
PERTH WA 6000  
Tel: (08) 3221 5940  
Fax: (08) 9221 5954  
Main Brands: Infocus – Multimedia Projectors, Smart – Interactive Whiteboards, Plus – Electronic Whiteboards

**TAS.**

**Audio Visual**

**Electroboard**

Ground Floor  
25 Argyle Street  
HOBART TAS 7000  
Tel: (03) 6231 6900  
Fax: (03) 6231 6903  
Main Brands: Infocus – Multimedia Projectors, Smart – Interactive Whiteboards, Plus – Electronic Whiteboards

**I'm furious that those turkeys at Connections left my outlet out of their directory. Froth, bother, reach for phone to vent spleen .....**

{ The turkeys respond that they don't enjoy leaving people out, but that to ensure the directory is real and kosher, every entry must be re-entered each year. And some outlet owners are too busy to do this! They also failed to notice the 'forthcoming feature' notices in the mag too.}

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**W.A. TAS.**

# Connections

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# SPECIAL

## RECORDING FORMATS DEVELOP

By Julius Grafton

IT'S ALL HARD DISK FROM NOW ON. And, the modular digital multitrack based on a tape mechanism is in the sunset of its life, having contributed greatly to the democratisation of recording in the 1990's.

Don't write off the DTRS product from Tascam, or the ADAT from Alesis yet, though. Both have new or newish 24 bit products out there, which will continue to read old project tapes, and do fine professional recordings. And they cost less than ever too.

Funny enough, as we head into another year the new formats are kind of like the old, meaning that the replacement for top-end 24 track linear tape based multitrack recorders is a 24 or 48 track hard disk machine designed to act LIKE more or less like the old machines. Check out the three on the next page.

If you are looking at some kind of commonality in file transfer formats, then that's closer too. But still far away. Fairlight, Akai and Tascam are all able to read ProTools files, but it's a one way transaction.

Avid (owners of DigiDesign) have the OMM initiative coming, a standard interface for integrating content creation tools with asset management systems and web-based media resources, which would enable media and metadata objects to be shared in a networked environment with drag and drop simplicity. Maybe it'll become widespread.

But right now the only real way to transfer digitally recorded projects from one kind of system to another kind is by saving the job as a .wav file, which is 16 bit limited and a bit primitive. And, your flash automation and effects need to be exported to a spare track in the process.

The Audio Engineering Society (AES) have a draft AES31-3 file exchange standard coming which should become a defacto standard, it is a more robust version of the .wav format and will run 24 bit and beyond.

One area which is showing signs of consolidating is the card/software/PC combination, where ProTools and CuBase rule. More and more the hot product is firmware based, where the processing chips are inside the box, without a traditional computer, keyboard or screen. And without Windows software!



### ProTools V5.0 includes MIDI, AV options

THE CLEAR WINNER IN PC BASED RECORDING is currently DigiDesign with ProTools. When we say PC, we mean personal computer. ProTools has contributed to the continuance of that most troubled computing platforms, the Apple Mac. We love -and also hate- the Mac with a vengeance here at Connex - and we use a whole raft of them. But then we love/hate our NT, and Win 98 machines too!

Clearly many tens of thousands of enthusiasts have accepted that a Mac needs to be a part of the equation, then added in ProTools cards and software, and added on the necessary hardware. Click, point and presto - very professional results.

Now Pro Tools version 5.0 breaks new ground with fully fledged MIDI functionality. MIDI features in the new Pro Tools include true, sample-accurate view of MIDI and audio tracks in a single Edit window, unlimited tracks (*depending on RAM, and you should always buy WAY more than you think you need*), graphic controller editing (including drawing), and MIDI data manipulation with functions such as Quantize, Transpose, Split, Change Velocity, and Duration.

Other features include grid-based editing,

multiple timebase and conductor rulers, arranging via regions and edit groups, and MIDI volume/mute control via external controllers such as DigiDesign's ProControl (*seen above*) or Mackie's HUI.

Pro Tools 5.0 with AVoption or AVoption|XL is the latest move forward by DigiDesign and their parent company Avid in creating a dedicated digital audio post workstation.

The new video add-on hardware options for Pro Tools 5.0 provides plug and play integration with Avid Video, broadcast quality video capture/playback, vastly improved OMF translation and EDL assembly.

Post-specific software enhancements in Pro Tools 5.0 include single keystroke access to most editing functions, stationary playhead, dual selection 'source/destination' style editing, grabber selection of discontinuous elements, 'Fit to Marks,' and snap to region start/end/sync point commands. Pro Tools' MachineControl option is improved, providing fast serial timecode control of 9-pin decks. A redesigned standalone OMF transfer tool application called DigiTranslator allows import and export of Pro Tools sessions and OMF files. • Go [www.digidesign.com](http://www.digidesign.com)

# REPORT



## Got 40 grand? Then these are the hot options ~ at the minute!

THESE ARE THE FRONT END, TCP CHOICES FOR PROFESSIONAL MUSIC RECORDING. These three machines or devices bring ease of use, ergonomics, and powerful features into the hands of the masses. And you need a mixing console too, just like always.

Plug in 24 or 48 desk outputs, then feed 24 or 48 track returns back to the desk, and carry on just like you have a Studer reel to reel.

The Merlin from Fairlight (top, left) is an adaptation of their extremely successful MFX system, which is very hot with the Post sector. (See page 28 of this issue for more on Merlin).

To some degree a bunch of Post recordists in the Los Angeles basin drive the designs of our audio recording gear these days!

Euphonix have a hot entrant in the R-1, pictured centre. It offers 48 Tracks at 24bits and is wired for 96Khz sampling (like the others).

This is a future option that'll need extra processing and probably reduce the number of tracks.

Unlike a Studer or reel to reel multitrack, these machines all offer non destructive recording, random access and no waiting. They all have elaborate software and user consoles, with remote processing hardware so the audio patching is done wherever the music is.

Finally the most established of the three is the Otari Radar II (right). It won a TEC award for Recording Devices late in 1999. The Otari RADAR has enjoyed huge acclaim world-wide with sales now well in excess of 1,000 systems. There are a growing number of RADAR systems installed in the region, Studios 301 have ordered several.

The market under 40 grand is saturated with options, we've shown just some in this special report - and our Buyer's Guide.

## New and coming soon...

Continuing the theory that simplicity sells, the all-in-one hard disk recording revolution continues, with new and worthy entrants from Tascam (MX 2424, top) and Mackie (HDR-24).

These hot new boxes will land at super competitive prices, expect under ten grand for 24 tracks.

Every new offering in the market now works at 24 bits, and most are prewired for some kind of 96kHz sampling rate capability when the industry decides we need it. I'm unsure we do!

To give you an idea how volatile this market sector is, the two new and hot boxes of this kind right now are priced in an interesting manner. Yamaha offer the D24, an 8 track 24 bit unit at about A\$7500. Akai have just released the DR16pro, a four rack unit tall 16 track 24 bit recorder, at under A\$11,000. But the new 24 track units on the right are slated at about ten grand!

Then there is Roland's new V-Mix system, which Connections covered in October. Then there are about a dozen other kinds of firmware, or non PC reliant, recording devices, all coming.....



# buyers guide::

## RECORDERS & SOFTWARE

Prices INCLUDE sales tax and were correct on 15th November 1999. All care taken, no responsibility for errors. Four models only are shown in each category although these manufacturers have many more. Indicative only.

### RECORDING SOFTWARE ALONE

#### EMAGIC

*Electric Factory +61 3 9480 5988*

**MicroLogicAv Mac And Win** Audio and MIDI sequencer with notation for Macintosh and Windows. Includes 16 audio tracks, 3-band EQ, 2 sends, 2 effects busses (Reverb, Delay, Chorus), integrated stereo sample editor, plus much more. \$279.

**Logic Audio Silver Mac And Win** Audio and MIDI sequencer with notation and simple environment. Includes 24 audio tracks, fully parametric EQs, 1 insert, 2 sends, 4 effects busses, 14 native effects algorithms, VST support, sample editor with Time Machine I, plus much more. \$499.

**Logic Audio Gold Mac And Win** High-end Audio and MIDI sequencer for Windows. 16bit audio resolution, 32 audio tracks (64 with multiple audio hardware), fully parametric EQs, 8 inserts, 8 sends, 8 busses, 26 native effects algorithms, DirectX support, sample editor with Time Machine II, audio quantising, plus much more. \$999.

**Logic Audio Platinum Mac And Win** High-end Audio and MIDI sequencer for Macintosh. Includes up to 24bit/96kHz audio resolution, 64 audio tracks (128 with multiple audio hardware), fully parametric EQs, 8 inserts, 8 sends, 16 busses, 34 native effects algorithms, VST support, sample editor with Time Machine II, audio quantising, plus much more. \$1499.

#### MARK OF THE UNICORN

*Moore Music +61 3 9419 0344*

**Digital Performer** Integrated digital audio and MIDI sequencing software for Mac. Real-time audio FX. Virtual recording and mixing. Time-stretching, pitch-shifting, more. \$1295.

#### SEK'D

*Moore Music +61 3 9419 0344*

**Samplitude 2496** 24 bit, 96kHz audio suite, Pro CD burning facilities. Turn your PC into a rack of Direct X plug ins. \$1699.

#### SONIC FOUNDRY

*Moore Music +61 3 9419 0344*

**Vegas Pro** revolutionary multitrack media editing system. Handles any sample rate, any bit depth, 24 bit 96kHz PC software, real-time file/event resampling, non-destructive editing, unlimited tracks. \$995.

#### TCIWORKS

*Electric Factory +61 3 9480 5988*

**SPARK for Mac** Audio Editing, Processing and Mastering Solution. For the Macintosh. Direct I/O support, 24-bit/96kHz, includes 11 TC VST effects software plug-ins. Scrub and realtime time compression/Expansion, use of up to 20 simultaneous VST plug-ins (series/parallel), off-line editing, Wave Editor, batch processing, dither, sampler support and more. Comes with Toast Pro for CD authoring. \$699.

#### TURTLE BEACH

*Moore Music +61 3 9419 0344*

**Digital Orchestra Pro** MIDI and digital audio sequencer and editor. 1000 tracks of digital audio/MIDI. \$1295.

#### VISIOSONIC

*Disco World +61 3 9735 0588*

**PC-DJ** The original playing recording software - **PC DJ PHAT** - The ultimate entertainment software - **PCDJ PHAT MIXMASTER** - The ultimate PC entertainment software plus - **PCDJ Digital 1200SL** - The ultimate choice for professional DJ's - Call for Special pricing or download a free 30day trial on all models [www.visiosonic.com](http://www.visiosonic.com)

### SOFTWARE WITH PC/MAC HARDWARE or HD SYSTEM

#### ALESIS

*Electric Factory +61 3 9480 5988*

**ADAT-PCR** Personal Computer Recording System. PCI-format computer interface card for all ADAT recorders and ADAT compatible products, ADAT Optical and S/PDIF audio inputs and outputs, includes Emagic software for recording, editing and sequencing. \$899.

#### DIGIDESIGN

*Sound Devices +61 2 9283 2077*

**Protool 24mix** 24 bit 64 simultaneous playback tracks with up to 72 discrete inputs and outputs. Includes Protools 5 software and real time TDM effects. \$13,599.

**Protool 24mix Plus** all the features of Protool 24mix but with twice the DSP power which allows even more TDM realtime effects to be enabled. \$16,999.

**Protool 24** 24 bit 32 simultaneous playback tracks with up to 72 discrete inputs and outputs. Includes Protools 5 software and real time TDM effects. \$10,199.

**Digi 001** new Digi home studio system with 24 track of 24 bit audio, 128 Midi tracks, realtime mixing and effects with RTAS. 24 bit 8 I/O box with

mic and digital S/PDIF. \$1995.

#### ECHO

*Musiclink +61 3 97656530*

**Layla** 20 bit Cross platform, multitrack PCI system, 8 balanced ins & outs, S/PDIF, wordclock, MIDI & converters in rackmount breakout box. Ships with Cool Edit LE. Compatible with all major software. \$2,499.

**Darla 24** 24 bit, 96kHz Cross platform, multitrack PCI system, balanced ins & outs, S/PDIF, & converters in breakout box. Ships with Cool Edit LE. Compatible with all major software. \$1,199.

#### EMAGIC

*Electric Factory +61 3 9480 5988*

**Audiowerk2 Mac and Win** PCI audio card for Macintosh and Windows. Incorporates 2 analogue I/O, SPDIF digital I/O, Micrologic AW2 software for Mac, Waveburner software for Mac, Logic Audio Composer software for Win, Zap software for Mac and Win. \$599.

**Audiowerk8 Mac and Win** PCI audio card, incorporates 2 analogue inputs, 8 analogue outputs, SPDIF digital I/O, continuous sample rate calibration for perfect synchronisation, multiple card capabilities, includes VMR multitrack software for Mac and Win. \$999.

#### ENSONIQ

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**PARIS Concept** Complete recording system includes the Interface 2 (2 analogue ins and outs), EDS500 Card & PARIS 128 track software. Compatible with VST/Direct X plug-ins. Expandable to higher systems. \$2699.

**Paris Concept FX** Complete recording system includes the Interface 2 (4 Analogue I/O, 2 S/PDIF I/O, Word Clock), EDS1000 DSP Card, PARIS 128 track Software. Built in DSP and compatible with VST/Direct X plug-ins. Expandable to higher systems. \$3699.

**PARIS 3 DAW** Professional Audio Recording Integrated System - includes the Interface MEC (Modular Expansion Chassis - 4 Analogue I/O, 2 S/PDIF I/O, Word Clock, expandable 24-bit I/O, ADAT I/O and more) Control 16 tactile mixer, EDS1000 DSP Card & PARIS 128 track Software. Built in DSP and compatible with VST/Direct X plug-ins. \$7999.

**PARIS 2 DAW** Same as PARIS 3 except with the Interface 442 (4 Ana-

logue I/O, 2 S/PDIF I/O, Word Clock). \$6999.

#### EVENT ELECTRONICS

*Musiclink +61 3 97656530*

**Hyperactive** 24 bit, 96kHz Cross platform, multitrack PCI system, 8 balanced ins & 8 outs, headphone out, S/PDIF, Wordclock, MIDI, 64 voice sample playback, multiple on board effects, Super fast processing. Compatible with all major software. \$2,999.

#### KORG

*Musiclink +61 3 97656530*

**OASYS** 24 bit, 96kHz Cross platform, multitrack PCI system; analog, digital & ADAT I/O; on board effects; multiple polyphonic synthesis systems with effects. Compatible with all major software. \$4,000.

#### MARK OF THE UNICORN

*Moore Music +61 3 9419 0344*

**2408 HDR** system - 24 independent I/O, 7 banks 8ch I/O, 3 ADAT optical, 3 Tascam T/DIF, stereo S/PDIF, 24 bit internal resolution, 20 bit AD/DA converters total sync, 1U, software: Auto desk. \$2695.

#### MIDIMAN

*Electric Factory +61 3 9480 5988*

**Delta1010** PCI Hard Disk Recording System, 8 balanced/unbalanced 24-bit/96kHz analogue I/O (+4/-10) with S/PDIF 24-bit/96kHz digital I/O, Word Clock. Rack mount chassis with professional quality external converters. Multi-Delta-card support. Includes extensive monitoring and routing software. Win95/98, ASIO, NT(Nov99), Mac(Dec99). \$2299.

**Delta66** PCI Hard Disk Recording System, 4 balanced/unbalanced 24-bit/96kHz analogue I/O (+4/-10) with S/PDIF 24-bit/96kHz digital I/O, professional quality converters, external chassis, Multi-Delta-card support. Includes extensive monitoring and routing software. Win95/98, ASIO, NT(Nov99), Mac(Dec99). \$1199.

**DeltaDio24/96** PCI 24-bit/96kHz Digital I/O card. Combines coaxial and optical digital I/O with stereo analogue outputs (+4/-10). Multi-Delta-card support. Includes monitoring and routing software. Win95/98, ASIO, NT(Nov99), Mac(Dec99). \$699.

**DMAN 2044** Mac and PC PCI Audio Card, 4 in/4 out audio via 20 bit converters. Full Duplex, 1/4" jacks, input monitoring and on Board DSP. 99dB Dynamic Range, App 95db S/N. \$649.

## TERRATEC

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**EWS88MT** multitracking solution - 10 ins, 10 outs, 24 bit 96kHz PCI card, S/PDIF, S/PDIF I/O, 2 digital I/O, comes with Sek'd Samplitude Basic, Emagic Micrologic 4.0 and more. \$1395.

**DMX** advanced audio accelerator. 4 channel outs. Optical and coax digital in and out. Direct X hardware acceleration. A3D and EAX compatible. 64 voice wavetable, audio mixer, plus Wavelab Lite sample editor s/w. \$399.

## TURTLE BEACH

*Moore Music +61 3 9419 0344*  
**Montego II Home Studio** software: Digital Orchestra Pro Sequencer and Editor plus much more. Hardware: 18 bit stereo "Quadzilla" sound card, +92dB, 320 voice wavetable plus "Cancun" 64 voice daughterboard, SPDIF I/O in separate bay. \$899.

## YAMAHA

*Yamaha Music Australia +61 3 9693 5164*

**DS2416** Digital audio mixing card features on board DSP power of O2R 24 Ch of EQ, dynamics, delay & metering .10 buss, 6 Aux mixer. On-board hardware effects & digital patch-bay and 16 track hard disk recorder hot wired to internal mixer. (16-24 bit) I/O and stereo analog in & out with 20 bit AD & DA converters. \$1495.

**AX44** Analog interface card providing 4 inputs (2 switchable to Mic level) and 4 jack outputs plus a stereo headphone output. The AX44 mounts into a standard 5.25" computer drive bay. Two AX44s may be added to the DS2416 card. \$645.

**AX16-AT** DSP Factory ADAT interface card providing twin optical connectors for 16 channels of input and output. The AX16AT mounts in a PCI slot with rear connections. \$645.

## STAND ALONE RECORDER, MDM OR FIRMWARE BASED SYSTEM

### AKAI

*Australis Music +61 2 9698 4444*  
**Akai DR16 Pro** 16 Track Playback, 16,20 24 Bit, 32,44.1, 48 and 96 kHz Pro tools file import. P.O.A.

**Akai DD8 Plus** 8 Track Record/Playback; 16,20 and 24 bit recording; 32-96 kHz sample rate With pull up pull down; Strong SMPTE implementation; Loads OMF files from MAC disks; Loads and records to protocols; Loads FairLight files and many others; Word clock SYNC; Full time cross fades and extensive trim editing. P.O.A.

**Akai DD16PB Plus** As above but 16 track playback only. P.O.A.

### ALESIS

*Electric Factory +61 3 9480 5988*  
**ADAT LX20** 20-Bit Digital Audio Recorder. The most economical ADAT-format recorder, ADAT Type II format...records 16- or 20-bit digital

audio, excellent audio quality (97dB dynamic range, 48kHz sample rate), 16 LX20s linkable for up to 128 tracks. \$3899.

**ADAT XT20** 20-Bit Digital Audio Recorder. ADAT Type II format...records 16 or 20-bit digital audio, digital editing and 10-point auto locating. superior-to-CD audio quality (102dB dynamic range, 48kHz sample rate), balanced and unbalanced audio interfacing, Stackable for up to 128 tracks, fast transport with intelligent software control. \$4999.

**ADAT M20** Professional 20-Bit ADAT Type II Digital Audio Recorder. Records 16- or 20-bit digital audio, built-in SMPTE/EBU synchronisation, interface for video reference, time code, RS-422 9-pin, MIDI and more, direct-drive transport for constant use, Jog/Shuttle wheel, digital editing and 100-point auto locating. superior-to-CD audio quality (103dB dynamic range, 48kHz sample rate), 24-bit A/D and D/A converters, all balanced audio interfacing...XLR and ELCO. \$7999.

**ADAT Studio Pack** Complete Pack includes an ADAT LX20 20-Bit Digital Audio Recorder, Studio24 Mixer, Nanoverb Reverb unit, Nano Compressor, instructional video and cabling. \$5499.

### BOSS

*Roland Australia +61 2 9982 8266*  
**BOSS BR8** Digital Studio Workstation (RRP\$1795)  
The BOSS BR-8 is an 8-track digital recording studio designed specifically for musicians who want to spend more time recording songs, and less time working out how to record them! - Brand New \$1795

### EUPHONIX

*Technical Audio Group +61 2 9810 5300*  
**R1** 24-bit, 96kHz Hard Disk Recorder, using 9.1G Disk Drive. System includes Fully Featured Free Standing Remote Control, AD & DA Converters. \$79,995+.

### KORG

*Musiclink +61 3 97656530*  
**D16** 16 track (plus virtual tracks), 24 bit digital recorder (no data compression!) & mixer, built in 24 bit insert & master effects, 2.1gig HD, SCSI, S/PDIF, Touchview screen. \$4,499.

### OTARI

*Amber Technology +61 2 9975 1211*  
**RADAR II** Latest generation of the acclaimed RADAR 24-track disc recorder. Adding to the original Radar's superb audio quality & ease of operation, Radar II includes 24-bit performance, 24-track recording to single removeable 9GB HDD, "48-track ready" remote and enhanced editing facilities. \$38,000.

**PD-80** 8-track random access disc

recorder using high-performance 3.5" 640MB MOD disks. Extensive editing capabilities inc. reverse play, scrolling wave forms, screen zoom, time compression/expansion & pitch shift. Compact & easy to use with full-function system controller. From \$13,990.  
**DX-5050** Portable 2-track MOD recorder using 3.5" 640MB magneto-optical discs. Features WAV. File data format for direct file exchange via SCSI. "Tape Machine" type control, No data compression, On-board editing & monitoring, Jog/Shuttle functions, instant start etc. \$6,150.  
Stand Alone Recorder" and "CD Burner

### ROLAND

*Roland Australia +61 2 9982 8266*  
**Roland VS-840EX** Digital Studio Workstation (RRP\$2795)  
Perfect for home musicians, the VS840EX is an 8-track digital recording workstation. It has built-in digital mixing, onboard effects (including amp simulation) and records to a 250MB Zip(TM) drive.  
**Roland VS-880EX** Digital Studio Workstation (RRP\$3995)  
It wasn't easy to improve on the world's most popular digital audio workstation, but Roland have done it! The completely upgraded VS-880EX has fully digital recording, editing, effects processing, mixing and optional CD mastering.

**Roland VS1680** Digital Studio Workstation (RRP\$4995)  
The VS-1680 Digital Studio Workstation represents the new definition of recording power: a 16-track (256 virtual tracks), 24-bit recording, editing, mixing and effects processing system in a compact table-top workstation.  
**VS-CDRII** Recording System includes a 20x read/4x write/2x rewrite CD recorder, CD-R software for both Macintosh and PC platforms, a SCSI cable, and blank CD-R and CD-RW disks. (RRP\$1495)

### TASCAM

*TEAC +61 3 9644 2442*  
**DA-78HR** 24-bit 8 track w/- inbuilt synchronisation for LTC and MTC. Also 16-bit compatible for playback of DA-88/38 tapes. T-DIF and analogue connections. \$5999.

**DA-98** 8 track w/- confidence monitoring facility for live recording-on-board sync. Inbuilt digital patch bay, delay and LCD control menu window. \$9999.

**MX-2424** 24-bit, 24 track hard disc recorder with on board sync facility and 9 gig hard drive. 24 ch. simultaneous record capability. \$9999.

### YAMAHA

*Yamaha Music Australia +61 3 9693 5164*  
**D24** 16, 20, and 24-bit, record and play capability at 44.1 and 48 KHz.

3.5" MO media. SCSI-II connector, Full edit facilities. Synch. to MTC, SMPTE, video sync and word clock. Control via MMC and 9-pin protocols. All digital & analog I/O options are in the following formats: ADAT, T/DIF, AES/EBU and analog I/O. 3RU. \$7,695.

## DAT MACHINES

### OTARI

*Amber Technology +61 2 9975 1211*  
**DTR-8S** Professional R-DAT recorder for broadcast & studio applications. Features AES/EBU, S/PDIF & analog I/O's, 32 / 44.1 / 48kHz sampling rates, high-speed search, heavy-duty tape transport & I/R remote control. \$2,575.

### TASCAM

*TEAC +61 3 9644 2442*  
**DA-60 MkII** 4 head fully synchronisable unit with 9-pin cont. port, instant start, AES/EBU digital I/O, fully balanced analogue connections. \$8999.  
**DA-45HR** 24-bit balanced unit w/- AES/EBU digital I/O and unbalanced connections. \$4350.  
**DA-16** 16-bit workhorse with AES/EBU and SPDIF. Digital I/O and balanced/unbalanced I/O. \$2999.  
**DA-P1** portable unit w/- balanced XLR mic ins, w/- phantom power and limiter (switchable), bak lit LCD and digital I/O. \$2999.

## MINIDISC RECORDER INCL. 4 TRACK

### DENON

*Australis Music +61 2 9698 4444*  
**Denon DNM1050** Single Mini disk player/recorder; 19" rackmount; digital input and output; program play. \$3315.  
**Denon DNM2000** Single Mini Disk player/recorder; pitch control; hot start; seamless looping; auto cue; jog wheel for search accuracy auto track increment; Program Play; Editing functions. \$2499.

**Denon DNM2300** Dual Minidisk player/recorder; 19" Rack mount; Hot start; seamless looping; speed control; pitch bend; auto cue; power on playback mode; digital in; auto level record. \$4299.

### MARANTZ PROFESSIONAL

*Technical Audio Group +61 2 9810 5300*  
**PMD650** Portable MiniDisc Field Recorder, Built-in Mic & Speaker, XLR Stereo balanced mic ins, Digital in & out, +48v Phantom, Speaker & Headphone out, auto or manual recording level. \$2,995.

### OTARI

*Amber Technology +61 2 9975 1211*  
**MR-30** Professional MiniDisc player particularly suited to broadcast applications. Features include AES/EBU &

# buyers guide:: RECORDERS & SOFTWARE

SPDIF digital + XLR & RCA analog I/O's, extensive editing, varispeed, auto cueing, instant playback and multiple playback modes. \$4,450.

## TASCAM

TEAC +61 3 9644 2442

**MD-801 MkII** fully balanced analogue - 2 digital I/O's fast speed cue external control capability. Heavy duty construction. 3U high. PS-2 keyboard in for hot-key and edit function. \$3899.

**MD-501** 2U high, heavy duty unit. Cue to music in "auto-ready" mode. Play can be triggered by foot switch for stage work etc. PS-2 keyboard in for edit function. \$2499.

**MD-301 MkII** 2U high, balanced/unbalanced, digital I/O's. Cue to music, optional remote control, PS-2 keyboard in for edit function. \$1199.

## VEST AX

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**AA88 Active Audio** includes pitch controllable CD player, minidisc recorder, FM tuner, DJ mixer and power amp, 8 ins, replaceable crossfader, 3 band EQ, 10 key direct access (CD and MD). \$3595.

## YAMAHA

Yamaha Music Australia +61 3 9693 5164

**MT400** 4 track cassette with 4 channel Mixer and 4 track simultaneous

recording. High speed cassette mechanism, dbx noise reduction, 3 band EQ, 2 channel inserts, cue mixer, 2 Aux with twin stereo Aux returns and MIDI sync capabilities. Auto punch I/O, auto-locator. \$795.

**MD4S** MiniDisc recorder using MD data format, 4 channel mixer, 3 band EQ, 2 Aux with twin stereo Aux returns, 2 Mic XLR inputs and inserts, separate stereo cue mixer with independent pan & level. FULL MIDI inc. machine control (MMC) & MTC implementation, Jog & shuttle wheel, auto punch I/O, auto-locator, non-linear recording with cue list song assembly, and fluorescent display. \$1,595.

**MD8** 8 track independent/simultaneous recording on reliable, Mixer includes: 3 band EQ with mid sweep, 2 Aux with twin stereo Aux returns, 2 Mic XLR inputs with phantom power and inserts, stereo cue mixer with independent pan & level. FULL MIDI with MMC & MTC, Jog & shuttle wheel, auto punch I/O, auto-locator, fluorescent display. \$2,495.

## CDBURNER/RECORDER

## ALESIS

Electric Factory +61 3 9480 5988

**Alesis MasterLink™ ML-9600**

High-Resolution Master Disk Recorder. Includes hard disk recording, digital signal processing, and mastering functions to create compact

discs. Writes Standard redbook-16/44.1 and CD24-24bit/96kHz CDs. \$3999.

## MARANTZ PROFESSIONAL

Technical Audio Group +61 2 9810 5300

**CDR630** CDR & CD-RW on audio or data discs. XLR Analogue in & out, AES/EBU, SPDIF, Sample Rate Converter, Digital Audio Delay & Auto Indexing from CD, DAT, DCC, MD, IR Remote. \$2,495.

**CDR640** As CDR630 with additional and controllable parameters. Wired Remote. \$4,495.

## MICROBOARDS TECHNOLOGY

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**MP3 Burner** first CDR system to let users create customised audio CDs from the internet, in less than 15 minutes. Playwrite 4420 CD ReWritable Drive (internal 4x4x20). MP3 Playwrite audio s/w for the internet. PlayWrite backup s/w, 2 x PrintWrite CDR media, more. \$995.

## OTARI

Amber Technology +61 2 9975 1211

**CDR-18** Heavy-duty professional CD recorder. Features include 1-bit A/D converters, Sample Rate Converter, ultra-stable transport mechanism, analog & digital I/O's, digital synchro record mode, digital fader, input monitoring without disc, I/R remote control etc. \$3,990.

**CDP-50** Compact, self-contained CD duplication system for "set & forget" duplication of up to 50 discs @ 4X speed. Auto-detect of multiple masters within batch with fast, simple operation. Suitable for almost all CD-R formats. \$12,900.

## TASCAM

TEAC +61 3 9644 2442

**CDR W5000** writer and re-write capability, fully balanced - 3 digit I/O types, remote standard, data and music disc compatible. \$2699.

**CDD4000** Cd-duplicator for perfect copies of data or music. CDR at x-4, x-2 or x-1 speed. \$2799.

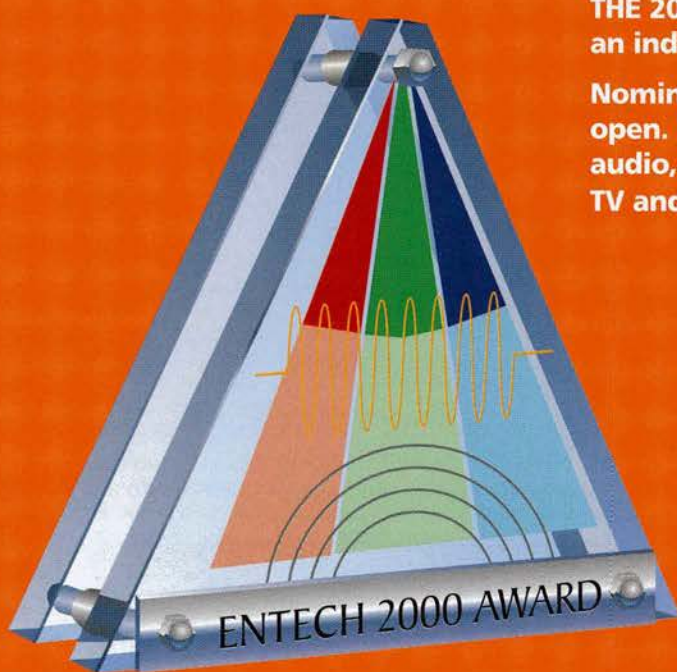
**CDR W700** low cost CDR, music media only unit, rack mounting, SPDIF and Optical digital I/O. 24-bit A/D and D/A and standard remote control. Available Jan 2000. \$1199.

## YAMAHA

Yamaha Music Australia +61 3 9693 5164

**CDR1000** Compatible with CD-R and CD-RW media. Features UV22 encoding by Apogee Electronics, sample rate converter, input buffer, SCMS copy management, synchronised recording. Connections include balanced XLR input & output (-10dB/+4 dB switchable), AES/EBU digital input & output, SPDIF input & output PLUS WORD CLOCK INPUT Parallel I/O port. Fluoro display. \$3,695.

# call for nominations



THE 2000 ENTECH AWARDS will be delivered at an industry dinner on Monday March 6th.

Nominations for technical brilliance are now open. The Awards cover technical brilliance in audio, lighting and AV - for stage or studio, live, TV and film.

### Who do you admire?

Include comments on which projects they have completed or worked on, and WHY they are worthy of an award. Please also suggest a suitable award category. Do it now!

Product nominations: call us for a submission form.

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# L I V E

## PRODUCTION REPORTS



# ELVIS THE CONCERT

*The star might be dead but the show goes on*

**H**e is the perfect star. No problematic ego, no troublesome rider, no criticism and you could pop him in your suitcase. Elvis may be dead but he's certainly not forgotten.

*Elvis: The Concert* is certainly a unique production and most of the crew admit that when they first heard of the idea it sounded a bit odd. But it does work and you almost believe that The King is amongst us.

The footage comes mainly from two concerts Elvis did in the 60's and 70's, one in Hawaii and one in Vegas. The older one is easy to spot due to the poorer quality of the video footage. Most of his original band members and backing singers from that period play live to his isolated voice.

The concert reinforces just how powerful the video component of a concert has become. At any given concert, watching the performers 'live' on a giant video screen has become the norm and most of spend a high percentage of the concert time doing just so. So why not cut out the actual performer? Hey, at least the concert finishes at exactly the same time every night.

In charge of supplying and installing the video system were Big Picture Australia who were approached by the promoter Kevin Jacobsen. Big Picture Australia then contracted Clipsal Vision to

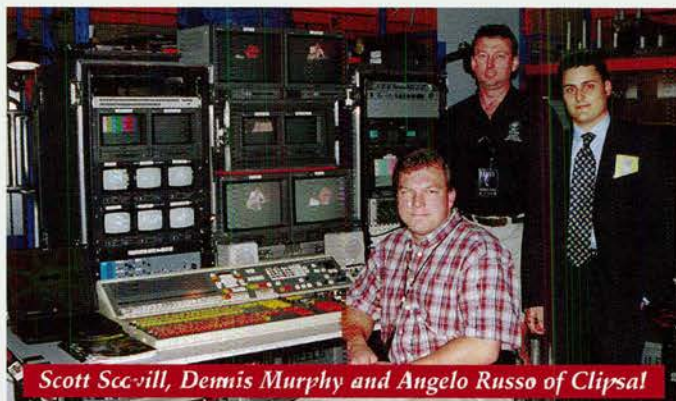
supply the three LED screens which comprised of a centre screen, 4 panels wide and 7 panels high, which amounted to an overall size of 5.12m wide and 6.72m high. The two side screens were 3.84m wide and 2.88m high. All up there was about 57m<sup>2</sup> of LED screen technology giving a total of 141,312 pixels and 1 050 624 LED's.

Video Director for the show was Scott Scovill who said that the footage was chosen because it had isolated vocal tracks and

multiple camera angles allowing Elvis to always be on the middle screen by cutting the shots. All the band and singers on stage have their own monitors so they can watch the video tape as if they were watching the man himself. When Elvis motions them to go, off they start.

"Once we've launched Elvis on the big screen, the band follows

*continued over*



*Scott Scovill, Demis Murphy and Angelo Russo of Clipsal*

Photos: Cat Forcer

**STOP PRESS: ...YAMAHA PM1D DIGITAL MIXING CONSOLE**  
Tel: 1800 805 413

## ELVIS THE CONCERT

continued from previous page

him and we don't have to worry about him any more," said Scott. "The challenge for us is to cut a live show on the two smaller screens. We look for a secondary image and really bounce around. It takes a lot of work to make it flow, normally you'd stay on the main artist. There are several moments on the tape where we don't have a shot of Elvis because they've cut to a band member. We write down the time code and try cut to that same member of the band, from the same angle but over twenty years later. It's a neat effect."

Big Picture Australia supplied all the video production elements including control and signal distribution.

"Clipsal have supplied a screen technician and we've appointed two of our guys to run the logistics of getting the screens in place and running," said Dennis Murphy of Big Picture Australia.

The tour spec was for a Grass Valley GVG200 with multiple outputs assignable to screens.

"You can set up 'mixer states' which will assign different inputs to different outputs and they're all recalled by what's called an Emem, a mixer state recall function," said Dennis. A Sony BVS3100 switcher is used as a back up to the main switcher.

There are two BVW70 and BVW75 beta cam players which play the main Elvis tapes, the machines are timecode locked together so one is acting as a standby to the other. A third beta cam player, a UVW1800, plays overlap material for several cues in the show. All the machine outputs are fed to a Yamaha O3D digital mixer which has 3 presets set up on it - the main machine, backup machine or a mute. Three Sony D30 cameras are used, two hand held operated on stage and one operated with a 44:1 lens from FOH. Two Sony XC999 miniature cameras are on the drum kits.

"The main thing with this production is that the video is the key element of the show," said Dennis. "We're backing up everything and touring lots of spares. Without the video, there's no show."

"The screen happens to be very bright, it has ten settings and they run it at one in here," said lighting director Greg Hamm. "It's an outdoor screen which can handle daylight so I can't do much to damage it! We started out with rear projection and I had to be very careful focussing the lights making sure no ambient light hit the screens. Now I have a lot more latitude as to how bright to light everyone and to make it easier for the Video Director to pick up the band members."

Greg was using an old fashioned par rig with ACL's, a few lekos and profiles. A few Dataflash give effect.

"We started out with Cyberlight and Studio Color moving lights but at one gig we couldn't get the gear there and had to use only pars," explained Greg. "The producer liked what I did so much we kept it. It makes the show more of what it was back then. It also helps out budget wise. For me, it makes my day longer because there's so much more to focus."

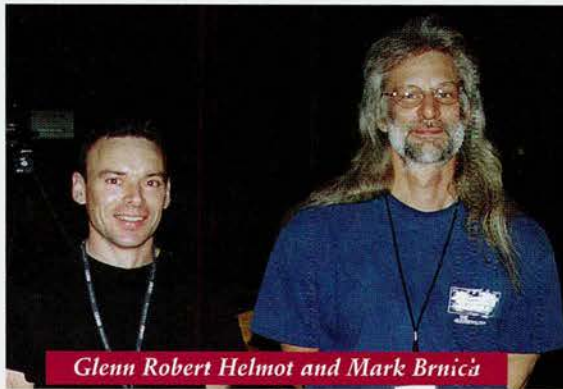
Control was a slightly antiquated Celco Gold 90 which Greg was happy with as he only had a



day to programme and he knows the desk well. Lighting gear was supplied by Bytecraft.

The audio contract went to Melbourne-based Oceania who supplied FOH engineer Mark Brnich with a Turbosound Flashlight/Floodlight system.

"It's a standard left to right PA consisting of 12 flown Flashlight and 4 flown Floodlight in total," said Glenn Robert Helmot, sound crew chief and system engineer. "On the ground there are 12 low bass Flashlight speakers. There are also 6 of Oceania's own T12 mid/high cabinets for fill across the front. FOH desk is a Midas XL4 and there are 3 Yamaha O1V digital consoles to mix down things like a second drum kit, effects, choir and



strings.

A new digital speaker management system, the FDS366 Omnidrive Compact Plus by BSS, was used to run the Turbosound Flashlight. The next generation of the Omnidrive Compact, it has 96 kHz sampling rate and 24 bit converters, 3 inputs (plus stereo digital AES/EBU) and 6 outputs plus over 112dB of dynamic range.

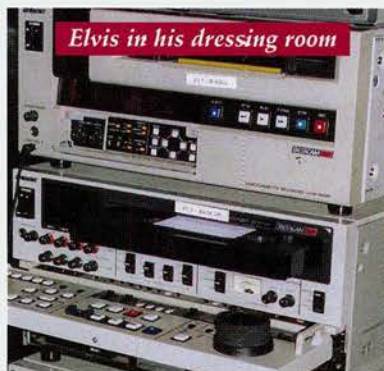
"It's a great piece of kit that has definitely given new life to the sound of the Flashlight system," said Glenn. "We've also got a new Midas Heritage 3000 console for monitors which goes onto a theatre show after this - it's a very versatile desk."

Monitor speakers were 16 Oceania M12 SLP wedges.

Although FOH engineer Mark does not have a live star to deal with there are plenty of other people on the stage. Most of the recordings from older artists are not good enough to use in this

kind of environment but Elvis had plenty of accessible, high quality footage.

"There are two video tapes which run simultaneously, the main and the back up which are run through a digital mixer with presets so if anything happens to one deck, we can immediately switch to the second," said Mark. "The only audio which is on that tape and used during the show is Elvis' voice. There are three other tracks for the band to listen too - the original music from the shows, and two click tracks which were added later. These assist the band in following cues during the show."



FOH effects included an Eventide H3000 D/SX ultra harmonizer, a t.c.electronics M5000 dual engine reverb processor, 2 Yamaha SPX990, 1 SPX900, 1 SPX1000 effects processors, 1 Summit Audio DCL200 dual channel valve compressor, 3 Behringer Composer Pro MDX2200 dual channel dynamics processor, 3 BSS DPR402 dual channel compressor limiters, 1 BSS DPR404 dual channel compressor de-essers and 4 Drawmer DS201 dual channel noise gates.

"It's a busy show for me due to the large number of people on stage and the hardest part is trying to decide who's important at any one time because it can get real thick and cluttered if you're not careful," said Mark. "Elvis' vocal is running through a

Varicurve and I have individual curves programmed in for each song. Most of the original source tapes are very thin sounding, so I have to generate some bottom end fullness and get rid of the bite."

Microphones was a mixed bag of Shure UHF, Shure, AKG, Beyer, Octava, Sennheiser, and Countryman.

As the show progressed the audience were swept away into the make-believe Elvis show with many rushing to the front



LD Greg Hamm

Monitor Engineer Christopher Bex with Oceania's new Midas Heritage 3000 console



to dance. Apparently it is not unknown for knickers to be thrown at the screen. With the immortal words 'Elvis has left the building' the show finished.

● Cat Forcer

**Lighting Director** Greg Hamm **Road Manager** Carraen Rodriguez  
**Stage Technician** Brent Jeffers **Stage Manager** Terry Cooley  
**Rigger** Thomas Lyster **Video Director** Scott Scovel **FOH Sound Engineer** Mark Brnich **Monitors** Christopher Bex **Local Tour Manager** Wayne Jarvis **Lighting Crew Chief** Sean 'Motley' Hezzitt **Lighting Crew** Glen Crhiston, Mat Burden **Sound Crew Chief** Glen Helmut **Sound System Engineer** Greg Thomson **Mons/PA Rigger** Richard Robinson **Video Crew Chief** Dennis Murphy **Camera/Screen Operators** Joe Bonaanno, David Hendy, Paul Woofe **Screen Technician** Nathan Van De Ven

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Steve Wickham faced a series of challenges in lighting Oz Opera's production of *Orlando* for the Melbourne Festival. The first challenge was the venue, Shed 14 at Victoria Dock – a cavernous freight shed more suited to rave parties than operas. Add to that a minimal budget, an apocalyptic interpretation, indoor weather and a bright green set, and you get an idea of the obstacles involved.

Director Lindy Hume's vision for the opera was a desolate wasteland reminiscent of the ruins of a contemporary war zone. Drawing on images of the devastated Kosovo landscape, Set designer Dan Potra expanded on the idea by creating a world of junk, littered with car wrecks and an aeroplane.



# Orlando

*a challenging opera*

At the beginning of Act 1 the multi-levelled set is only a hint of mountainous bright green shapes shrouded beneath white snow cloths. In the centre of the space an old Holden is half submerged in a lake, and on stage right, a real tree suggests some form of life among the ruins. Throughout the opera the set is slowly revealed as the cloths are drawn back and the space is transformed.

Steve started work on his design soon after initial discussions.

"Lindy gave me an idea of the feel she wanted. I told her that I wanted to light it with strong light sources. In the end I just had to do it and show her what I'd come up with."

Concerned about the availability of lighting equipment during the Melbourne Festival, Steve decided on his hire list early rather than waiting on the finished set design to determine his lighting needs.

"I designed a rig that had most of the equipment on the floor so it was accessible, and then I decided to choose a list of equipment and push the budget as far as I possibly could with the best equipment that I could think of that I was interested in using. So I'd booked all the equipment before the set model was even made. I gave myself that equipment to work with, and that

was my limitation from then on. I charged a few very minor things towards the end but the bulk of the equipment was what I decided to use."

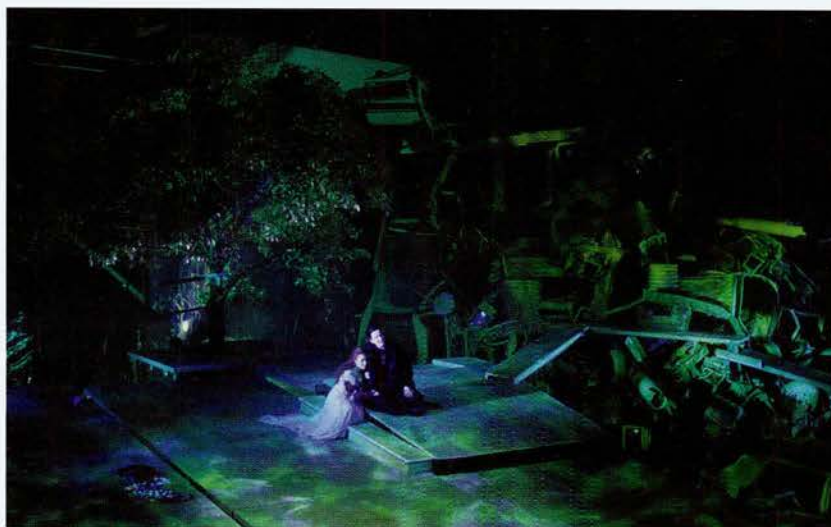
In addition to Source 4 profiles, par cans, PC's and birdies, Steve chose big lamps with strong light sources including a 4k FMI, eight banks of 9 lamp Swovodas, and a Beamlight - all supplied by Bytecraft.

"I wanted it to be really cold and very dramatic, but also very simple. If I could light a scene with one lamp, that would be the ultimate, and that was my approach."

Steve made good use of the eight Swovoda units by placing them horizontally and vertically in strategic positions so they could do most of the work.

"Swovodas are a fantastic lamp that are really designed as a light curtain. They're very common in Europe but quite rare here. Some of the bigger shows that have come through have requested them so Bytecraft had some in stock. They have nine 24v lamps in series and they're designed to bolt together to be flown in rows. I just love the light that comes out of them, you can't compare it to anything. If you put nine ACL's together in a bank it's just not the

*continued over*



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# Orlando

continued from previous page

same. So I knew they'd be a great lightsource.

"The Swovodas do most of the work in the first Act, and I deliberately used them at very harsh levels and got a really strong contrast, and then coloured them deeply and used them in Act 2 with more magical colours so that they weren't harsh at all. The HMI was used the same way, because it's such a great lightsource, one unit lights the whole stage and there's enough bounce off the floor to do the rest. And it worked really well with the snow effects."

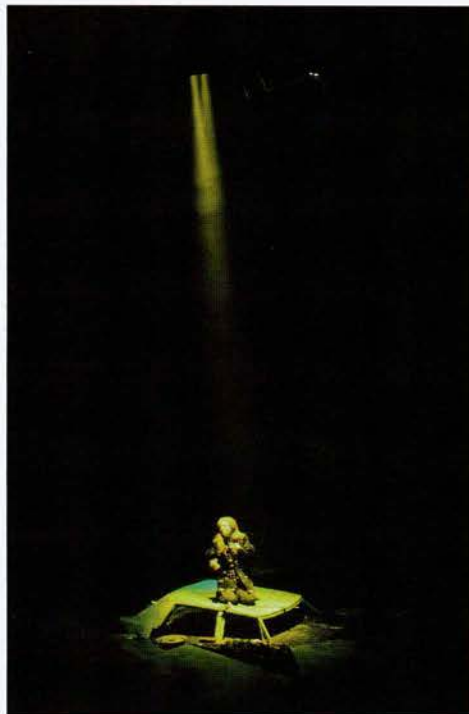
In addition to lighting effects, special effects featured heavily in *Orlando* including lots of flame, water, snow and rain storms, and thunder and lightning. For the lighting effects, Steve used strobos, six cloud projectors as well as dry ice, two oil crackers and a smoke machine. A Strand 530 was chosen as the control console so that Steve could have two effects programmed into the same cue.

"Act 1 is very much in the desolated war zone, a bleak landscape, and then in total contrast Act 2 is magical and mysterious with tree projections and foliage and a 2.8 tonne real tree. In the third act it's a return to the feel of the desolation in the first Act.

"With the first and third Acts choice of colour wasn't too much of a problem because I always knew it was either going to be open white or a very cold blue, but

Act 2 was a challenge because we wanted this wooded forest effect, so I was careful to choose colours that worked with the green set.

"I also did a UV wash over the whole set which just pulled out all the blue elements in it, and that's virtually on for the whole of Act 2. We start it off with just the UV and it looks quite dead and mysterious. As the music starts the gobos come on and the tree lights up from underneath and there's this sense of



## SHOWS WE'VE SEEN LATELY

### A Punter's Perspective

#### NIGHTFALL



Joanna Murray-Smith is without doubt one of Australia's most acclaimed contemporary playwrights. Her recent successful Broadway season of *Honour* has translated into huge ticket sales for the world premiere of her newest drama *Nightfall*. *Nightfall* is the final production in the Playbox 99 season at the Malthouse before moving to GPAC in December, and then as an STC production at the Wharf next April.

At the beginning of the play a wealthy looking couple in their fifties pace anxiously around the tiny acting space which represents their home.

A square of carpet with simple elegant furniture is their boundary. At the front of the stage is a rose arbour and along the back of the stage a painted garden wall above which the tops of neighbouring trees stand against the darkening early evening sky. The couple have received a phone call from their daughter who disappeared seven years earlier to tell them she will be home before nightfall. When the doorbell finally rings however it is not their daughter on the doorstep but a mediator who must make the parents face up to some ugly truths before their daughter will see them.

A twist in the plot sparks denial and then finger pointing between the parents, but leaves the audience to draw their own conclusion about what prompted the 16 year old girl run away from home.

Victoria Longley is brilliant as the mediator 'Kate'. Margaret Cameron and Ian Scott are similarly powerful as the tense parents of the missing girl.

*Nightfall* is a complex script and under Jenny Kemp's direction is moving and suspenseful. At times the clipped delivery of the dialogue is frustrating but it is 'as written' in the script so you can't do much about that.

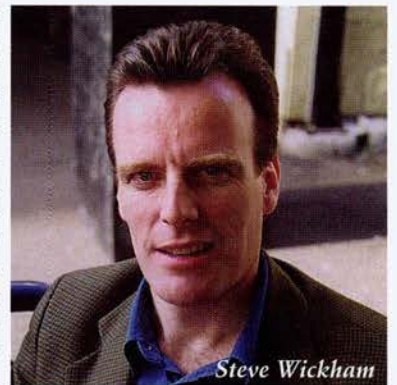
Rachel Burke's lighting design is cleverly subtle with one of the best crossfading sunsets I've ever seen replicated on stage.

*Nightfall* is a bit like *Waiting for Godot* - two people anticipate the arrival of someone who will shed light on their existence, but instead a messenger arrives. At least at the end of *Nightfall* it looks as though the wait will result in an arrival.

● Mandy Jones

nature in this horrible war zone. And then it gets scarier - it gets darker and dingier and then there's the big storm with the clouds and the lightning strobos, so I didn't spend as much time agonising over colour on this show as I normally do. I concentrated on getting big sources of light coming from different directions, and making it very adaptable."

● Mandy Jones



Steve Wickham

Lighting Design Steve Wickham Head Electrician Iain Anderson Operator Caris King Lighting supplier Bytecraft

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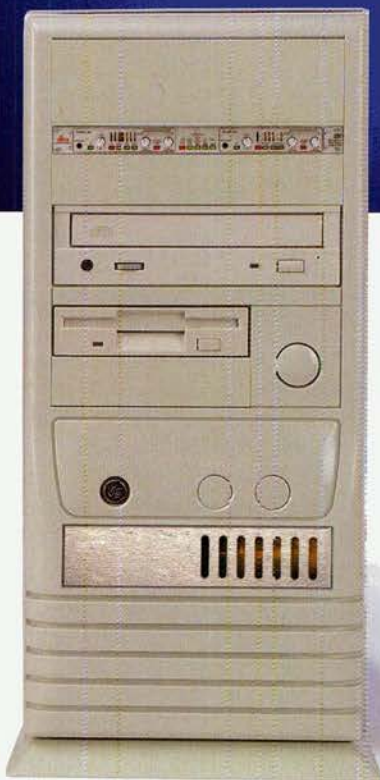
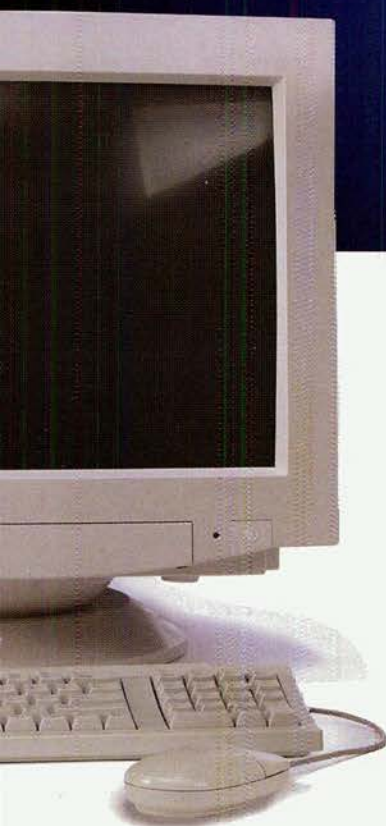
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# ATMOSPHERIC AUDIO

by Adam Luston, sound designer for *The Hobbit*

In a mystical forest a plan is hatched by some bizarre little creatures. A gang of dwarfs have decided that they want their stolen treasure back and they've asked a wizard and a hobbit to help them.

That shouldn't be too difficult. Just venture through a few forests, some caves and tunnels and it's into that mountain...oh, did I forget to mention the dragon who lives in the mountain? He sits on the treasure and guards it. And by the way, the forest can get a little dangerous - just ignore the goblins, trolls and huge spiders trying to eat you and I'm sure you'll be okay.

Get the general idea? A fair bit of scope for a sound design.

The Hobbit is one of those shows that benefits from technical trickery to accentuate the audience's suspension of dis-



belief. From a sound point of view the most effective way to do this is with an atmospheric soundscape (in this case composed by Alan Zavod) and a sound design (by Adam Luston of Coda Audio) that recreates the necessary environments and effects. Surround sound is used to alter the audio image so the audience feel as though they are actually in these environments with the characters, the panting of a goblin from behind you or the crazed scream of the nasty little creature Gollum swirling around you can be very effective in stirring an audience's reaction. Fourteen channels of Shure U4-1D radio microphones, with DPA4061 capsules, are used to reinforce the dialogue which is performed by the puppeteers. The show is heavy on effects - pitch shifting, delays, reverb and surround panning are utilised extensively throughout the show to create the desired environments. With 14 radios and all those effects *The Hobbit* can be a very busy show which is

why we opted for automation to assist the operator (the talented Suzanne Jones) in maintaining consistency.

The vocals are mixed on a Soundcraft 24 channel console and then sent to a Yamaha 03D digital desk for processing. All effects, surround panning, signal routing and automation is performed on the 03D.

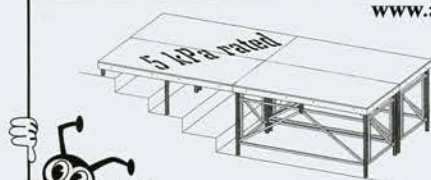
The sound system is in 5 channel surround. The speaker system consists of Meyer MSL-2's, Meyer USW-1's, Meyer UPA-1's and Martin Audio EM15's. Gear supplied by Coda Audio.

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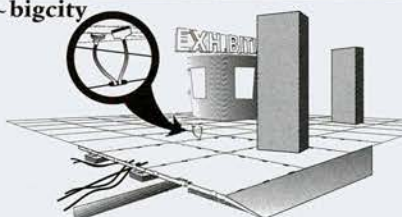
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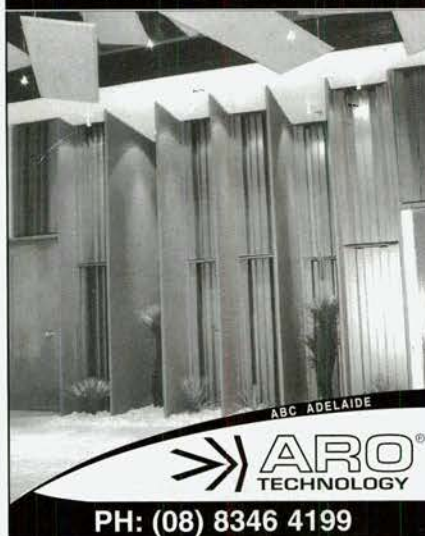
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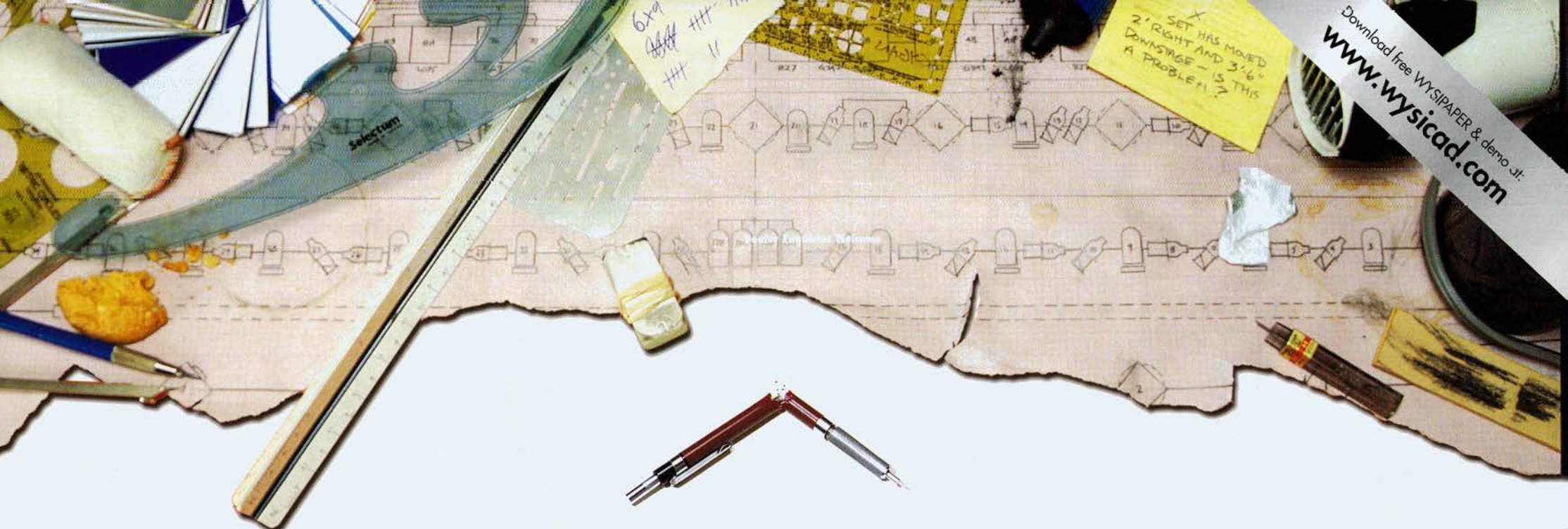
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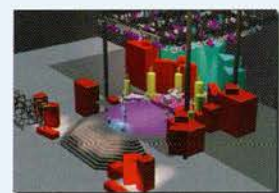


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5	1	1' x 1' PAR 64	15.00	15.00

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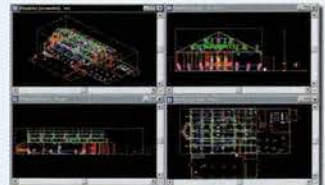
Real Time Softedge Simulation

ID	Item	Qty	Unit Price	Total Price
101	10' x 10' PAR 64	10	1.50	15.00
102	5' x 5' PAR 64	5	3.00	15.00
103	2' x 2' PAR 64	2	7.50	15.00
104	1' x 1' PAR 64	1	15.00	15.00

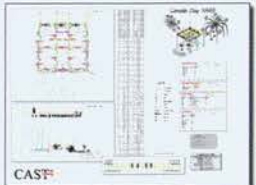
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# LIGHTING

EDITED BY CATRIONA FORCER

Vari-Lite's Ken Matthews with the VL2201 and VL2400



## Vari-Lite now selling through Jands The two Jands now handle Vari-Lite

Vari-Lite unveiled its long-awaited line of first-ever direct sales products at LDI where several new Vari-Lite luminaire models were demonstrated.

The VL2400 Series wash luminaires and the VL2201 spot luminaire, scheduled for availability next year, are automated lighting products targeted specifically for clients seeking permanent installations from Vari-Lite.

The VL2400 Series wash luminaire is based on the design of the VL5 family of wash luminaires. Vari-Lite plans six configurations of the VL2400 Series wash luminaire, each with either collimated beam or beam spreader options. Sources include 1200W and 1000W incandescent or 1200W and 525W arc versions with smooth-timed crossfades and faster colour changes. The incandescent versions feature integral SCR Dimmers while the arc versions include power factor corrected integral power supplies. All models include user-programmable dimmer curves.

The compact and lightweight VL2201 spot luminaire is based on Vari-Lite's VL6B spot luminaire, with 3:1 zoom optics, and rotating gobos.

*continued on page 82*

## MiniMACs Debut at LDI '99

Martin come up with a winner



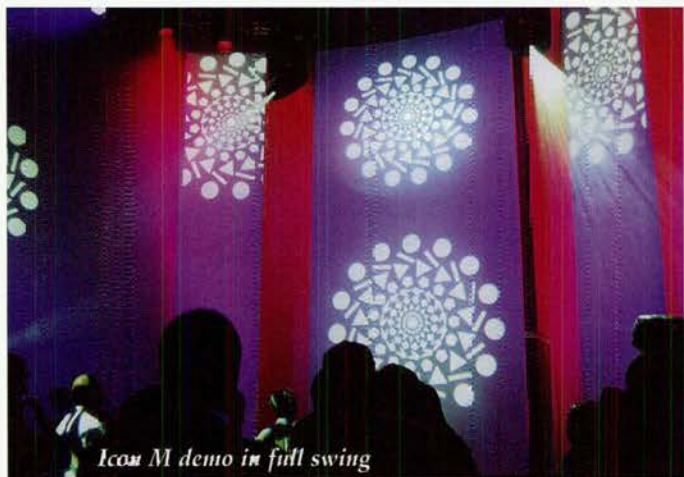
Pio Nahum and friends at Martin 'Living Light' launch

The night before LDI began, Martin held a lavish launch for their new line of MAC moving head luminaires - the MiniMAC 'is anyone else thinking Austin Powers?'. They also introduced a new slogan for their indoor and outdoor architectural range called *Living Light* with the butterfly as a symbol.

The two new products - MiniMAC Wash and MiniMAC Profile - were very well received. Aimed primarily at the retail market, the fixtures would also fit into clubs, restaurants, theme bars and corporate launches.

The MiniMAC Profile spot features 12 rich colours, 7 rotating gobos, replaceable projection patterns, strobe and a 170 focused beam angle. The MiniMAC Wash is an all-purpose fresnel colour changer featuring 12 colours, strobe and a 23° field angle. Both fixtures have 540° of horizontal pan and 270° of vertical tilt. A 150W metal halide lamp is used.

*continued on page 83*



Icon M demo in full swing

## ICON M demo wows LDI '99 attendees

Amongst the leading lighting designers and programmers present when LSD unveiled its exciting and insightful debut demonstration of the Icon M were Bruce Ramus and Willie Williams, of U2 and R.E.M. touring fame.

Selcom has a lighting system demonstrated such high excitement and the looks of astonishment on the faces of even the most hardened members of the industry suggested that this will be the most in-demand product on the road as soon as it becomes available in what is expected to be the second quarter of 2000.

*continued on page 82*

## Vari-Lite now selling through Jands The two Jands now handle Vari-Lite

continued from page 81

Both the VL2400 Series wash luminaires and the VL2201 spot luminaire are operable through the VARI\*LITE Virtuoso control consoles, as well as DMX-512 standard protocol consoles. Each features resident lamp power supplies and associated electronics within the luminaire, with virtually silent operation ideal for use in theatres, churches and television productions.

In the US the spot luminaire is listed at US\$6500 and the wash luminaires vary from US\$5000-\$5625. The largest wash luminaire, the 1200W, which Vari-Lite believe will be the most popular, is US\$7500 with the beam spreader and US\$6875 without it.

"We think we've really competitively priced our luminaires and they're of great value," said Ken. "

Expect to see the new Vari\*Lites at ENTECH 2000.

## DUAL JANDS DUEL

### High End, Clay Paky and Martin can expect trouble from VL in AU

While Vari-Lite are treading cautiously in their home markets of the Northern Hemisphere, these new fixtures can be purchased by virtually anyone in Australia, says Jands Electronics CEO Paul Mulholland.

Until now Vari-Lite have only rented their moving light product, and they have planned to somehow restrict sales of these new lines to installation markets in the US and Europe where they already have a Vari-Lite presence.

But Australia is the one market left where Vari-Lite don't own their distributor- Vari-Lite Australia is a subsidiary of Jands Production Services - the 'other' Jands, who contract with Vari-Lite to rent their gear here. And the two Jands operations are run almost totally separately, albeit from the same address. While both Jands operations are jointly owned by the Robinson and Mulholland families, each is tightly run by one family. Indeed, a security wall runs the width of the huge, custom designed facility in Sydney's Mascot. The two Jands operations are totally and utterly different in management style and outlook, and may as well be in different cities.

Australia is a unique market - where else would arch competitors Martin and Clay Paky be handled by the same distributor - Show Technology? As Jands Electronics has always sold equipment to bitter competitors of Jands Production Services, expect more of the same with these new Vari-Lite's.

It'll be an interesting ENTECH!

By Julius Grafton

## MY FAVOURITE GEL COLOUR

### RICHARD STUART

currently trapped in QPAT office with a busy production schedule



"I'm going to have to be old fashioned and say Strand Cinemoid 8 which really reflects my age. It's no longer available and no one has come up with an equivalent. It's a deep rich salmon which is particularly good for operas - when mixed with deep blues it brings out the richness in heavy, period costumes."

## ICON M demo wows attendees

continued from page 84



Durham Ritchie of Bytecraft, Nick Jackson of LSD, Stephen Found of Eytecraft and Tom Murch of LSD with an Icon M.

Mark Cunningham asked Bruce Ramus what was going through his mind as he witnessed this demo.

"Just the possibilities of it," replied Bruce. "The Icon is something that people have been using for certain kinds of gobo effects, but the Icon M will take that into a whole new sphere. It has some really interesting capabilities in terms of the huge digital gobo catalogue. What was really going through my mind was that I think that every awards show for the next 10 years will look like this! How we develop that for what we do remains to be seen.

Asked whether it'll be easier to achieve certain effects, Bruce replied: "I suppose that if you can project one image and allow it to develop and do its work, like setting up a big cyc look that is forever moving and changing, I think it could be really nice, and maybe it will be easier to program by just hitting a button and suddenly get this massive effect as opposed to going through laborious step chases.

"I saw it back in Birmingham about 18 months ago when it was just an anonymous black box, and I've been very interested in its development ever since. I think it is going to add a completely new dimension to lighting design and it is very exciting."

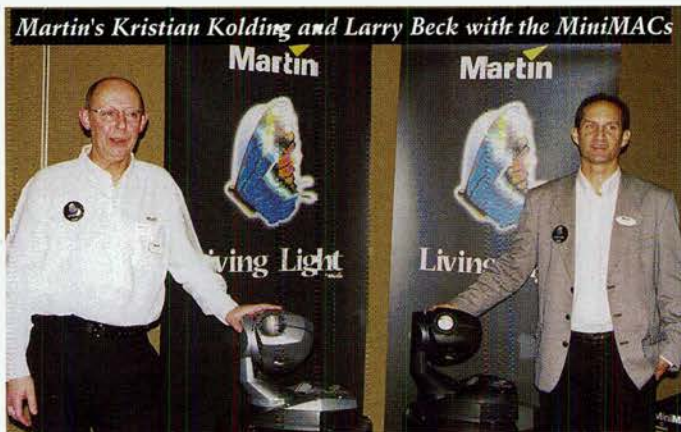
LSD's Dave Keighley responded to concerns about heat and brightness: "These are still only pre-production units. Our benchmark is to make it at least as bright as the Icon and that is what we are currently working on so that when the production units come out in the spring they will have the level of brightness we are looking for. It's an ongoing process and although we've built these pre-production units, the R&D team are hard at work to get it up to the desired specifications. We are hoping that rental stock will be ready by late April or early May, although these things do have a habit of slipping."

## Pranksters were at it....



# MiniMACs Debut at LDI '99

continued from page 81



A demonstration on how easily the fixtures open up was very impressive, no screws are involved.

The MiniMac's are ready for shipment now and come in either black or a rather sexy titanium colour casing. Martin aim to have a MiniMAC Promo Projector on the market next year.

The MiniMAC won the LDI '99 Best Architectural Light Award.

Due for an early Spring introduction, the new MAC 630 NT is a fresnel moving head luminaire with a newly-developed linear CMY colour mixing system. This, together with a motorised colour wheel with interchangeable colour slots and stepless colour temperature correction means the luminaire lies outside the court injunctions currently in place say Martin. The fixture also features a beam shaping filter and a variable frost filter for zoom effect.



Putting on a brave face Martin Group CEO Kristian Kolding said that Martin Professional would maintain its presence in the American market place during the injunction period and that they were hopeful of a positive decision on their appeal which will not be heard until July 2000.

Martin also launched the MX-4 at LDI which has the same attractive look as the MX-1 but features a 150 watt discharge lamp rather than a halogen lamp. This makes the scanner appropriate for larger disco and club environments.



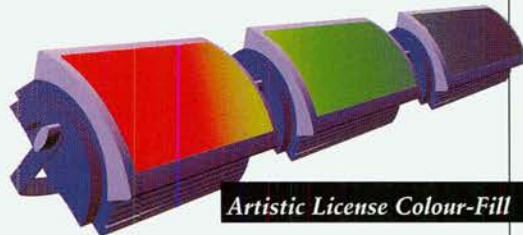
MX-4

It also houses separate colour and gobo wheels (MX-1 houses a combined wheel). The colour wheel features 15 rich colours, 2 split colours plus white while the gobo wheel contains 20 gobo patterns including open. A fast shutter for strobe effect possibilities has also been added. Australian Distributor: Martin Professional Lighting Australia +61 2 9898 1111.

# LED WARS

Color Kinetics Follow Patent Allowance with Writs

In true American style, Color Kinetics the hot US company that have produced some amazing LED colour changing products in the last couple of years, had their lawyer serve writs on three companies showing at LDI '99.



"Prior to LDI '99, Color Kinetics received notice of allowance from the US Patent and Trademark Office for our Chromacore technology patent, which covers networkable control of LED-based color-changing lighting fixtures," said George Mueller, president and CEO of Color Kinetics.

The 'brains' behind Color Kinetics' line of digital colour-changing lights, Chromacore uses microprocessor-controlled red, green and blue LEDs (light emitting diodes) to generate over 16.7 million colors and a variety of colour-changing lighting effects.

"The news there is that we have received this notice, and that we will be actively defending our intellectual property" emphasised George.

The company immediately issued a 'cease and desist' writ on Artistic Licence for their Colour-Fill (p.92), Avolites for their Borealis and TIR for their 408 LED Color Change Luminaire (p.93).

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## SELECON STEP INTO THE ARCHITECTURAL/DISPLAY MARKET

Joint venture with Inlite promptly receives an award nomination

**S**elecon managed to produce an attractive stand at LDI despite their custom-designed stand being held at customs in Miami. Within eight hours they had constructed a replacement.

Selecon announced a new joint venture with Tony Milne of Sydney-based Inlite Lighting to form Aureol, a new brand dedicated to the worldwide commercial, architectural and display lighting market.

"For many years we have been a player in the specialised display lighting market," said Jeremy Collins, Selecon's MD. "Last year we



The Aureol fixtures

decided we had to either get out or invest further in this growth market. The challenge for us is to present our products to the wider commercial lighting market in a manner

with which they are comfortable and understand. Which is where Tony Milne came in. "The focus of the new company is very specific, to develop lighting products which are being demanded by the specialist display, and commercial lighting markets that draw on the design and manufacturing skills of Selecon."

The first range of products which are being released this month are the Aureol Spot, and Beam Shaper or profile.

The Aureol spot provides for the use of colour glass filters, diffusers, barndoors, and snoots. The design is timeless rather than "trendy" a result of a significant investment in pressure die cast and moulding tools.

The Beam Shaper is a lens system that simply slides into the spot providing the facility to accurately shape the beam or project patterns. With a zoom range of 25 - 50 degrees, shaping shutters, and integral holder for steel or glass patterns the beam shaper adds versatility to the tools that make up the Aureol range.

The Aureol products were nominated for an ESTA Equipment Award at LDI '99.

Shown for the first time at LDI '99 was Selecon's new Pacific Super Wide fixture, which provides a profile beam of 90 degrees. Wider than a fresnel, it can be shaped with the four shutters or project patterns for a 'wallpaper' or 'textured' light effect. At only 18 inches long, the PAC 90 can be mounted unobtrusively in restricted places. The choice of light sources includes 575W, 750W, 1000W tungsten halogen, 150W Mastercolor and 575W MSR.

Also on display was a joint venture with Angstrom Stage Lighting - the Finelite Scrolling Image Projector. Using Pacific lamp housing from Selecon, the Finelite can project colour images produced from any standard inkjet or laser printer. The unit offers a fixed image plate, a scrolling image module which can accommodate over 24 4"x4" frames and a double rotating image module is also available. Three zoom lenses are also available enabling images to be varied from 12-90°.

Call: Selecon +64 9 360 1718.

## new products::

### TRIGGER CLAMP

The Trigger Clamp from Doughty is constructed from high tensile aluminium extrusion making it not only lightweight but extra strong, with a safe working load of 200Kg. Designed to allow one person to hang heavy luminaires and scanners, the weight of the object being hung, becomes its own safety factor by automatically closing the trigger and the bottom half of the clamp. This feature allows the luminaires to be easily positioned and securely 'locked off' using the large tee handle.



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### SUPERSOL UFS-2000A

The Supersol UFS-2000A follow spot light from Ushio delivers an amazing 2,350 Lux at 60 metres. The colour of xenon light is very close to natural day light, enabling ideal colour rendering in stagelight application. The follow spot light offers flickerless performance even under acute tilting angle operation or in a T.V studio environment. Elaborately designed, the energy-saving follow spot light allows for absolute ease of handling and operation, and provides a quick stabilisation time (Once the correct optical alignment has been accomplished there is no need for optical adjustment).

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### CLAY PAKY WATER COLUMN

Easy to install and position, the Water Column uses very little energy to produce thousands of rising bubbles with a background of eight changing colours. It is completely automatic once switched on and can be used as an attraction for any public venue or point of sale. Price is \$1399 inc tax.

Call Show Technology +61 2 9898 1111.



### INFINITY NEW RELEASES

December sees the release of new products in ULA's popular Infinity effects range. These include discharge models of the Leo mini scanner and Scimitar barrel effect - both utilising the 6000 hour HQI150. Also on release is the Infinity Gyro Gobo, rotating mirror with colour/gobos, which is DMX and sound-to-light controllable.

ULA have announced two new Easy Controllers for the Inflection intelligent light which allow accessing of basic pre-programmes - ideal for smaller venues where simplicity is required.

Ready Made DMX cables with 5 pin XLR fitted are now available in 3m & 5m lengths.

Contact ULA 1800-648-111 free phone.

### NAVIGATOR HIRE TRACK ECLIPSE

Navigator Systems Ltd are contributing their experience and expertise to the Millennium Dome Project in Greenwich, London by providing the New Millennium Experience Company with their number one best selling rental management software, HireTrack Eclipse.

The Millennium Dome selected HireTrack Eclipse to continually track all of the lighting and Flying Systems equipment as well as keep track of equipment rented out to temporary exhibits, and record information when the very strict safety testing and inspection procedures are carried out.

To aid with the rigorous inspection requirements, Navigator Systems Ltd wrote a custom interface for HireTrack Eclipse to allow the specification of customised inspections for individual pieces of equipment to take place. In use, the testing requirements for an area are uploaded into the Symbol SPT1500 bar code readers - a customised version of the popular Palm Pilot hand held computer. This allows the user to scan a piece of equipment and then be taken through the inspections, tests and maintenance that are required on that day. The test results are then uploaded back into HireTrack Eclipse at the end of the session. This ensures that all the equipment in use at the Dome has been checked and is both safe and functions correctly.

For information on their Australian Programme for Entech 2000, visit their web site at [www.navigator.co.uk/aus.htm](http://www.navigator.co.uk/aus.htm)

# VARYSCAN » 6 « 575 HMI

## Moving Head Projector



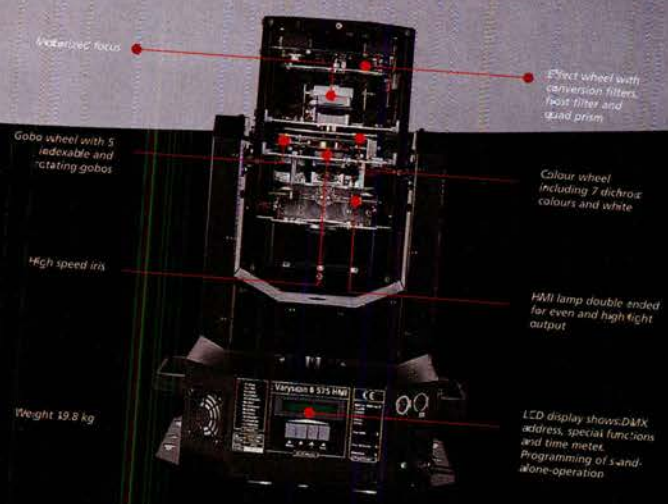
The new Varyscan » 6 « moving head projector combines a compact size with a versatile gobo and effects section. Its precise movement, a powerful consistent illumination and last not least a very fair price makes this projector a real highlight on every stage.

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Weight 19.8 kg

LCD display shows DMX address, special functions and time meter. Programming of stand-alone operation

It would have had to have been one of the most unusual jobs I have ever been asked to light. A dinner party and performance 250 metres underground on the Machine Floor of the Tumut 2 (T2) Underground Power Station. That was unique in itself, but added to it was a brief to light the valley floor at the entrance to the tunnel, and provide a lighting treatment to all areas along the route the guests would travel to reach the dinner. In short, no area was to left untouched.



## THEISS ULTIMATE POWER DINNER lighting inside Tumut 2 Underground Power Station

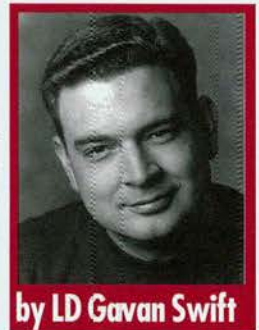
The biggest advantage of holding a function at the T2 power station was the fact that nothing like this had ever been tried before. There was no past history as a function venue and no previous events to look at and learn from. The workers at the Snowy Scheme really had no idea what we were really trying to achieve, nor the equipment, manpower, and infrastructure required to hold an event of this size in such a remote location.

The Tumut 2 Power Station is almost 2 hours by car from Cooma in the Snowy Mountains. T2 has four 12,500V hydro-electric 3-phase power generators, and is the second of the three Tumut power stations that are fed by water from Lake Eucumbene. The nearest town is Cabramurra which is a private town owned by the Snowy Mountains Authority. It is Australia's highest town and has only the absolutely barest of essentials. One general store, one 'wet canteen' (read - pub), one dining room, one pool table, and one television (tested and tagged, and chained to the wall). Cabramurra was where all the guests, catering staff, production personnel, and thousands of bogong moths were accommodated for the event.

In the lead up to the event, in addition to the usual array of site visits and production meetings, some key personnel, including myself, Richard Martin (Production Manager), Darren Cooper (Head Mechanist), the boys from System Sound, and the heads of the catering staff had to attend lectures and sit a short exam to become suitably qualified, to the Snowy Mountains Authority (SMA) standards, to supervise our respective crews on site. The catering people had to complete the Category 1 basic training that was primarily basic electrical and fire safety. The rest of us had to complete Category 2 basic training that was a little more involved and covered high voltage electrical, fire, and hydraulic safety. As you can probably un-

derstand, this venue had more than its fair share of hazards. I was particularly shocked to learn that only four major safety systems have to fail for the power station to flood! For those readers who recently endured the Sydney CBD black-out, that was caused by four major system failures at Energy Australia. The Category 2 training enabled us to sign on to SMA work permits which have to be issued for every job carried out in the power station.

The philosophy taken in designing this event, not only from a lighting point of view, but overall, was to highlight the extraordinary engineering feat in creating an underground power station in the middle of a very large mountain range. The only problem we felt with the site is that it doesn't change. After being on the Machine Floor (the area where the dinner and entertainment were taking place - see picture) for more than half an hour the impressive nature of the venue started to fade and take on a very spartan, utilitarian feel. Therefore the object of the lighting in this space was to create ever changing environments so that the guests would never lose that feeling of being in an amazing space.



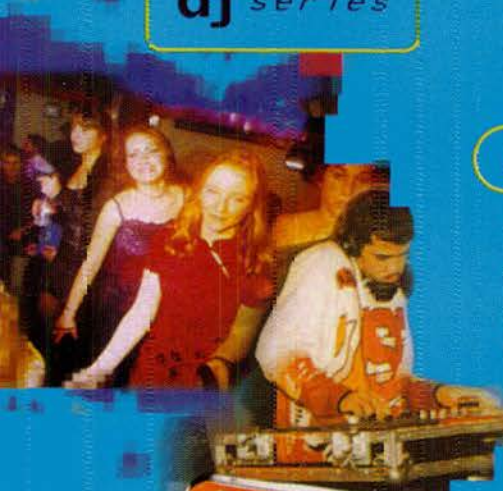
by LD Gavan Swift

The entrance to the tunnel (see picture) is a quite understated stone wall set into the side of a mountain, but heading into the tunnel for the first time, you are confronted with a one kilometre long road that for the first 700 metres is dead straight and very steep. The effect of the tunnel is amplified by a straight run of fluorescent lighting down each side, all the way to the bottom.

The first part of the evening was held at the entrance to the tunnel. The guests arrived to find a clear marquee with a

*continued over*





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Mad 4-1

Star 205HP



### dj PACK TWO

2 x Scan 305HP with the latest features including smooth, quiet mirror movement and a Star 205HP make up pack 2.

The control is from the compact Mad 4-1 unit and as with pack 1 all leads and lamps are supplied.



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### NEW DJ PACK THREE

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# Lighting::EVENT

BY::Gavan Swift

## THEISS ULTIMATE DINNER

*continued from previous page*

budlight canopy, colourfully lit gum trees surrounding the site, and the entrance to the tunnel lit up in dark blue from two 4K HMI fresnels with the concrete tunnel entrance highlighted by Altman Shakespeares, and the sponsors logo projected by a Shakespeare 5° onto the stone wall. The 4K HMI's and Shakespeares were rigged off a Genie Lifter that was hidden behind a bus shelter, covered in camouflage netting and secured back to a lamp post. Power to this area was supplied by a generator - quite amusing given we were at a power station.

The guests were then transported down the tunnel in 13 Coaster buses to the entrance to the AV room. Here all the fluorescent lighting in the tunnel was gelled with L119 to give the drop off area a dark blue glow, and the guests were guided into the power station by two runs of blue festoon along the ground and two Shakespeares highlighting the T2 sign. After the AV room, the guests then walked down the staircase towards the Control Room. The fluorescent lighting in the staircase was gelled blue, and par56 uplighters and a run of budlight down the lower handrail guided the guests down the Control Room.

The Control Room also had a colourful lighting treatment to highlight the control panels, computer terminals and operating areas. Here the guests had their first view of the Machine Floor.

The Machine Floor was obviously the main area for lighting treatment. There were three main elements in the Machine Hall that required the majority of the lighting. They were the huge vaulted ceiling, the four generator caps, and the raw granite walls with the smooth concrete surrounds. Hence this dictated the lights required: six Studio Due CityColors to provide an intense and infinitely variable colour wash over the vaulted ceiling; 12 Martin Pals for their shuttering ability to selectively light various elements, excellent light output, colour mixing, and cut glass gobo to create water effects; a mixture of 30° and 40° Shakespeares to light the concrete 'proscenium' surrounds in amber and the rough granite in blue.

The tables themselves were not directly lit as enough light was provided by reflected light off the vaulted ceiling. But the tables were not left untreated. Every table had as a centre a 'Plasma' Ball



which were purchased specifically for the event.

One of the great concerns for both myself and the sound company was the amount of electro-magnetic radiation affecting the sound and lighting equipment. Although the power station was not operating while the event was on, for the fit-up days the power station was operational and generating power. While the power station was generating, the electro-magnetic radiation did not seem to affect the automated lights, but did play havoc with the lighting

controller, causing it to occasionally misbehave, and the monitor was virtually unreadable. To enable sound and lighting system checks, and plotting, the SMA scheduled power outages where the station ceased generating power at scheduled times.

Overall the event seemed to be a major success. It was exciting for me to be working on such a unique event. It was refreshing to have been given the time and resources to spend a good deal of time planning every detail of the lighting for this event.

The budgets were reasonable and the fit-up time was sensibly scheduled. My thanks must go to my Head Electrician, Damien Oxley, and the lighting crew, Troy Strybis, Pat Clark, and Dom Kyan. It has long been my belief that the personnel on a job, make the job, and their attention to detail enabled me to concentrate on the big picture issues, which ultimately makes these events work.



**Event Producer** Julie Brooks & Co. **Event Designer** Robert Dein **Lighting Designer** Gavan Swift **Sound Designer** Julian Spink - System **Sound Production Manager** Richard Martin **Head Mechanist** Darren Cooper **Head Electrician** Damien Oxley **Lighting Crew** Troy Strybis, Pat Clark, Dom Kyan **Sound Crew** Don Eickhoff, Tony Love **Lighting Supplier** Chameleon Touring Systems **Sound Supplier** System Sound.



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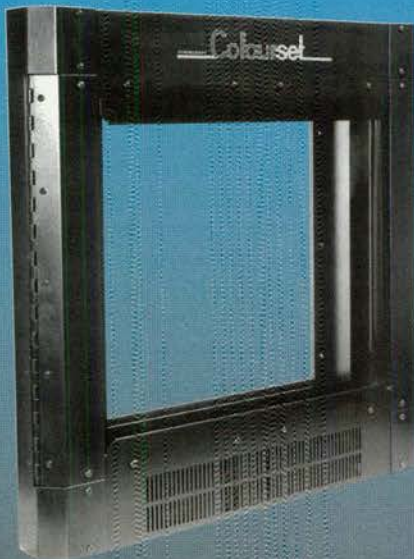
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Write in Reader Service Number: 189

## Colourset POWER

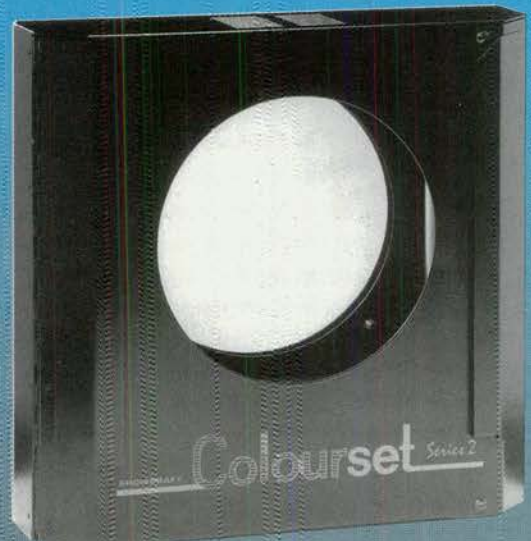


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# HIGH END SYSTEMS ALWAYS BUSY

High End Systems at LDI may have been smaller than in the past but their was a plethora of new products.

Studio Beam PC is a pebble convex automated fixture with variable soft edge, a large zoom range and intense beam shaping.



Using a new short-arc lamp and a patented combination elliptical/spherical reflector and aspheric lens system, the Studio Beam PC produces output levels one would previously only expect from much larger units.

Cyberlight Turbo has an increased light output of up to 100%, has an improved control over beam flatness and a new twin achromatic lens system which improves focus quality.

Color Pro HX is an affordable colour changing spotlight covering the whole range of requirements from hard-edge to soft wash in one versatile unit. It uses a long life, MSD250/2 lamp and

full CYM subtractive colour mixing.

Other features include variable beam shaping, frost functions, and true zoom control over a wide range of beam sizes. The versatile Color Pro HX allows variable beam angles from 171 to 441 (soft wash) and from 17° to 36° (hard edge). Color Pro HXi has all the features of Color Pro HX, but also includes an iris for greater control over beam size. Color Pro HXi allows variable beam angles from 3° to 36°.

For their customers in television and studio, live production, and architectural applications, High End have produced a hard-edged beam fixture to complement the Studio Color wash luminaire. Studio Spot 575 CYM is a fully convection cooled moving head spotlight offering CYM colour mixing as an optional replacement for the colour wheels. The mix-



## Aus Companies join forces at LDI '99

*John Enstace and Lorraine Eadie from Laservision, Colin and Fiona Baldwin of Showcorp, and Peter Milne of The Electric Canvas*

Four of Australia's production companies joined forces to showcase their areas of expertise at LDI '99. Showcorp Production Services, The Electric Canvas, The Great Outdoor Lighting Company and Laservision Macro-media displayed both as a combined team and individually, their capabilities.

Showcorp have been providing production management and technical services for live entertainment and corporate events for over 25 years. The Electric Canvas supplies high output large format projection services to the special events industry. The Great Outdoor Lighting Company stocks high-powered search lights and architectural lighting for outdoor staging installations. Laservision Macro-media manufacturer laser and control systems as well as operating hire.

ing system uses two gradient wheels for each colour to give smooth, even coverage. The patented mechanism uses newly developed manufacturing techniques which have enabled the miniaturisation necessary to fit the wheels and motors into the compact space available.

It utilizes a custom MSR 575/2 lamp and has 370° pan and 225° tilt. The pan and tilt systems feature optical encoders which

automatically correct the beam head's position if the head is manually moved from its programmed position. Other features include variable speed iris, variable frost, smooth mechanical dimming, plus instant blackout and strobe effects while dimming.

Ten user selectable gobos/effects can be installed into two rotating gobo wheels, resulting in 35 gobo/effect combinations.

Australian distributor: Bytecraft +61 3 9587 2555.



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# LDI '99 THE BEST OF THE REST

● Receiving the "Product of the Year" Award at LDI '99 was **ROBERT JULIAT's** "Cyrano" followspot which has remote controlled dimming and soft effect function. It uses a 1200w HMI lamp producing 50% more light. Other features include beam angle 3/8"; new dimming system; new progressive soft effect system; new large and ergonomic handle; new heavy duty adjustable yoke; new boomerang 6 way colour changer unit; tungsten correction filter; deep blue and red dichroic filter; fittable with magnetic or electronic ballast; over 100 meter efficient; and weighs 65Kg.  
Call Robert Juliat +33 3 44 26 51 89.

● **ETC** launched the Source Four PARNel, winner of an ESTA Dealers' Choice Award, which introduces a new category of fixture to the lighting world. With its patent-pending wave lens design and easy

focusing knob, the fixture lets the user quickly spot or flood like a Fresnel - accessing a smooth, soft, symmetrical field with a range of 25 to 45°. And there's no dark spot!

Architectural space can take advantage of the lighting punch and long throws of a theatrical spotlight with the new Source Four HID, a high-intensity discharge fixture with a 9,000-hour lamp. It offers the level of performance of a 2,000-hour 575W Source Four spotlight, and boasts all of its features: cool beam, excellent imaging, crisp pattern projection, and bright, even field.

Also launched was the ETCNet2 DMX Node which allows for the operation of four universes of DMX and remote focus and ETCLink through one ethernet cable.

Australian distributor: Jands Electronics +61 2 9582 0909.

● **STRAND LIGHTING** showed the new 300 Series consoles which extend the popular 500 Series control systems to a wide range of users. The consoles feature a unique modular construction for a fully flexible control console layout. Modules can be arranged in any order or pattern and be detached up to 300 feet apart. Interconnection between modules is via Strand S Buss communication system over Category 5 cable with RJ 45 connectors for simple low cost connectivity.

Available in seven models with systems beginning at 24/48 and 48/96 memory manual desks and progressing through the 125 and 250 channel memory systems. Larger venues will be able to benefit from the 400 and 600 channel memory consoles with integral flat screen LED displays and full network support as standard features. The 120 submaster model with 600 control channels will meet the requirements of operators who need extensive hands-on flexibility. All systems feature fully integrated motion control software.

Australian distributor: Bytecraft +61 3 9587 2555

● Receiving an 'honourable mention' in the list of awards at LDI '99 was the HMI lamp house from **LIGHTING INNOVATION** which is tailor-made for the ETC Source Four. Weighing only 8kg, the Inno-Four 575 HMI produces 2000 Lux at 20 metres, can be fitted with 19-50° optics, 15-30° and 25-50° zoom and the Source Four Par. Its electronic ballast (3.6kg) is designed for easy operation and intensity control from 100 down to 30% can be achieved by DMX control. Hot re-start is possible.

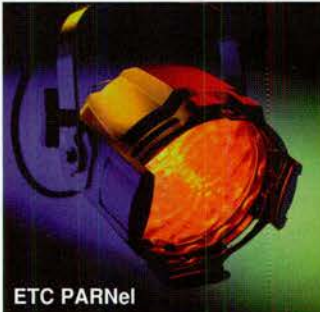


● **COMPLITE** introduced Sparktop, a new version of the Spark 4D control console. Sparktop contains all the standard Spark 4D features including 536 DMX channels, crossfader, 20 controllers, effects, hard disk drive, Ethernet, SMPTE and MIC. It also includes a 10.4" colour LCD screen and a rugged cover and carrying handle eliminating the need for a separate monitor. It fits in an aeroplane overhead compartment and can be set up and ready to go in seconds.

The new Luna series of expandable yokes from Compulite are based on newly developed mechanical drive systems and provide accurate and silent operation at moderate speeds.

Suitable for a variety of luminaires, including FCC, Fresnels and profile spots, the yokes can take a payload of up to 20kg, and luminaires are mechanically retained in the last position, even with an unbalanced load. A safety clutch (torque limiter) is a built-in safety feature and allows manual back-up for position adjustments including a self-locking system. The servo system has absolute memory position and no homing movement is needed after power up.

Australian distributor: Coemar De Sisti Australia +61 3 9467 8666.



ETC PARNel

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## LDI '99 THE BEST OF THE REST

● **PROTECH** won the Rigging Award for their LinkLift which does not require holes in the floor of the pit to work. Using patented, locking link columns by Serapid USA, the LinkLift is quiet and achieves fluid motion with a variable-speed driver. Call: Protech +1 800 232 9336.



● **APOLLO DESIGN** are manufacturers of custom and standard gobos available in both glass and stainless steel. New at LDI '99 were the Colour Scenic patterns which are full colour photo gobos and Super Scenic patterns which are high resolution black and white gobos. Both fea-

ture an amazing 10,000 dpi. The Colour Scenic gobos won the Esta Dealers Choice 'Expendable Widget' Award.

Call: Apollo Design Technology +1 219 497 9191.

● **OSRAM** produced some new lamps mainly the HMI 6000W/SE which offers 500 hours of service, a specially designed base configuration that ensures reliable hot restrike behaviour over lamp life and increased mechanical robustness. It has 600,000 lumens, a 6000K colour temperature and high colour rendition (CRI>90).

Also new were the Studioline 55W lamps which Osram say cast more light, consume less power and generate less heat. The line is available in two colour temperatures: the Studioline 55W/3200K and the Studioline 55W/5600K. Both have a luminous flux of 3800 lm and a rated life of 8000 hours.

Australian distributor: Osram +61 2 9481 8399.

● **CITY THEATRICAL** won an Honourable Mention Award for their Autoyoke which converts traditional theatrical lighting fixtures into full featured

moving lights. It is DMX controlled and allows you to pan and tilt, auto iris, auto focus, and drive colour scrollers. It attaches easily to today's most popular theatrical lighting fixtures.

Call: City Theatrical +1 718 292 7932.

● The Colour-Fill by **ARTISTIC LICENCE** uses red, blue, green and yellow light emitting diodes to provide totally silent DMX512 controlled colour changing at low power and long lamp life - approximately eleven years.

Colour-Fill is 90% efficient meaning that nearly all of the power used is turned into light as opposed to heat. The use of additive colour mixing ensures that no power is wasted by filtering white light, making this a very 'green' luminaire.

Colour-Fill can produce over 16 million colours in standard mode and in excess of 4 billion colours in extended mode.

The new linear Colour-Pipe luminaire is based on colour light emitting diodes. The product is housed in a 30mm diameter acrylic tube and is available in lengths of 332mm, 665mm and 1000mm. It uses the principle of mixing red, green and blue light to produce a huge range of colours and its small diameter and low heat output allow it to be used in positions, such as cove lighting, where conventional solutions are impossible.

Water-Fill is the waterproof version of Artistic Licence's recently introduced Colour-Fill digital lighting range. Its environmental rating of IP67 allows it to operate submerged to a depth of one metre. Its aluminium shell is resistant to both salt and chlorinated water and 6mm toughened glass protects against stones and coin damage.

Australian distributor: CDA +61 3 9467 8666.

● Juice Box from **COLOR KINETICS** provides a breakthrough in lighting control technology that provides both power and data to the company's iColor MR digital colour changing lamps over

standard two-wire circuits. Employing Color Kinetics' new patent-pending Smartjuice power and data multiplexing technology, Juice Box eliminates the need for the separate data wires required by conventional control methods.

Juice Box is designed to support up to 22 iColor MR lamps, and replaces other step-down transformers for a variety of low-voltage circuits including low-voltage track, rail and cable systems. It accepts data from external devices, including standard DNX512 boards, PCs and other networked devices, as well as Color Kinetics' own line of controllers.

Australian distributor: CDA +61 3 9467 8666.

● Another winner of an Honourable Mention Award was **MOLE RICHARDSON** for their 18" Molebeam Projector which comes in either 2000W or 1200W HMI versions. The 2000W version produces a streaming ray of light in tungsten (3200°K) and the 1200W version daylight (5600°K) and they can be spotted and flooded from -50 to +150.

Australian distributor: John Barry +61 2 9439 6955.

● **SPACE CANNON** had their new Lighthose system of acrylic tubes on display. Lighthose can be added to the Space Cannon Focus 1200W colour changing fixture allowing the colour changing effect of the Focus to be featured along the tube. The acrylic tube can be formed to produce various shapes such as curves etc and is ideal to fit into architectural elements.

A new compact moving head spotlight called the Ibis was also shown which uses an electronic power control system which allows it to run either a 1K, 1.6K, 2K or 3K Xenon lamp. Instant lamp strike, electronic dimming down to 10% of beam output and a strobe function are all standard. The Ibis also incorporates CMY colour changing, a mechanical shutter and a motorised zoom for beam shaping.

The Easy is an automated searchlight similar in features to the Ibis but without colour mixing. Both fixtures can be run any way up as they use a low power Xenon lamp.

Australian distributor: CDA +61 3 9467 8666.



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SELECON



Write in Reader Service Number: 178



Airslide Balloon

● **HARDWARE XENON**, the French manufacturers of high powered slide projectors, collaborated with **AIRSTAR**, the balloon specialists, to produce an internal projector sphere - the Airslide Balloon. The venture won them the Scenic Effect of the Year Award.

The product is a new concept of projection which consists in diffusing pictures inside the sphere without any distortion of the picture, and without any loss of luminosity nor of contrast. The Hardware Xenon projector of 5000W and 7000W, allows the Airslide Balloon to stock more than 200 slides or scrolling text. The new 77mm OLS high definition very wide angle lens with uniform light distribution provides a high quality image on a 50 feet base at a distance of 25 feet. The internal projection sphere shows an hemispherical image of 10 to 15 feet diameter and the projected image can be scrolled or rotated to create a moving image on the sphere. Call: Airstar +33 4 75 62 71 85.

● **COEMAR** launched their CF4 HE moving yoke hard edge fixture that incorporates colour mixing, zoom and focus in one compact, quiet package. Utilising the same carbon fibre casing as the CF1200, the CF4 HE uses a Philips 400W MSR/SA short arc lamp and it has two pattern wheels with interchangeable gobos. The colour system uses dichroic CMY filters and iris and mechanical

dimming are standard.

Also on show was the Panorama Beam BBI (Built In Ballast) outdoor colour changing fixture which is cheaper and not so attractive as the original Panorama. This is aimed for applications where architectural fittings are not on show.

Meeting the demand for an affordable colour changing cyclorama in the theatre is the Broadway Cyc 2K. It is the same as the Panorama but is not weather-proof. It uses a 2K halogen lamp, has full CMY colour mixing, and an electronic internal dimmer. Australian distributor: CDA +61 3 9467 8665.

● **ALTMAN's** new architectural line features a wide variety of metal halide lamped instruments for interior and exterior use including the popular Master Ellipse CDM series, the Shakespeare CDM series, the Outdoor CDM die-cast spot/floodlight series, Star Par and new Master Par series. Australian distributor: Chamelaor +61 2 9310 5222.

● Manufacturers of architectural lighting and experts in linear light distribution **T.R. SYSTEMS** were showing their LED Colour Change Light



Richie Micker and Peter Kemp of CDA with the Coemar CF4 HE

Source based on LED technology. Suitable for indoor and outdoor applications, it delivers 16.7 million colours, up to 100,000 hours of life, responds to DMX512 control with low power consumption and operating temperature. Cal: TIR Systems +1 604 473 2318.



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*"I have got to say Lee 181 (I am sure everyone else does too) although Lee 179 is a nice rich old color too (and Rosco 95 and .....)!"*



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# NEWS

## TEATRO CLOSE

Stage luminaire manufacturer Teatro of Italy, headed by Mike Lowe, ceased trading as of the end of November.

All distributors of the company's products have been informed.

## PHASESHIFT PURCHASE AVO

Phaseshift Productions have purchased an Avolites Pearl from distributors ULA for use in their production department.



Already the console has been in action on a number of productions including touring with Taxi Ride, and use on the Livid festival in Brisbane.

Avolites are the world renowned standard in touring lighting consoles, Phaseshift has acknowledged the demand from international LD's with this addition to their inventory. Contact Dave Jackson @ Phaseshift for more info 9532-1516.

## SHOW TECHNOLOGY CHANGES

Due to an increase in business, Show Technology have promoted Phil Buckley who is now the Martin Product and Lamp specialist for the disco/club market. They've also recruited Neville Lamb, formerly of Videoplus, who'll look after store logistics.

## EAST COAST LIGHTING CEASE TRADING

After 15 years servicing theatrical lighting in Queensland, East Coast Lighting have ceased trading and from November 1st they recommenced business as Lighting Dimensions. All existing hire orders to East Coast Lighting automatically transferred to Lighting Dimensions. The new owners, Mark and Sharon Keegan already own the successful theming company Staging Dimensions. Greg Hughes has become

General Manager for Staging Dimensions. All East Coast lighting staff remain. All telephone and fax numbers remain unchanged +61 7 3252 9198.

## ESTONIA'S HEAVEN 'n' HELL

Installation of some 250 Selecon luminaires has begun at the Tallinn City Theatre in Estonia bringing to life long-awaited performance venues.

Boasting unique architecture this complex of fifteenth-century building houses eight different stages providing an atmosphere of creativity and challenge for directors and designers. Porgulava, (Porgu meaning "the Hell"), opened in November 1997 with Elmo

Nuganen's production of Bertolt Brecht's "The Three-penny Opera" and is the most unusual stage in the Tallinn City Theatre. Originally planned as an understage for a new big theatre hall that is yet to be built and not destined for theatrical performances, this vast irregular-shaped hall lies 6 metres underground, hence the name. Aboveground, is the Heaven Stage which is scheduled to open in December 1999 with Elmo Nuganen's production of "Hamlet". As with all the Theatre's performance sites, there are no restrictions on placing the stage or the public; the stage can be turned in any direction desired.



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## TITANIC EXPERIENCE

The Titanic Experience Ride at Fox Studios, Sydney, feature many Altman 5000S Studio Fresnels. Australian Gaffers Paul Johnson and Mile Jones the first professional users of the product are apparently raving about the product.

## The DMX Foot Massager

Doug Fleenor is known as Dr. DMX and his company, Doug Fleenor Design manufacture a variety of products that use and support the DMX512 control standard.



New at LDI '99 was the DMX Rotor-Router an electronic patch bay for DMX512 signals. Consisting of an Input Module with 10 inputs, and up to 20 Output Modules with 10 outputs each, the unit patches any input to any output using front panel rotary switches. The inputs and outputs are all electrically isolated to prevent ground loops and fault propagation.

Also at LDI '99 was the DMX512 Foot Massager, an example of DMX control gone too far. Developed to showcase the "snubberless" circuitry used in their single channel dimmer, the massager became a popular product for weary LDI attendees. It joins the DMX Coffee Pot, the DMX Shock Collar and Rebok's DMX tennis shoe.

A single channel control console named the Apathy was also on show. A single knob DMX512 console that sends all 512 outputs to the same level, the Apathy is useful for testing, set-and-forget applications, focusing, and as a companion to their single channel dimmer. Call: Doug Fleenor Design +1 888 436 9512.

## ULA OPEN IN MELBOURNE

Universal Lighting and Audio's Melbourne warehouse is open for business. Only six weeks after the big move from Queensland Justin Knox and Luke Hall have already created a network of new customers and added new dealers to the ULA team. At the official opening party of the Tullamarine office, around 50 people from the lighting, audio, and DJ markets gathered to view the new Melbourne operation.

ULA Manager Con Biviano said Melbourne was the logical choice for a second stocking location for the Queensland based company. Before deciding which suburb would be most suitable for the new warehouse, Con undertook surveys of Melbourne customers and contacts to ask their advice on a prime location. When 75% suggested Tullamarine the decision was made.

On show in the warehouse were several new products including the new Given moving yoke luminaires the Acrobat Profile and Fresnel, the new Abstract Clubscan which has all the features of the VR8 in a black metal body, the Given Kaleido MSD 575w architectural colour changer, and the Con'dome which provides simple weatherproofing for lighting fixtures in outdoor settings. ULA Melbourne, 2/40 Assenby Drive, Tullamarine 3043. Tel: +61 3 9310 4999.

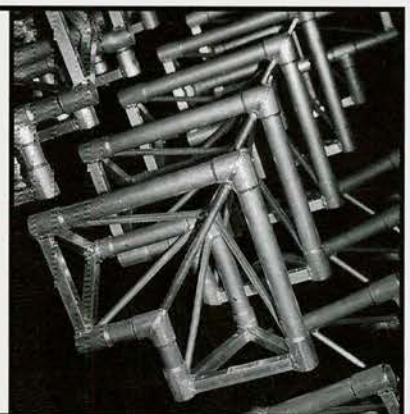
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## SCROLLERS, COLOUR CHANGERS

### SCROLLERS

#### COLOURSET

Showcraft Australia +61 2 9698 3009

**Colourset Series 2 S4** high speed gel scroller with up to 33 colours. Suits Shakespeares and ETC Source 4 + other 6" profiles. Unit is very small to minimise intrusion into sets etc. Versatile control options allow for both DMX512 fader tracking for split colour effects or locked frame operation for accurate colour control. \$1225.

**Colourset Series 2 1K** high speed gel scroller with up to 33 colours. Direct drive dual motor system provides electronic gel tension and easy set up of gel. Versatile control options allow for both DMX512 fader tracking for split colour effects or locked frame operation for accurate colour control. With adaptors fits Par 64/56, all profiles and PC spots. \$1275.

**Colourset 5K** for high powered lanterns. Suits 5K fresnels with 10"/12" lens and 6W DWE/ACL molefays. Up to 12 colours can be fitted. Control via DMX512 or dedicated Colourset controller. Max speed one third of a second per frame. Unit fits into the rotating barn door holder of most 5K lanterns or fitted with slide rails for 6 way units. \$2765, barndoors \$295.

**Colourset 8W** suits 8 way DWE/ACL molefay fittings and up to 12 colours can be fitted. Control via DMX512 or dedicated Colourset controller. Max speed one third of a second per frame. Gel cooling with low noise, high velocity tangential fan. \$3250.

#### WYBRON IC

Bytecraft +61 3 9587 2555 +61 2 9550 3955

**Coloram II** advanced scrolling colour changer. Seven custom sizes to fit every light - and every application. 32 colours, 24-head remote power supply, lightweight, easy to install. Motion control system for smooth, silent and quick gelstring movement. Fully digital with Intelligent diagnostics from your lighting console. Dual-speed, remote control fans. From \$2199.

**The Forerunner** cool, quiet and durable. The 7-inch fits all PAR 64s and most 6- and 8-inch ellipsoids. The 4-inch fits Source 4s, Shakespeare 600s, and compact ellipsoids. Up to 16-frame colour changing.

Autoload, (No toploading), Separate 16-head power supply, Individual DMX addressing, Daisy chaining. Compatible with most competitor systems. From \$970.

### COLOUR CHANGERS

#### ABSTRACT

Universal Lighting & Audio +61-7-5532-9922, +61-3-9310-4999

**DuoColor** Designed with the mobile DJ, touring band and small venue in mind, the Duo Colour weighs 9.5k and comes ready-installed on a "top-hat" compatible T-bar for rapid installation and mounting (fitted with M10 stud). Consists of two heads, each of which has 7 colours, projected through a high quality optical system and resulting in bright beams. Each DuoColor is individually addressable via full DMX512. Both heads are pre-wired within the T-bar assembly, requiring a single 240V connection. \$1201.

**ClubColor** fixed position colour-changing fixture with a 150W discharge lamp, 6000 hour lamp life. The ClubColor CED has 12 pure dichroic glass filters combined with a colour correction filter, producing 24 shades. Other features include variable beam apertures, frost effect filter and a multi-coloured effect, DMX512 (any address), or the Abstract Supersound™ mode is also built in for automatic light shows using the internal microphone. The ClubColor will synchronise with all other Abstract DMX products when in stand-alone mode. \$1527.

#### ACME

ULA +61-7-5532-9922, +61-3-9310-4999

**Infinity Colortec** is a DMX512 or sound-activated controlled colour changer with eight dichroic colours plus white, and utilises an economical high output M33 24V 250W lamp. \$368.

#### AMERICAN DJ

American Di Supply Australia +61 2 9568 2100

**X-CES** a professional DMX colour changer featuring 10 dichroic colours plus white, strobes in every colour, split colours. employs smooth stepper motors, uses 2

DMX channels, controllable via any DMX controller or stand alone with inbuilt programmes, full focussing lens, fan cooled, aluminium case design, uses ELC 24v 250w lamp or long life ELC rated at 300 hours (manufacturers rating). \$368.05.

#### ARTISTIC LICENSE

Coemar De Sisti Australia +61 3 9467 8666

**ColourFill** Colour changing Cyc light utilising the latest in LED technology. Uses standard 4 pin scroller connectors and PSU system. DMX control or internal pattern generation. Ability to link multiple units in

stand alone mode. 100,000 hour lamp life and virtually no heat. Draws only 35w of power. Internal dimming, strobing and RGB colour mix system. \$TBA.

#### CLAY PAKY

Show Technology +61 2 9898 1111.

**Combi Color** CombiColor HTI300, compact and powerful, packed with colours and effects. It takes a HTI300W lamp. \$3072.95.

**Stagecolor 300** is provided with 3 filters making a limitless colour palette. This unit has also all the features of the larger units only in a compact size, featuring channel control for mechanical dimmer and stopper/strobe effect. Needs a HTI300 discharge lamp. \$7376.23.

**Stagecolor 1000** is specifically designed for use in television studios and theatres equipped with a 1000W halogen lamp. With 3 colour mixing systems and advanced optical glass frost filter giving a very wide beam

*continued over*

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# buyers guide:: SCROLLERS, COLOUR CHANGERS

angle. Always maintains a perfectly uniform wash over the illuminated surface. \$9835.25.

**Stagecolor 1200** a powerful washlight with features not readily found in conventional three colour mixing systems. Always meeting the demands of any sophisticated professional application. Taking a HMI 1200. \$14753.28.

## COEMAR

Coemar De Sisti Australia +61 3 9467 8666

**CF1200 Spot** Yoke mounted full 360 degree movement, 1200w discharge colour wash luminaire with carbon fibre housing, CMY colour mixing, motorised variable frost for variable spot size, 0-100% mechanical dimmer, super fast strobing, selectable voltage ballast (115v to 230v), flicker free operation. Control via DMX512. From \$12,244.26.

**CF1200 Spot** Yoke mounted full 360 degree movement, 500w halogen colour wash luminaire with carbon fibre housing, CMY colour mixing, motorised Fresnel lens for variable spot size, 0-100% electronic dimmer, super fast strobing, selectable voltage (115v to 230v), Brighter than most 1200w halogen fixtures. Control via DMX512. From \$9,677.05.

**CF Colour Changer** Exciting new fixture with built-in CMY colour mixing, electronic dimmer, zoom and beam shaping. Full DMX control makes this the ideal Par64+scroller replacement. 500w halogen lamp gives out 10% more light than a Par64 with only 2A power consumption. \$TBA.

**Panorama Cyc 1800** Powerful cyc wash fixture designed for large scale projection. CMY colour mixing, outdoor use certified, uses powerful long-life CMD 1800 lamp. Stand alone operation with in-built colour changing crossfade program with user definable vari-

able rate. On-board dimmer, variable beam angles, and remote lamp on-off. Control via DMX 512 control signal. From \$8670.

## COLOURKINETICS

Coemar De Sisti Australia +61 3 9467 8666

**iColor** MR16 replacement fixture using patented LED colour changing system. Virtually no heat, 100,000 hour rated lamp life (that's 11.4 years at 24hours per day, 7 days per week). Plugs into any low voltage MR16 lamp base. Internal controller for inbuilt colour effects. DMX or computer control via optional interface. \$375

**iColor Cove** Linear colour changing/mixing fixture using patented LED colour changing system. Virtually no heat, 100,000 hour rated lamp life (that's 11.4 years at 24hours per day, 7 days per week). Requires 12v low voltage power supply. Internal controller for inbuilt colour effects. DMX or computer control via optional interface. 15cm and 30cm lengths. From \$416.

**C-30** Unique LED colour changing luminaire, using a patented colour changing system with no moving parts. Virtually no heat, 100,000 hour rated lamp life (that's 11.4 years at 24hours per day, 7 days per week). Uses 24v DC power supply. Internal controller for inbuilt colour effects or DMX or computer control. 225 lux @ 1m. \$800.

**C-200** Unique LED colour changing luminaire, using a patented colour changing system with no moving parts. Virtually no heat, 100,000 hour rated lamp life (that's 11.4 years at 24hours per day, 7 days per week). Uses 24v DC power supply. Internal controller for inbuilt colour effects or DMX or computer control. 1000 lux @ 1m. \$1500.

## FAL

ELSTA +61 2 9568 2100

**PF-3003** features 9 dichroic colours plus white, true split colour capability, bidirectional rainbow effect, one stepper motor, controlled by 0-10v analogue, superior optics employing optimum efficiency parabolic mirror, extruded aluminium casing. Size 260 x 260 x 310mm, weight 5kg. \$1,064.75.

**PF-3000** uses a 240v 1000w lamp and features three colour changing wheels - cyan, magenta, and yellow allowing an infinite number of colours to be generated. This unit also features electronic dimming, and is controllable by DMX (4 channels) or analogue 0-10v. Size: 480 x 450 x 224mm, weight 18kg. \$3,687.70.

**PF-3001** uses an HSR/MSR-1200 lamp and features three colour changing wheels - cyan, magenta, and yellow allowing an infinite number of colours to be generated. This unit also features electronic dimming, and is controllable by DMX (4 channels) or analogue 0-10v. Size: 480 x 450 x 224mm, weight 20kg. \$4,097.54.

**PF-2900** a DMX controlled Fibre Optic light engine accepting fibre optics 8.3 to 20mm in diameter (fibre optics NOT included with product). It uses an HQI-R 150 W/NDL FO (Osram) lamp with a rated life of 9,000 hours (Osrams rating) and features 9 dichroic colours plus white, shutter and strobe from 1 - 7 flashes per second, 3 colour temperature correction filters and is controllable by either DMX or stand alone through in-built programmes. Size: 250 x 265 x 165mm, weight 6.5kg. \$2,868.03.

## FUTURELIGHT

Coemar De Sisti Australia +61 3 9467 8666

**MH640** Compact 250w discharge moving yoke colour changing fresnel. Full CMY colour mix plus 6 way colour wheel. Electronic frost, dimmer and strobe. Manual zoom. Very fast movement (540° pan, 270° tilt), internal colour macros, LED menu system. DMX512. \$5,327.05.

**CC200 Pro** Powerful colour changer with a total of 72 single and bi-colour combinations via 2 wheels. Manual focus and zoom from 11 to 20 degrees. Electronic mechanical dimmer, frost filter, strobing shutter



and beam reducers. DMX 512 signal or in-built controller allows for independent operation. Uses a powerful 200MSD/HSD or 250MSD lamp. Ideal Par64 replacement. \$1,411.48.

**CC150** Low cost compact colour changer with 8 colours, bi-colour ability, 2 multicolours, 3 gobos. Manual zoom and focus, Electronic DBO shutter and strobe effect. DMX 512 control. Uses 150w incandescent lamp. \$600.

## GENI

Show Technology +61 2 9898 1111

**Colour Blaster 100** compact yet powerful colour changer with DMX-512 control. Efficient optics fully utilise an inexpensive 24V 250W lamp to produce a sharply focussed and richly coloured beam. Offers 8 colours plus white, 1-5fps strobe and 100% dimming as well as on board audio activated programs. \$409.

## GIVEN

ULA +61-7-5532-9922, +61-3-9310-4999

**Acrobat Fresnel** moving yoke washlight, MSD 250 lamp. Compact, quiet in operation, stable colour temperature. Can operate in any position and 'on the road' a pan and tilt movement arrest system prevents any transport damage. Maintenance is simple and lamp replacement is equally quick and easy. Unlimited range of colours and optional 16 BIT resolution. \$4397.

**ColorW** ay a whole spectrum colour changer using subtractive colour mixing (CMY) so as to produce virtually any desired colour, with total colour control and instant, silent colour changes all by DMX. Available in halogen, MSD and MSR versions. PATENTED. \$4459

**Kolorado** architectural colour changer equally at home indoors as it is outdoors; wide angle high power flood light; CYM colour changer. Controlled by a standard DMX signal or operated automatically. A stand-by function is provided to lower the power consumption when the black out is on for more than 30" (33% less). MHD 1800W discharge lamp, rated life of no less than 2500 hours. Galvanised steel body and the scratch resistant polyurethane finish are part of a housing design which is fully weatherproofed (IP44). \$7950.

**Kaliedo** MSD 575W lamp; compact; CMY subtractive colour mixing system; new patented wide angle optical system to achieve an almost unlimited range of colour and mood creation with a 5700°K colour temperature. Weatherproofed housing rated IP44. Stand-by function on black-out for lamp life extension, built in power saving system (33% reduction) multi-unit synchronisation via master/slave option, linear 0 to 100% dimmer, strobe effect, easy lamp replacement, and quiet operation. Manual or programmed automatic operation as well as standard DMX 512 access gives easy control. \$4507.

## INFINITY

ULA +61-7-5532-9922, +61-3-9310-4999

**Infinity Colortec** is a DMX512 or sound-to-light controlled colour changer with eight dichroic colours plus white, and utilises an economical high output M33 24V 250W lamp. \$368.



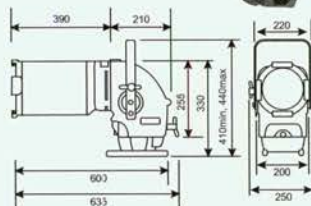
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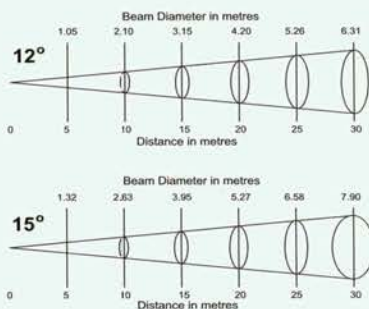
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### JBLIGHTING

ULA +61-7-5532-9922, +61-3-9310-4999

**VaryColor2000** takes a HSD250 lamp and features 35 colours plus white, 36 semi colours, 4 beam reducers, shutter, dimmer, frost, colour correction filters, rainbow effect. DMX512. \$1918.15.

**VaryColor6 250** With the new Varycolor 6 Moving-head-Washlight it is possible to change the colours in only 0.2 seconds with its CYM-colour mixture. Small measurements and weight contribute to the handling qualities of the Varycolor 6. DMX512 plus built in stand-alone mode, utilises powerful MSD250 lamp. \$6504.

**VaryColor6 575** With the new Varycolor 6 Moving-head-Washlight it is possible to change the colours in only 0.2 seconds with its CYM-colour mixture. Small measurements and weight contribute to the brilliant handling qualities of the Varycolor 6. DMX512 plus built in stand-alone mode, utilises powerful 575MSR lamp. \$6800.

### MADLIGHTING

GUET 1800 773 187

**MAD COLOUR 21 1AP** 10 Colours plus open (up to 33 colours) via 2 colour shifters; 6 Gobos; 4 beam widths and frost filter. DMX 2 channel or stand alone; discharge version employing Arcstream 150w lamp with 6000 hrs average lamp life. \$1351.64.

**MAD Q COLOUR** Same features as 211AP except with shutter. \$1473.31.

**MAD OPTI COLOUR** Fibre optic light source. 10 colours plus open (up to 33 colours) via 2 colour shifters; Trapezoid colour wheel (smooth seamless scrolling); 4 Brightness levels, variable pulsing effect. DMX or stand alone. Arcstream 150w lamp with 6000 hrs average lamp life. \$1553.28

### MARTIN

Show Technology +61 2 9898 1111

**CX 2** consists of 15 dichroic colours and 2 split colours plus open. The unit also has 10 pattern gobo's, 5 iris gobo's and frost. It has a full range of electronic dimmer and variable strobe. The CX 2 uses a 250 Watt halogen lamp and a DMX controller. \$818.85.

**PRO 400** consists of 2 colour wheels which produces 32 colours. The unit also has 4 iris gobo's 7-21, and a mechanical dimming system also strobing. The unit can be programmable by DMX-512 or Martin protocol RS-485. \$1433.60.

**Robocolor III** has 11 rich dichroic colours plus white and blackout. The unit can be addressed by any programmable DMX-512 controller or Martin RS-485 Protocol. Also has been built-in programs which can be set up to trigger automatically or from a music source. The unit is fan cooled and provided with over-heating protection. \$490.98.

**MAC 300** offers CMY colour mixing, and it also has a replaceable 6 slot and open colour wheel. The beam is capable of producing 4800 lumens from a 250 watt MSD lamp. The unit has a high speed head with a dynamic projection range of 540 degrees pan x 289 degrees tilt and has a rated lamp life of 2000 hours. \$5736.88.

### RYGER

Disco World +61 3 9735 0588

**DMX Defender** Colour Changer, 10 Colours and 2 x split colours, 250Watt Lamp. The lamp power is controlled by a build in dimmer. \$699.

### SPACECANNON

Coemar De Sisti Australia +61 3 9467 8666

**Focus** High powered indoor / outdoor architectural luminaire using 1.2/1.5kW metal halide lamp, patented CMY colour mixing system, motorised focus and mechanical dimmer/shutter. Supplied with 4 Par lens for adjusting beam size and shape. DMX 512 control. \$12,931.15.

**Paint Colour** Outdoor architectural Xenon luminaire

with a built in smooth colour changing system, 0.5° to 47° beam angle using interchangeable lenses and frost filter. Mechanical dimming and black out. Manual pan and tilt adjustment. 1000/2000w versions available. From \$14,550.82

### TAS

Coemar De Sisti Australia +61 3 9467 8666

**CF6** Yoke mounted convection cooled MSR575/2 lamped colour wash luminaire. Aluminium housing, CMY colour mixing, additional colour/conversion filter wheel, 3 motorised frost filters for adjustable beam size, 0-100% mechanical dimmer, super fast strobing. Control via DMX512. From \$8,660.66.

**Colore a.t.20** Projector with mechanical dimmer, black-out, strobe, gobo wheel, 9 dichroic colours, bi-colour ability, rotocolour effect, UV filter, colour correction available, 20 - 33 degree beam angle, focusable, 3 - 15m working distance in 200MSD/HSD or 250 MSD lamp. Control via DMX512. From \$2,230.

**VersiColore** 162 total colour combinations, 2 colour wheels with gobo or colour facility, motorised frost filter mechanical dimmer, black-out, strobe, bi-colour & proportional colour ability, rotocolour effect, UV filter, 5600/3200 colour correction filter, 20 - 33 degree beam angle, focusable, 3 - 15m working distance in 200MSD/HSD or 250 MSD lamp. Control via DMX512. From \$3,100.

**Colore Fresnel** 9 dichroic colour wheel, bi-colour & proportional colour ability, mechanical dimmer, black-out, strobe, rotocolour effect, UV filter, 12, 20, & 30 degree beam angles (motorised selection), 3 - 25m working distance in 200MSD/HSD or 250 MSD lamp. Control via DMX512. From \$2,500.

### CONTROLLER FOR EITHER

### COLOURSET

Showcraft Australia +61 2 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 backed memory, programmable 99 step sequence can be cued from single button or via auto timing. Visual status indicators. Signal output via 5 pin XLR. \$1530.

**Colourset Series 2 Power Supply** 2U rack mount unit supplies up to 24 Colourset scrollers over 4 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.



Due to space restrictions in the last issue of *Connections* the article about Colorado architectural lights being used on the set of *Beast Master* was shortened and in the process the names of the DOP and Gaffer were omitted.

DOP Mark Wareham and Gaffer Matt Slattery have been instrumental in the introduction of new technology such as intelligent lighting fixtures into the local film industry, as was the case in the use of Griven Kolorados on *Beast Master*.

*Connections* apologises for this oversight.

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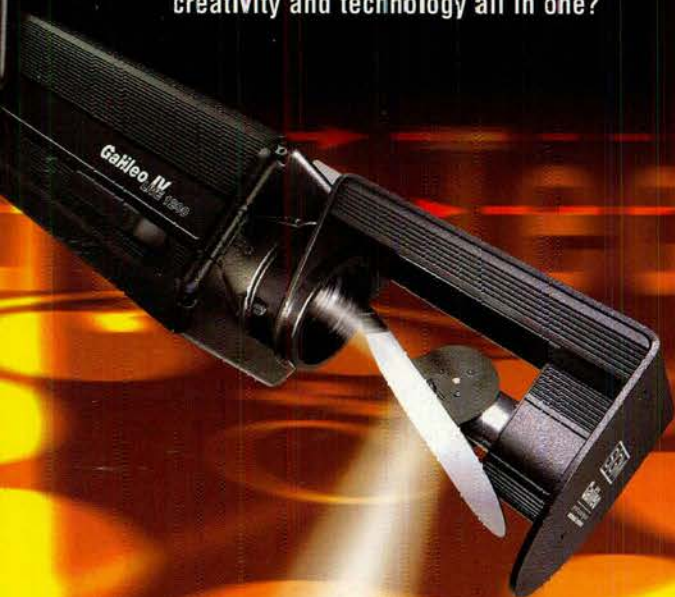
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