

# Connections

PROFESSIONAL AUDIO & VISUAL TECHNOLOGY

JULY 2001 A\$4.90 / NZ \$6.50

## THE END OF THE ROAD

Rock & Roll returns the Tarago

## MAROONED

Think twice about offshore work, warns crew

## THE AUDIO SPOTLIGHT

VERY directional sound is here

## Swinging Courtesans

2500 amps per phase and 1500 channels: Lighting Moulin Rouge

## LCOS joins D-ILA, DLP, LCD at InfoComm

Market Reports: Small moving lights, effectors and reverbs

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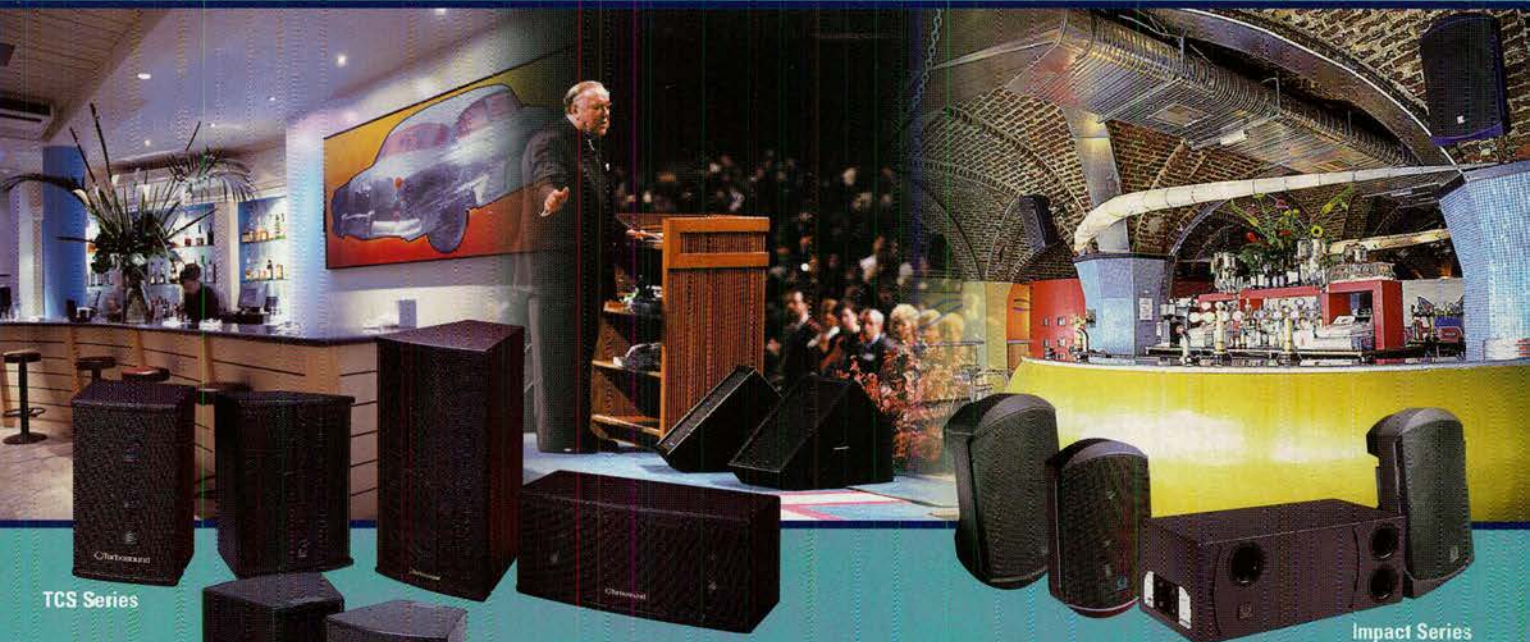
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**From The Editor**

Inside this issue you will find my wrap-up of this year's Infocomm trade show. Each year, one of this show's main draw-cards is the Projection Shootout, which sadly was quite poorly endorsed this year.

Last year, it was disappointing when Sony decided that they would not supply projectors for the event. This boycott has opened the floodgates. The list of non-participants has grown to include Barco, Digital Projection, Eiki, Epson, InFocus, JVC, NEC, Philips, Sony, Samsung, and Zenith – a good third of the potential manufacturers.

One of the reasons given for this dismissal of the shootout is that the differences between systems are so small that the shootout is losing relevance. This is utter cods-wallop. The very fact that the images projected are so close in quality is justification to have them side-by-side. This is the only way you can see the differences. Often these differences would be difficult to see without another image to compare it to.

Another reason given is that of cost – and it is obvious that the amount of stock required to run at the shootout would be a large financial burden. Are these companies running out of money? Should you be telling your friends to sell those shares? Hardly. If cost was seriously a consideration, then InfoComm would have been able to work a solution. So there must be some other reason why these companies want out.

The shootout also tests a projector's ability to run for long periods without user intervention. The guidelines for the event strictly prohibit manufacturers from touching the units while the show is open. If a projector fails, drifts out of focus, or is otherwise incapacitated during the day, then it stays that way until the doors close on that day. So, one underlying justification for why they are leaving the shootout could be that the manufacturers (with an eye always to PR) worry about the loss of sales if their has a catastrophic failure.

However, there is a more plausible reason for the mass boycott. As a writer on these things, it seems that many of these companies find it difficult to accept when they have an inferior product. Every one of them will happily send me press releases stating that their product is "leading the market", "the best" or "the world's first".

In the normal course of doing business, these companies will do anything to avoid 'losing face'. Presumably, there would be considerable internal pressure on any employee that puts the company in a 'losing face' situation. The cowardly option is to run away from the shootout rather than facing up to finding out any weaknesses.

In the case of companies that DO have a superior product, they have now removed themselves from the only event that could prove it conclusively. I guess this will mean that reviewers like myself will remain the only way for the average punter to find out the differences. This is great for me, but a good shootout would have been better for the industry.

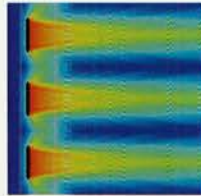
I wonder if this is also an indication that some companies are rushing their products to market too fast for R&D departments to finish the job properly. They are always trying to beat the competition or have the best new device at a trade show. The result of this is an ever-increasing amount of 'vapourware' (displayed hardware that is not yet in production) at these shows.

The management of Infocomm has indicated to me that they are seeking a way to solve the problem so that manufacturers will feel comfortable in coming back to the shootout without comprising the worth of the event. I wish them good luck – they'll need it.

-John Grimshaw, Editor.  
john@conpub.com.au



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SMPTE (Broadcast)  
 Jul 10to13-Sydney www.smpte.org  
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**NEXT ISSUE:**  
 Onsale 8th Aug, subscribers earlier.

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# Connections

The Asia/Pacific Professional Audio and Visual Technology Monthly

JULY 2001

## Marooned in a Pacific paradise

Sometimes, getting paid isn't the problem. Julius Grafton reports:

**Gabriel Zouain** of Master Sound Productions is no fool. Before delivering three and a half tonnes of production to Air Vanuatu he made sure he had half his weeks fee in cash, plus a very good idea who he was working for.

Payment wasn't an issue, because the balance of the A\$12,500 fee was paid in full after the first show by African band O'Yaba at Mealuka, an island of Vanuatu. The Sydney based promoter delivered a hessian sack full of Vatu, which was converted into Australian Dollars the next day.

The unorthodox mini tour settled into a routine. Harrowing boat rides between islands, sudden downpours that filled the makeshift stage roof like a balloon. Meet and greet receptions involving painted natives and unfortunate pigs. And, the stages themselves were hardly an art form - involving coconut trees and plenty of improvisation.

Master Sound's crew, **Jim Peisley** (sound) and **John Pascoe** (lights, pictured at right) made the best of the circumstances in the tradition of getting the (reggae) show on - and the band attracted huge crowds.

But internal ructions between local promoters, local crew, service providers, and a mysterious Sydney based promoter called D & J Brothers Promotions lead to a standoff after the final show. It seems someone wasn't paying someone else. Or indeed - anyone.

Master Sound's crew went about their business, and loaded the system onto a flat bed truck which was to be locked in a shed to await the first of three flights back to Sydney. They retired to the Kaiviti Motel in Vila, aware that the tour had gone pear shaped, but detached from the situation, as they had been paid.

But the shed, and the truck, belonged to a local MP (member of parliament), who took the law into his own hands and seized the Martin Wavefront PA, plus John's lighting rig.

While Gabriel Zouain marshalled the Police, the Australian High Commissioner, and a local lawyer, John and Jim prepared to fly home for some shows in Sydney - minus

the equipment.

Mindful that trouble was brewing, they were wary - and not without cause, because Police detained them and confiscated their passports at the airport. A court order had been obtained, preventing them leaving Vanuatu.

This was quickly overturned, and the M.P. holding the equipment was ordered to return it. He ignored the order, and a painful game of cat and mouse ensued for days. At one stage, the crew had a truck at the shed loaded with a few items, when a van full of 'security' arrived. The local lawyer advised immediate retreat.

The motel owner took pity on the now destitute crew and let them stay on free.

Eventually, the equipment was released

(continued on next page)



## Lightmoves NSW closes, but Melbourne outlet OK

It's never nice to learn of a corporate failure. So it was sad to hear of the closure of **Lightmoves Technologies NSW Pty Ltd**, the family company of **Jonathon Ciddor**. This must not be confused with **Lightmoves Pty Ltd**, a Melbourne based company that continues to trade, owned and operated by **Andrew Sherar** and **Braham Ciddor**, who is the brother of Jonathon.

Lightmoves opened in the early 1980s and became part of a group of companies associated with **Rod Salmon**, who is now a publican. Lightmoves took on a boost after **Barratt Lighting**, an outlet owned by the late **Roger Barratt**, itself was closed in 1981.

It was working in the hire dept at Lightmoves that **Tony Davies** masterminded Chameleon Touring Systems, now Australia's second largest lighting production house.

Jonathon Ciddor and partners purchased the Sydney Lightmoves business in 1989, and traded from premises in Parramatta Road at Leichhardt in Sydney's inner west. In its heyday, the firm distributed plenty of product for Teatro, Theatrelight, Celco, LeMaitre and Optikinetics.

But the end came slowly, with a raft of projects postponed and orders deferred. In June the remaining staff were laid off, and an administrator appointed.

Jonathon Ciddor says he is taking a very big financial hit, and when we called he still wasn't sure what he would do from now on.

There, but for the grace of God, go many in business.

# Connections

9th year of publication!

ISBN: 1320-5595

CONNECTIONS is published monthly  
- except January - by  
Connections Publishing Pty Ltd  
ACN 058 443 182  
ABN 66 058 443 182

Mail: PO BOX 439, EPPING  
NSW 2121 AUSTRALIA.

Deliveries: 16 Willoughby street.

Web: www.conpub.com.au

Email: mail@conpub.com.au

Phone: +61 2 9876-3530

Fax: +61 2 9876-5715

Hours: 0900 - 1700 Sydney.  
After hours try any of the mobile  
numbers below, email, or fax.

#### Advertising:

Julius Grafton, (Publisher)  
julius@conpub.com.au,  
call toll free 1-800-635-514  
or +61 2 9876-3530.  
Mobile 0408 498-180

Subscriptions: call toll free  
1-800-635-514 or +61 2 9876-3530  
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Bulk sales, dealer sales: toll free  
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Newsagent sales: NDD code CNC.

Publisher: Julius Grafton  
julius@conpub.com.au  
mobile 0408 498-180

Editor: John Grimshaw  
john@conpub.com.au  
mobile 0408 833-394

Melbourne bureau: Mandy Jones  
mandaj@deakin.edu.au  
mobile 0414 537-847

Cover photo: Dario Gardiman

Office Manager: Sarah Ford

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Reprographics: Omicron.

IT consultant: Brendan King

Platform: Apple Mac, the cursed  
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Advertising production & art:  
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## Who is doing what?

### MAROONED (from previous page)

after thousands of dollars were spent on court fees. The challenge then was to get the equipment flown back to Sydney, as the promoter had long ago departed without arranging air freight.

Gabriel was quoted A\$13,000 to fly the gear back - and eventually managed to get this down to \$4,000 - the so called 'vegetable' rate. Naturally, this was split across several flights, since Air Vanuatu fly one 737-400 only three times a week to Sydney.

To put an unpleasant end to a saga involving a lawless state, the airline did indeed honour its end of the deal, and treated the equipment like vegetables - including leaving it out in the rain.

Master Sound Productions lost about three weeks work, and are out of pocket many thousands. To cap the whole sorry story, when Connections arrived to interview Gabriel, his car had just been broken into and camera gear stolen. •



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REPUBLIC OF VANUATU

Saturday, May 26, 2001

TO: SHIFT SERGEANT

FM: OCPS

RE: SOUND ENGINEER EQUIPMENT FOR MR GABRIEL ZOUAIN  
AND OTHERS

Following the Court Ruling as of 25 May 2001 and legal advice sought from the Court today 26 May 2001, OCPS made the following orders that by 1900 (L) all equipment illegally under MP Paul Telukuk resident at his possession also Mr Johnny Albert must return to the Police Station immediately NLT 1900(local time).

Failure to release the above said equipment by the above time; those people involved were unlawfully detain the said equipment illegal and be arrested accordingly and laid criminal charges against them for theft (stolen equipment).

This Order must be executed without delay.

MP Telukuk, Mr Johnny Albert and others are informing accordingly.



Copy to: Mr Gabriel Zouain and Others - c/- Kaviti Motel, Vila.

Serious stuff (above), but Police were reluctant to act. Gabriel Zouain of Master Sound Productions (below, right).



## Lightsounds Wholesale is launched

Sydney based ELSTA closed its doors on June 30, and was replaced on July 1 by LSW - the short names for Lightsounds Wholesale.

Launched by Rick Chisholm, LSW has combined new staff and new systems. He says his intention is "to create a service-driven wholesale business that acts as a support network for their dealers".

LSW describes their new company as "truly comparable to the old ELSTA", with a new team of qualified specialists, Audio and Lighting engineers, experienced technicians, marketing department, an in-house design

team and new purchasing department.

The LSW range of products includes 100V line and commercial sound products, stage, theatre and special effects, computerised lighting and music software, karaoke equipment, a wide range of lasers, surveillance, security and decorative lighting, trussing and lifters, entertainment and DJ equipment, professional sound systems fully supported by instructional and catalogue videos. A 228 page retail catalogue detailing the range is offered free.

• Call them on + 61 2 9568 2100



**Grevillea go DSM:** Laurie Stone (left) and Garry McDonald (right) from The Music Dept, with Bruce Jacobson of Grevillea (centre). This Brisbane based studio and post facility recently installed a Soundtracs DSM console. DSM boasts up to 112 channels, Grevillea have 70+ activated. Grevillea chose the console because it allows a SAE workstation, in their case an Octavia, to be integrated into the workflow. The 24 bit, 24 track Octavia is controlled from the desk, with one screen devoted to the SADIe. Neat integration! • Call Grevillea on +61 7 3262-8422, or go [www.grevillea.com.au](http://www.grevillea.com.au)

## Looking at InfoComm 2001



This month Connections reports the latest technology from InfoComm: the largest AV trade show on the planet, held last month in Las Vegas.

Some of the emerging technologies at the trade show included the next generation in plasma displays.

At this stage, only NEC and Samsung currently have +60" plasmas preparing to ship. However, it is known that Panasonic have one under development, and sources at Fujitsu say that they are also working on a screen in this size range.

Our InfoComm coverage starts on page 14.

## JULY INDUSTRY EVENTS

An unprecedented array of industry events are to be held this month on the eastern seaboard of Australia.

- July 3 and 4 'Hands on consoles' in Melbourne, with **Coemar DeSisti Australia**. Call +61 3 9467 8666 for Queensland dates.
- July 9 - 13 is the big one, **SMPTe** exhibition at Darling Harbour (Sydney). See FORUM, P.70
- July 14 and 15: Jands host **Jands Live**, a free 2 day product and seminar festival in Sydney. See FORUM, P. 70 for more.
- July 18: **High End** launch x-Spot at ULA, QLD. (see next page for more).
- July 19: x-Spot launch in Melbourne.
- July 23 to July 27 in Sydney: **Meyer Sound Australia** host System Engineering 101 - a certificate course costing \$220. Also July 30 to August 3 in Melbourne. Call 1800 4MEYER.
- Late July **Seacon** and their dealers will host informal product meetings. Contact (Sydney) **Wayne Kellett** at Herkes Pro Lighting +61 2 9319 3133 or (Melbourne) **John McKissock** at Clearlight Shows -61 3 955 31688. Or check [www.seleconlight.com](http://www.seleconlight.com)

## Barco Melbourne is Moving

Barco has re-located to their new Australian Head Office as of June 25. Their new address is Barco Systems Pty Ltd, 2 Rocklea Drive, Port Melbourne Vic 3207.  
Tel +61 3 9646 5833  
Fax +61 3 9646 5887  
E-mail: [barcosys@netspace.net.au](mailto:barcosys@netspace.net.au)

## Welcome Back to Brown's Precision Welding

Long time industry truss manufacturer, Brown's Precision Welding has re-established itself after the untimely demise of its founder **Peter Brown**.

Brown's new Managing Director **Beau Southey**, a long time friend and colleague of Peter, was determined that the company should not just close its doors, and fade into history. Southey along with other industry players have acquired the assets of Brown's and are focused on continuing the good work.

Long time employee **Iain Ormond** continues on in the roll of Workshop Manager.

The recent move to new larger premises allow the company to carry stocks of trusses and accessories, and also to carry large stock holdings of raw materials.

Phone - +61 3 9701 2355  
[www.browns welding.com.au](http://www.browns welding.com.au)

## Turbo & Lights = discount

Show Technology and Audio Telex have joined forces for a promotion in Australia running until the end of August. For any given project, if you buy the lights from Show Tech and the Turbosound from Audio Telex and you get an extra 5% off BOTH orders. There are a few restrictions such as minimum order values.

## True Form go HDR 24/96

True Form Recording of Spotswood took delivery of a Mackie HDR 24/96 in early February. Mackie's new 24 track stand alone hard disk recorder is typical of the next generation of stand alone hard disk recorders that are replacing first generation ADAT and DTRS tapes based digital recorders. Call **True Form** on +61 3 9391-0907

Who is doing what?



ULA Managing Director Ccr Biviano

## High End caps ULA expansion drive

**QUEENSLAND:** Universal Lighting and Audio have undergone substantial expansion, building a new headquarters, and acquiring distribution of High End Systems and Optikinetics lighting products. The firm distribute audio and lighting products across Australia and New Zealand, and have a branch office and second warehouse in Melbourne.

High End Systems' **John Wiseman**, VP of Worldwide Sales, said, "With Bytcraft's worldwide influence and strength as a production house and Universal Lighting as an exclusive reseller, we're looking forward to seeing more of our products being bought and specified on projects Down Under."

This refers to the ongoing relationship that High End have with Bytcraft Entertainment Pty Ltd, who last year delivered a stunning PR victory to the Texas based manufacturer of automated lighting equipment by specifying their products for the opening and closing of the Sydney Olympic Games.

ULA will sell High End Systems products as well as the Flying Pig Systems Wholehog II console in Australia. Bytcraft Entertainment will continue as a Special Projects Production Partner for High End Systems. Both Bytcraft and Universal will provide technical and spare parts support of High End Systems equipment in the marketplace.

Brand new HQ, built for ULA.



Following on from this announcement, ULA and High End Systems are inviting all professional lighting users, operators, designers and associates to the official x-Spot launch and training seminars to be held on the Gold Coast and Melbourne.

The Qld event will be on Wednesday the 18<sup>th</sup>

of July at ULA's new premises, from 2:00 pm. Melbourne's turn occurs the next day on Thursday the 19<sup>th</sup> of July at the Crown Casino complex Melbourne from 4:00pm.

**LeighAnne Aiken** from High End Systems will be on hand to officially launch the x-Spot in Australia. Call ULA if you wish to attend.

ULA's new facility can host up to 100 people for training or demonstrations and features a comprehensive demo room. The showroom has raised ceilings and plenty of active displays, and the premises also houses full conferencing and marketing facilities.

ULA Managing Director **Con Biviano**, says "We are still the same company, however we are just pushing our style further into the new millennium, both our facility and our new emblem demonstrate that".

Finally, ULA have picked up distribution of OPTI Kinetics and OPTI Trilite brands in Australia. OPTI Kinetics range of projectors comprises five models varying in power from 100 watts halogen to 575w metal halide and includes the new GoBoShow and GoBoPro models as well as the classic Solar 250 and its' new baby brother the Solar 100C. In addition to a comprehensive range of standard effects OPTI Kinetics also produce custom gobos, in-house, by a variety of processes including chrome etching and Beacon full colour half tone dichroic gobos.

OPTI Trilite is available in 50mm and 25mm diameter tube ladder, truss and quad formats. Standard and custom components are available in natural, polished or powder coated paint finishes. The OPTI Trilite UK production facility operates 24 hours a day often enabling entertainment, exhibition and shop display clients to meet tight deadlines. OPTI's DesignLine AutoCAD service is also available to design complex structures.

- ULA's new address is: 11 Distribution Avenue, Nerang, Queensland 4211, Australia. Call +61-7-5510-1333



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The R100 can operate with sample rates up to 96kHz, using quality, 24bit converters and high speed SHARC Digital Signal Processors. Its 56 input channels include 24 analogue inputs as standard and a total of 18 output buses can be configured to suit the application.

The 48 full channels, Mix, Multitrack and AUX send buses all boast 4 band fully parametric EQ (plus 48

point high and low cut filters) as well as Dynamics control with Compressor/Ducking and Expander/Gate.

Creative mixing is yours with the R100. Up to 99 Snapshot/Cues per title provide static recall including input/output routing while smooth, time-code automation is also applied to the quality touch-write faders and all EQ/Dynamics controls.

To centralise your system the R100 has a built-in machine controller for Sony 9-pin, MIDI and T/C chase.

**So, by all means listen (your golden ears will never be the same) but please appreciate the operational features of the R100. Your projects and creativity certainly will.**

Call 1800 017 569 for further details (for Sydney call 9878 9736) or check-out [www.sony.com.au/proaudio](http://www.sony.com.au/proaudio)

**Sony Australia Limited** A.B.N. 59 001 215 354

Head office: 33 Talavera Road, North Ryde NSW 2113 Web: [www.sony.com.au](http://www.sony.com.au)

Sydney (02) 9877 6666 Melbourne (03) 9264 0200 Brisbane (07) 3334 4000

Perth (08) 9202 2555 Adelaide (08) 8234 3777 New Zealand +64 9 488 6130

**SONY**

## Who is doing what?

**HAYCOM SYDNEY ROBBED**

Haycom Staging's Sydney office was burgled in the early hours of Monday June 11. Several hundred thousand dollars worth of equipment was stolen including 4 Barco Data projectors, 2 Sony projectors and some radio mics. The audacious thieves also took a Haycom van, which was used to cart the gear away.

Also taken were 2 laptop computers from the office, and 3 crew toolboxes that were stored onsite. The van was found in Hunters Hill, and returned after being finger printed. Haycom has posted a reward for information leading to the conviction of the thieves.

• For any further details, please contact Ian Eden on +61 2 9557 1666 or email him at [ian@syd.haycomstaging.com.au](mailto:ian@syd.haycomstaging.com.au)

**Panja to change name: back to AMX!**

Panja Inc announced recently that the Company is changing its name back to AMX. The company immediately began doing business as AMX Corporation. This change begs the question – why was it changed in the first place?

• AMX is distributed in Australia by AV Technology Pty Ltd +61 7 5531 3103.

**MUSIC BUSINESS SUMMIT NEXT MONTH**

The 5th National Entertainment Industry Conference will be held in Sydney August 2, 3 & 4.

Run by Phil Tripp's Immedia, the conference is the leading talkfest for the music biz. Tripp somehow even managed to get major mass media coverage of a rumoured appearance by Courtney Love at this year's event.

Love or not, the conference gives industry professionals and wannabe's the chance to hear a huge array of speakers wax lyrical on a huge array of topics. It's always interesting!

• Get more from IMMEDIA, see [www.immedia.com.au/entcon](http://www.immedia.com.au/entcon) or phone +61 2 9557 7766

**ICIA Changes Name To InfoComm**

Launches new operational arm



During the InfoComm 2001 trade show, the group that runs the event (ICIA - International Communication Industries Association) announced that they will be re-branding all of the company's work under the InfoComm name. While the ICIA will remain the official name of the association, the change acknowledges that the InfoComm trade show is the most recognised part of the company.

The other two operational aspects to the association will become known as InfoComm Academy (training and education for AV industry professionals) and InfoCommIQ. IQ is the new part of InfoComm that was also launched at the show.

InfoCommIQ is a very interesting application of the database that was purchased from Pacific Technologies by ICIA some months ago. Essentially the database is a listing of more than 90,000 AV products by various manufacturers. IQ allows manufacturers to put all of the data and information about their products directly in the hands of the dealers wanting to sell it.

Many of the general services of the database are free, but manufacturers and dealers can purchase several levels of upgrades. This can include options like allowing dealers to see things like specific regional products and pricing, customised 'show-rooms' where manufactures can modify the look of the standard product listing, and public or private product catalogues for resellers.

As the information is all delivered in a uniform format. The main goal of the info source is to replace filing cabinets of distributors and installers who can accidentally hold on to out of date information. These people will be able to keep up to date on the best equipment for any job, as well as being an easy way to source unusual items.

The database is web accessible and contains a host of additional features. Call +61 2 9785 4577 or go to the website [www.infocomm.org](http://www.infocomm.org).

**TDC first to be ICIA Certified in Australia**

Sydney's Technical Direction Company was awarded as Australia's first "Certified Member Dealer" company during InfoComm 2001.

A company becomes a Certified Member Dealer when 50% or more of their staff get the InfoComm qualification "Certified Technical Specialist" (CTS).

Jon Sellar, Australia's ICIA rep says that, "This award speaks of their commitment to technical excellence and commitment to providing their customers with a quality product."

At the presentation, TDC managing director Michael Bassett (pictured above) said, "This award is an important way for companies in our industry to be recognised as legitimate."

Gaining a CTS certification for experienced technicians could be as simple as passing the exam. In addition people looking to get CTS certification have to agree to, and sign a Professional Code of Ethics.

InfoComm will be running courses aimed getting people this qualification in the week prior to ENTECH in late January, 2002.

People wishing to get CTS certification should jump on the InfoComm website [www.infocomm.org](http://www.infocomm.org), or contact Jon Sellar on +61 2 9785 4577

**InfoComm 2001 coverage in this issue:**

- LCOS, new format. Page 22
- New Technology: Page 58

# SONY®

They're used in broadcasting for everything from network news, to talk shows, to soap operas. They're used when rock'n'roll headliners hit the stadium circuit, and for Broadway musicals. Sony's 800 Series UHF Wireless Microphone Systems are the stuff of pro audio legend. But until now this high performance has only been available to musicians and producers with deep pockets. Now Sony changes all that with the latest additions to the 800MHz UHF Wireless Microphone family - The Freedom series.



*Freedom*™

With Sony "Freedom" UHF wireless, you're free from the interference, distortion and assorted hash of the crowded VHF band.

You're free to mix and match mics, body packs and receivers. And you're free to step up to the UHF world, even if your budget is firmly rooted in the real world.



Sony Australia Limited A.B.N. 59 001 215 354

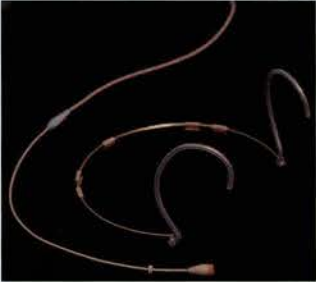
Head office: 33 Talavera Road, North Ryde NSW 2113 Web: [www.sony.com.au](http://www.sony.com.au)

Sydney (02) 9887 6666 Melbourne (03) 9264 0200 Brisbane (07) 3334 4000

Adelaide (08) 8234 3777 Perth (08) 9202 2555 New Zealand +64 9 488 6130

What will you be using soon?

## DPA4066 Adjustable Miniature Microphone Headband



DPA Microphones have designed a new headband, intended to offer superior sound and functionality to live performers and broadcast. The first model in the current series of microphone headbands was intended for everyday use by the same person. The new 4066 headband offers similar advantages where there is a different user everyday.

New adjustment features make it easy to change the placement, from one side of the head to the other, as well as adjusting the length of the microphone boom. As the microphone is omni-directional, it is not necessary to have the microphone in front of the mouth.

The 4065 microphone has a maximum SPL of 144dB and consists of a microphone boom which is neatly fitted into a brace in a loop and 3 clips.

Morten Stove, CEO of DPA Microphones, explains that during the development, two main factors were highlighted:

"The primary issue is the adjustability of the brace behind the neck. Smaller than other models on the market, the 4066 has a 2mm slim tube behind the neck, which is adjustable on both the left and the right side. This feature allows it to fit just about all heads.

The 4066 is designed for broadcast situations and live events where it is desirable to have professional sound and a low microphone profile. Quick mounting solutions mean that presenters can put on the 4066 without the aid of the sound technician.

• **Under \$1000. For more info, contact D2a Pty Ltd on +61 2 9957 5389.**

## Crest Release FB-88 IEEE-1394 Audio Interface



FB-88 back



The FB-88 is an 8 x 8 1394 Audio Interface using the firewire port on a computer. The analogue inputs are XLR/1/4" combo jacks and the outputs are 1/4" TRS. There is also optical I/O for either ADAT or S/PDIF interfaces.

There is word clock I/O and MIDI I/O. Analog stereo monitor out with near zero low latency of the 8 input audio source ports. The unit is 24 bits with variable sample rates up to 96kHz, compatible with most digital audio software. Full metering of all channels is via ten

segment LED array.

Analog inputs and outputs is software selectable for either +4dBu or -10dBV.

Other features include numerous sync options (1394, Word Clock, ADAT, Internal), PC and Mac drivers, MIDI in/out, ten segment LED bar graph I/O metering and >110dB dynamic range.

The unit will retail at \$3,875.00 inc. GST.

• **Crest Audio is distributed by:**  
**Production Audio Services +61 3 9415 1585**

## Peak Audio announce two new MP Series Mixing Consoles



Peak claim their new consoles will stamp the new benchmark in value for money compact portable mixers and compact self-powered mixers.

These consoles feature low noise mic preamps, 6 mono input channels with gold plated XLRs, balanced line inputs and inserts, 4 Stereo inputs with balanced jacks, and good dynamic range.

They also feature solo-in-place and pre fader listen on all channels, 4 bus groups, ultra musical 4 band EQ (stereo channels), 3 Band

EQ with mid sweeps (mono channels), highly accurate 12 segment bar-graph meters, 7 Band master stereo Equalization, and 32 separate 24-bit digital FXs. Pricing for the 14/4/2 Mixer (Powered) is around \$2200, and for the 14/4/2 Mixer (Unpowered) it is around \$1400.

• **Peak Audio is distributed by**  
**CMI: +61 3 9315 2244**



# Design and Integration

*There is a maxim that price is everything.*

Many audio visual installations are chosen on price alone.  
**We don't disagree with that approach.**

Total Concept Projects can meet and beat prices, we do it every day. **But we also work to a superior level of finish, irrespective of how tight the margin may be.**

That's why we have expanded, with over 120 staff, with offices in three states of Australia, and in two countries.

## **Your final job is our product**

Our workbook is diverse. We understand what works best in Clubs, Boardrooms, Educational facilities, Venues, and Hotels. We work comfortably for government or in the private sector.

We aim to answer our clients needs. Small or large. Tender or design-and-construct. **Whatever it is, if it's visual or entertainment based, we live it, breath it, and work with it.**

*Since 1984.*



What will you be using soon?

## NUMARK EXPANDS MIXER LINE



Numark has introduced the EM-260, joining the EM series of effects mixers. The design of the EM-260, which also incorporates a KAOSS pad, is based on Numark's DM-1001X scratch style mixer, with the addition of integral digital effects to suit virtually any musical application.

The EM-260 features selectable three-band rotary EQ/Kills on two input channels comprising two line, one mic and four phono inputs, with gain control, panning and PFL/Master metering. The crossfader slope has a two-position curve and 'hamster' control. Also included are Fader Star, process looping with Blend control, Master/Record outputs and a Split/Blend headphone output.

The Kaoss Pad offers sixty real-time effects programmes plus ten user-friendly digital sampling memory banks. Any audio input can be directly routed to the Kaoss Pad. The EM-260 is priced at \$1199.

• Also new to Numark, two new 10" 3-channel scratch/techno mixers to join its DM series of mixers. The DM3000X and DM3002X stereo mixers feature 3 line, 3 phono and 1 mic input in addition to a front panel mic input with bass and treble control.

The Numark DM3002X features individual PFL meters and process insert looping on all channels and the microphone.

Both the models contain a crossfader reverse (Hamster) toggle with an off position and variable slope control allowing the DJ to customise the crossfader to their own unique mixing style. The DM3002X adds fader start along with toggle kill switches for treble, middle and bass allowing for greater control of the mix.

DM3000X Price: \$539

DM3002X Price: \$649

Numark is distributed by:  
Show Technology Australia  
+61 2 9898 1111

## AKG PR 81 UHF Diversity Bodypack Receiver



AKG have released a miniature bodypack receiver in a rugged plastic case with a mini XLR output. Designed primarily for mounting on a camera, it can also be used in a host of other applications. The unit comes with a complete camera mount kit, and an optional camera power adapter allows the receiver to be powered from a camera. The PR 81 has been developed for use with the HT 81

handheld or PT 81 bodypack transmitter of the WMS 81 line.

The PR 81 provides 15 selectable channels for multichannel capability and avoiding interference frequencies. It has a digital four-level diversity antenna management system and adjustable squelch. Security covers protect the channel selector, squelch control, and on/off switch from unintentional readjustment.

There is easy to read RF level, audio level, diversity, mute, and battery status LEDs. The PR 81 features a fixed line level output and adjustable headphones output on the same mini XLR connector. It is powered by standard AA size 1.5 V dry or rechargeable batteries.

Specifications include frequency range of 710 to 865 MHz and a battery life of greater than >5 hours (2 x 1.5 V AA size batteries). The receiver alone will retail at \$999. Kits including a hand held mic (\$1499) or a belt pack (\$1549 with no mic) are also available.

• AKG is distributed in Australia by Audio Products Australia 1800 642 922

## CREST GOES 'X-RACK'



The Crest Audio XR-20 is the first in a new line to be called the 'X-Rack Series'. The XR-20 is a compact rack-mount mixer with numerous features usually found only on larger, more expensive tabletop units. The Crest XR-20 is designed to be used in a wide range of applications including fixed installation, live sound reinforcement, project studio and broadcast.

The secret to the XR-20's enormous flexibility is the number of features that Crest has packed into the mixer, and the high

degree of quality and reliability engineered into its design. These features include a combination of 12 mono with mic preamps and switched 48-volt phantom power capability, and 4 stereo inputs. Each input channel offers four-band EQ, with 18 dB-per-octave high-pass filters on the mono input channels.

Other features include insert points on all inputs, subgroups, aux outs and left, right and mono outputs. There are six aux busses, which are selectable pre- or post-fader in pairs. The XR-20's main outputs use XLR-type jacks, and are switchable between mic and line.

The XR-20's engineering includes grounding design conforming to AES specifications, resulting in optimum rejection of RF and ground-related noise. The XR-20 mixer exhibits less than +/- 30 degrees of input-to-output phase shift. The final Australian pricing has not yet been fixed, but it is expected to be around \$6,000.

Crest is distributed in Australia by Production Audio Services +61 3 9415 1585.

# MACKIE. Digital Systems



## HDR24/96 24-TRACK, 24-BIT RECORDER/EDITOR. SAVE YOUR COMPUTER FOR E-MAIL.

Plug in the Mackie HDR24/96 Recorder/Editor and start recording. No external computer to boot up. No hardware and software configuration nightmares. No compromises like settling for 20-bit audio or just 12 tracks at a time

- 24-track, 24-bit
- Built-in full-featured workstation editing
- Affordable pull-cut media
- Built-in SVGA, mouse and keyboard ports
- Built-in 100Base-T Ethernet
- Two optional Remotes - Remote 24 and Remote 48



Remote 48

### Recording is easy with the HDR24/96

Simultaneously record 24 tracks of 24-bit digital audio...without waiting for lockup, tape shuttle or CPU lag. Drop up to 192 alternate takes into "virtual tracks". Record onto affordable, removable media that you can swap in and out for each project

And do it all with your hands on a familiar, analog-style machine (or two sizes of wired remotes) instead of resorting to myriad mouse clicks. All basic functions are right on the HDR24/96 front panel including transport buttons and a Record Enable button for each track.

### Editing is easy with the HDR24/96

Plug in an SVGA monitor, keyboard and mouse, choose from 2x, 4x, 8x, 12x or 24-track views and then watch them scroll smoothly past a centreline. Mark hundreds of cue points and four locate points for looping and auto-punch-in modes.

Use the mouse to "scrub" individual tracks, Cue, Punch and Loop points with continuously variable velocity. You can audition regions, modify their start/end points instantly, create fade-ins/fade-outs, add volume envelopes and lots more.

### Play with the HDR24/96

Play back 24 tracks of pristine digital audio instantly. It will be synced rock solidly to everything in your studio, from MIDI-based sequencers to VTRs (via SMPTE & video black burst). Then let others play with your tracks anywhere in the world thanks to built-in Ethernet port and FTP server.



**Have a Demo at SMPTE  
10-13th July 2001  
Stand A51**

## WE'VE ADDED SO MANY NEW FEATURES THAT WE SHOULD PROBABLY CALL IT THE MACKIE DIGITAL 8-BUS MK. 3.0

Other digital mixers get old. The Mackie Digital 8-Bus gets better and better. We just added over 50 significant enhancements with our new, free Mackie Real Time OS™ 3.0 upgrade including...

- 3rd party plug-ins
- Enhanced dynamics
- Pre-DSP inserts
- 200 levels of undo
- 48-channel overview screen
- 24-bit Alt EQ
- An advanced Mix Editor with auto-punch, view sizing arrows, auto loop SMPTE time code boxes, Loop In/Loop Out, Punch In/Punch Out and Locate markers in the time bar
- Event Automation Track
- Enhanced Surround Sound mix environment with Depth of Centre and LF Gain Control for each channel, surround-corrected bus and track assignment, front-to-rear pan via D8B control surface or MIDI and a 72-channel Overview window that instantly shows you where everything is
- Enhanced flexible MIDI I/O mapping for all channel strip and Master parameters
- 24-bit plug-in inserts across the main LR buses



Drawmer™ Expander Plug-in



Massenberg Stereo Parametric Equaliser



Mackie Real Time OS 3.0 Fat Channel

We could go on...but the main point is that when you buy a Mackie Digital 8-Bus now, you're not just getting a superb, productivity-boosting creative tool. You're buying the only digital console with an open architecture that provides for future enhancements, too. Mackie Real Time OS™ 3.0 is dramatic proof and there's still more to come.

# MACKIE. Digital Systems

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"...the HDR24/96 is a  
stunning development  
with excellent sonic  
quality, and an extensive  
feature set...it's easy to  
use and priced right.  
This one rocks!"

George Peterson  
Mix Magazine March 2001



Need to back up a couple of songs?  
Plug a Mackie Media™ Project drive  
into the HDR24/96 external bay and  
transfer over 2GB to an ORB™ disk.



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Divide the cost of a Mackie  
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tunes you can record on it and  
you'll appreciate why we call it  
an affordable medium.  
Non-linear hard drives store  
audio data only, not silence.  
Tape (and linear hard disk  
recorders) just rot! merrily  
along...eating oxide  
and costing money.

Made by  
Mackolds in  
Woodville  
WA, USA



What will you be using soon?

## AVtransfer Software Grows

AVtransfer, DSP Media's professional file transfer software package, is enjoying steadily increasing sales since its debut last September at AES 2000.

AVT is an easy to use format conversion utility that can read, play and combine audio files in many of today's leading professional formats including AIFF, WAV, and BWA as well as difficult or obscure OMF files that are version specific or not properly compliant.

Projects may also contain any mixture of file formats, which can be neatly converted and exported in a chosen format.

A feature new to AVT is the OMF Smart Filter which automatically detects and, where possible, corrects errors found in OMF files making it possible to open a whole range of OMF v1 and v2 files and export them as separate B/WAV or AIFF/C files or as a clean, error free, OMF v1 or v2 files.

AVT can prepare audio files for file transfer and conversion between multiple professional workstations. The utility produces fully compatible OMF files that are easily read by systems supporting OMF such as Avid, Sadie, Pro Tools, and AMS Neve Audiofile. AVtransfer is not limited to audio-specific files and can also be used in the video workstation domain.

AVtransfer can also import CD sound effect libraries onto hard disk. The program can translate the tracks as they are imported using all the standard file translation.

• DSP Media: [www.dspmedia.com](http://www.dspmedia.com)

## Palm goes DMX!

Is that a lighting console in your pocket... Interactive Technologies Inc, a manufacturer of professional stage lighting controls, have revealed Figment DMX Version 4.0. This new upgrade extends the features available in this handheld DMX for PalmOS control solution.

Figment DMX is a software package that provides sophisticated lighting control console features to handheld computing devices based on the Palm OS platform, like the popular Palm and Handspring series connected organizers. Connected to the company's Sidewinder DMX console interface, any Palm OS compatible device has complete control of a DMX lighting control network.

Version 4.0 of Figment DMX adds over 50 new features, including the ability to create complete shows for downloading into the Sidewinder console interface for stand-alone playback. With

Sidewinder's stand-alone playback function, the Sidewinder interface can act as a playback controller, running shows without any intervention to a Palm handheld.

Additional features in Version 4.0 include tighter integration with moving light functions, better stage level management, improved macro functions, numerous ease of use improvements, new color screen features, various performance enhancements, and more.

The Figment DMX software application for Palm OS is available now from Interactive Technologies' web site. The download is free and Figment operates in demonstration mode without a Sidewinder interface. The Sidewinder DMX interface is available for purchase directly from

Interactive Technologies. Pricing starts at US\$449.00. • [www.interactive-online.com](http://www.interactive-online.com)



## Seagate breaks density record with new 40 gigabyte per disk hard drive



Seagate Technology announce their newest U Series disc drive, the first offering up to 80 Gbytes on just two platters and a record-breaking density of 32.6 Gbits per square inch, is now shipping. The new U Series is the sixth generation of the best-selling hard drive. U Series was designed for value through simplified design.

In a unique Seagate advance, the new U Series spins up faster than previous models, improving time-to-ready by 35%. It features

faster internal transfer rates of up to 54.5 Mbytes per second, an 8.9-msec seek time, the largest cache in its class at 2 Mbytes, and the Ultra ATA/100 interface for external burst transfer rates up to 100 Mbytes per second. With Seagate's exclusive 3D Defense System and 'sound barrier technology' (SBT), U Series offers a combination of ruggedness, performance and quiet operation for mainstream PC and CE applications.

This generation of U Series also offers a disc drive created specifically for applications that demand outstanding acoustics performance. U Series CE, now shipping to CE OEMs, utilises fluid dynamic bearing motors to achieve idle acoustics of 27db. The initial suggested resale prices are:

60GB 5400 RPM US\$195

80GB 5400 RPM US\$275

Australian pricing will become available very soon, when the drives themselves arrive in the country.

• Seagate Technology: +61 2 8748 2700  
[www.seagate.com](http://www.seagate.com)

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### Electronic Contacts

Kemp  
Marketing Director  
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Mickan  
Technical Product Manager  
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Polkinghorne  
Sales Manager  
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Pricor  
Executive  
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Barzaghi  
Executive  
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Lee  
Production and Film Lighting  
@cdaust.com.au

Pappas  
Sales Executive  
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Baxter  
Support  
@cdaust.com.au

Smaragdiou  
Manager  
@cdaust.com.au

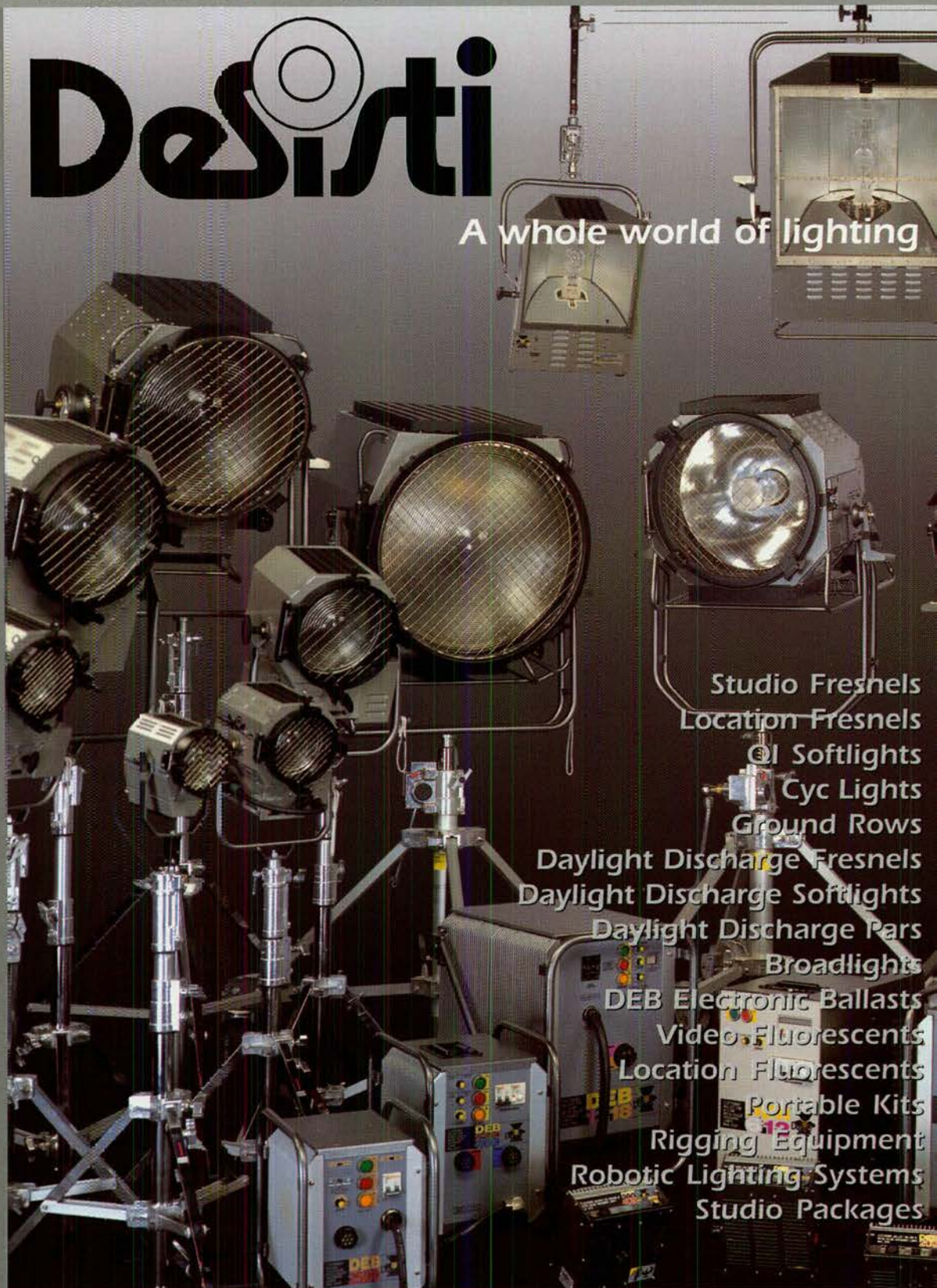
### Links

Some of our suppliers who  
can visit on the web.

- [coemar.it](http://www.coemar.it)
- [desisti.it](http://www.desisti.it)
- [compulite.com](http://www.compulite.com)
- [stardraw.com](http://www.stardraw.com)
- [doughty.co.uk](http://www.doughty.co.uk)
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- [futurelight.com](http://www.futurelight.com)

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By John Grimshaw

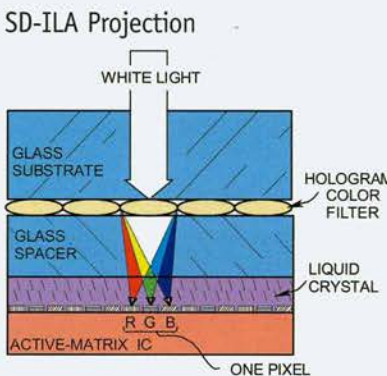
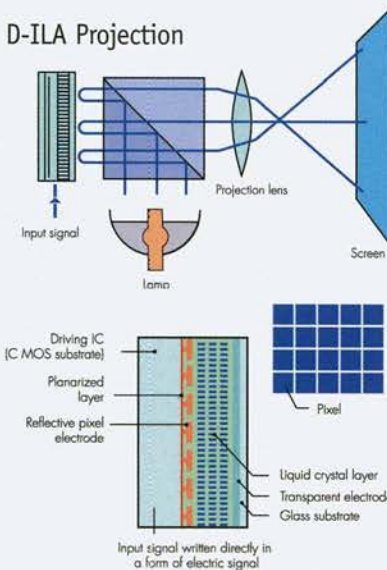
# PROJECTION: IMAGING ENGINES

Including: What on earth is LCOS?

As the saying goes, "There is always more than one way to skin a cat".

In the case of projection technologies, any number of technologies options will happily co-exist in the marketplace.

This year's Infocomm showed that the new projection format known as LCOS is making a firm step into the marketplace. So, what are the options, and what do they mean...



## CRT - Cathode Ray Tube

CRT projection solutions have been squeezed out of the range of options by most manufacturers today - except in the realm of home theatre. The characteristics of a good CRT projector included excellent resolution and contrast, but the newer technologies are finally reaching the point where they can do everything a CRT can do, but brighter and easier.

CRT projectors use three projections 'guns' - one each for red, green and blue. Each of these guns is essentially a hotted up version of a standard television, with extremely bright light output. Once the light leaves the display surface, it passes through a lens arrangement and out to the projection screen.

The typical CRT takes a significant amount of time to set up and do not enjoy being moved about. This is because each coloured tube needs to be adjusted so that its image precisely overlays each other colour. The process of doing this is commonly known as 'convergence'. The tubes themselves have a limited life, and are increasing expensive to replace as the technology becomes superseded.

## D-ILA - Direct drive Image Light Amplifier

The technology behind this system was originally developed by the Hughes Corporation, and called ILA. JVC subsequently developed and marketed the variation called D-ILA. Like DLP, D-ILA is a reflective technology, but it uses liquid crystal layer to control what is reflected.

The '3-Chip' D-ILA projector uses a single chip for each of the red, green and blue images. Using a separate prism for each chip, the required coloured light is reflected directly on the surface of the chip that generates the image for that colour. The light passes through a liquid crystal layer, reflected off an electrode (which is used to activate the liquid crystal), passes back through the liquid crystal and out of the chip. The electrode can activate the liquid crystal to prevent light passing for that pixel in that colour. High speed switching the electrode creates the desired shades of grey, and because the light has to pass through the LCD layer twice, this system produces excellent blacks.

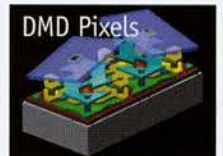
JVC have designed a single chip D-ILA, (SD-ILA) but as yet we are not aware of any device in mass production that applies this option. The design of this option is quite unusual. White light is sent to the chip in the same way as the coloured

light is sent to the 3-Chip design. When the white light meets the chip, it first passes through an additional prism layer which splits the image into red, green and blue. These separate beams pass through the LCD layer, is reflected off the electrode layer and goes back through the LCD layer to be recombined by the same prism layer into the desired light for that pixel.

There are two big advantages to D-ILA, excellent contrast and a very tight pixel 'pitch' - the ability to get the pixels very close together. Originally, JVC used this technology exclusively, though last year JVC announced that it would sell the D-ILA chips to other manufacturers.

## DLP - Digital Light Projection

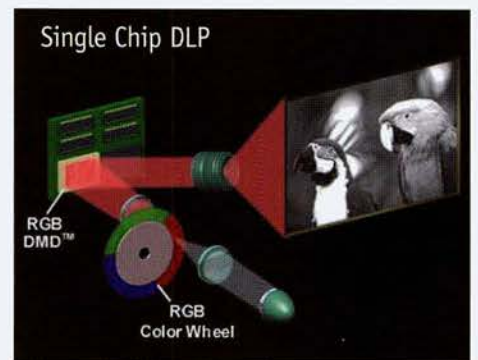
Originally designed to overcome the shortcomings of LCD projectors, DLP was developed by Texas Instruments. DLP uses a 'Digital Micro Mirror' (DMD) chip that is a cluster of tightly packed mirrors, one for each pixel of resolution. Each mirror is moved by the activation of electrodes behind that pixel. That move allows



light to be reflected out through the optics of the projector. Each pixel can be switched on and off more than 100 times a second, so varying this switching speed allows the creation of at least 1000 shades of grey for each pixel.

In a single chip DLP, the white light source is directed at the DMD chip through a high-speed colour wheel. The wheel has red, green and blue segments, to which the DMD chip is synchronised so that the desired amount of each colour is emitted through the lens.

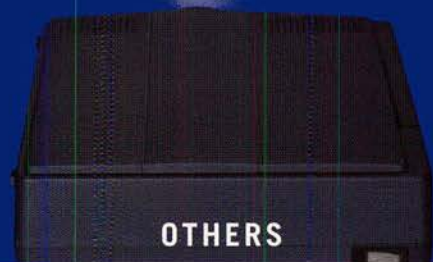
The '3-chip' DLP projector uses three separate  
*(continued over page)*



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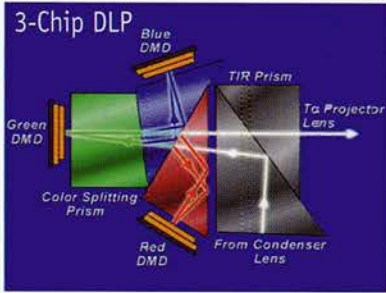
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By John Grimshaw



DMD panels to produce the final image. The white light from the source is split into red, green and blue using prisms, which is in turn directed to each of the three panels. The resulting reflected light is then summed together via another prism, and emitted through the lens.

This system potentially allows the image to have better 'blacks' than LCD, though it should be noted that this is not always the case.

**LCD - Liquid Crystal Display**

LCD technology was already old when the first projectors were rolling of production lines more than fifteen years ago. The '3-Chip' LCD projectors use three separate panels to produce the red, green and blue components of the projected image. Usually, the source light is coloured and then passed through the LCD panel for that colour. Using prisms, the three separate coloured images are summed together and then emitted through a single lens.

'Single chip' LCD projectors are much simpler, and use a colour LCD panel (it has three colour layers). The light simply passes through the panel and is then projected through the lens.

The biggest drawback to any LCD is that a small amount of light can still pass through the display panels when all pixels are 'black'. The result of this is that 'blacks' are can be slightly grey. The worse this effect is, the worse the contrast ratio is for that device.

However, manufacturers continue to work at solving this problem, resulting in LCD projectors with very respectable contrast ratios - some are even better than equivalent projectors using other technologies.

block, with a slew of manufactures now bringing LCOS devices to the market. It takes the simplicity and cost effectiveness of a standard LCD, and adds elements of the reflective technology perfected by D-ILA to produce an innovative solution.

The 3-Chip version of the system beams pre-coloured red, green and blue light into three separate LCOS chips. The light is simply run through a polarizing filter and aimed at the chip. At the chip, the light passes through the LCD layer, reflects off the back surface and passes back through the LCD layer. The light then exists the chip and heads towards a second polarizing filter. The three separate coloured images are combined into one image using a prism, and then projected through stand lens optics onto a screen.

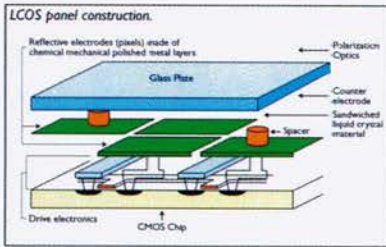
A single chip LCOS device uses a colour wheel (in the same way as the DLP single chip option) to create the full colour image.

It is very likely that LCOS will quickly move to completely replace conventional LCD, largely because of the cost effectiveness of production and two major optical advantages. The first of the two optical advantages are that the pixel pitch (space between pixels) is at least as good as and possibly better than D-ILA. Secondly, the quality of blacks can be enhanced due to the fact the light has to pass through the LCD layer twice before leaving the projector.

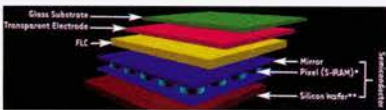
**(f)LCD - Ferroelectric Liquid Crystal Display**

According to the literature from Samsung, this type of imaging engine is remarkably similar to LCOS. Elements of Samsung's new product range of rear projection displays use (f)LCD. This is a product of Samsung's own semiconductor manu-

**LCOS Chip**



**(f)LCD Chip**

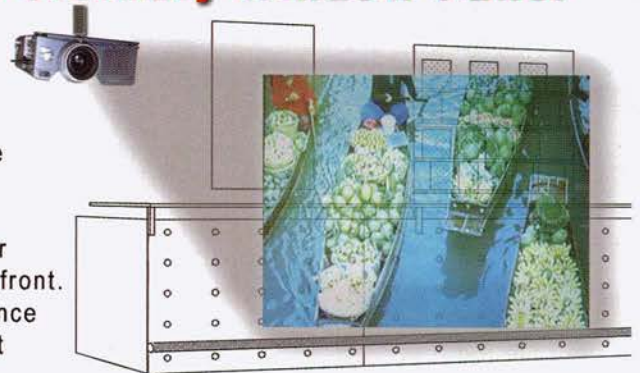


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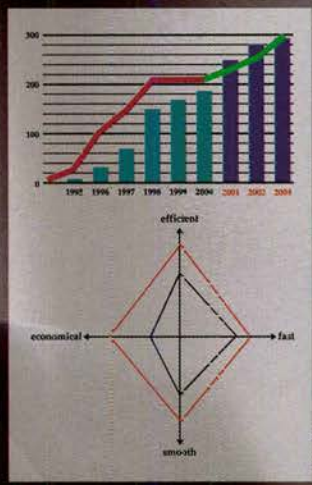
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## Glowing Elephants and Swinging Courtesans

**Moulin Rouge gets Lit**  
By Madeline Murray

Love it or loathe it, there's no denying that *Moulin Rouge* looks outrageously thrilling. The sets are so vast and panoramic that you'd swear the film was shot in the old *Gone with the Wind* days when Atlanta was built on the back lot. Every shot is dazzling; full of verve, colour, and light. *Moulin Rouge* is one huge firework display of visual virtuosity, incandescent and shimmering with hot rod vitality.

It is 19<sup>th</sup> century Paris (sort of). The courtesan and chanteuse Satine is pledged to the wicked wealthy Duke, whose money will transform the Moulin Rouge from cheap cabaret to grand theatre, and make Satine a *real* actress. But Satine (Nicole Kidman) has consumption as well as the hots for a poor poet (Ewan MacGregor). He writes a lavish stage show for her, which is presented in the revamped theatre.

The story may be simple, but nothing else is. *Moulin Rouge* is the biggest lighting job to hit Australia. The sets took up five sound stages of Fox Studios in Sydney. Doug McAlpine, the Director of Photography, brought in American Gaffer Steve Mathis who enlisted Simon Lee as the Chief Rigging Gaffer. I met the ever-youthful Lee at the

Panavision Lighting office where he is currently contracted to streamline the rental system.

Lighting equipment was supplied by Panavision Lighting, who had to substantially increase their Wieland cable and dimmer distribution systems. "It took us into a new league in terms of the size of the dimmer rig that we had on stage, and the number of circuits that we wanted on the set," Lee said.

### The Moulin Rouge exterior, and the Street set

One of the biggest sets was the massive exterior of the Moulin Rouge garden, which featured a huge windmill and the three-storey elephant where Satine lived. Also built in this stage was the Street exterior set.

The Street and the Garden were given an overall ambient light, and the sky behind with the rooftops of Paris for the Street set was digitally created in post production. A strip of chroma key blue 40 metres long and 2 metres high was painted along the cyc. The lighting crew lit the chroma strip with Super Blue tubed Kino Flo units. This was one of

*The story may be simple, but nothing else was. Moulin Rouge was the biggest film lighting job to hit Australia. The sets took up five sound stages of Fox Studios in Sydney.*



the many challenges for the lighting crew as the kinos had to be mounted at the bottom of the blue screen, pointed up and masked by the set façade. Sounds fairly straightforward until you realise the set was covered by Special Effects rain sprinklers. RCDs were extensively used in all the power distribution.

To back light the rain, the Production's riggers, Tri Point Rigging, installed another truss where the lighting crew hung eight 10K fresnels.

These two sets took up Stage One, which measured 86 x 41 metres. Every six metres along the stage, there was power for lamps from 10kW down. At designated plot points, there were feeds for 20kW fresnels, as well as feeds on all the motorised trussing. For the Garden set, back lights which included a 20 kW and a number of 10 kW's were mounted on the hundreds of metres of truss used for the huge scenic canvases of the Paris sky. To light this painted backing cloth a combination of four bank cyc lights and 5kW skypan gelled with Lee 165 Blue were used.

The lighting crew put 5kW's and 2kW's and Source 4's along truss mounted on the body of the set, over the top of the elephant. Normally for an ambient light on a set like the Garden and the Street, the lighting crew would rig 50-80 6kW space lights to put in an overall ambience. But, incredibly, they only had three days of shooting in the garden par-

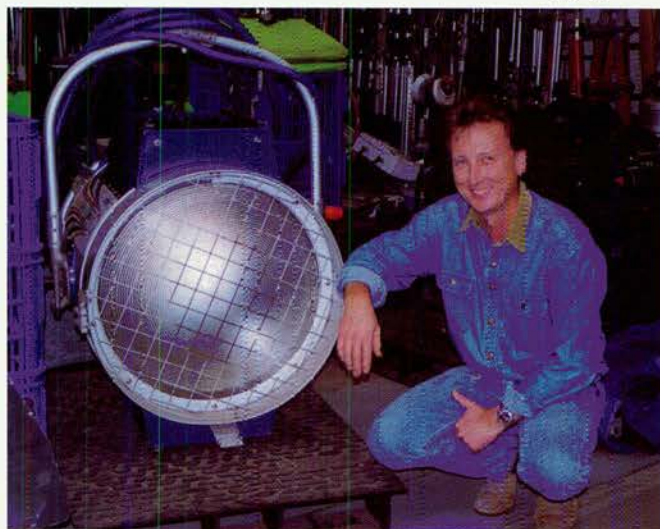
of the set with the elephant, and two days for the street exteriors. Both sets had to be lit and rigged and ready to go during the five days of shooting, so space lights which are conventionally used to provide an overhead ambience weren't viable, time and labour wise. Instead, the lighting department went for helium balloons which fly themselves.

For the base ambience over the garden set, they used a 16kW HMI balloon, 6 metres in diameter provided by Panavision Lighting. This was colour corrected with half 85, so even though they were shooting for a tungsten balance, they kept the ambience half blue. On the Street set two of the 16kW balloons were used.

Everything else came from the floor. Lee said that, "Don was big on using 10kW's bounced off muslin, which gave a soft reflected light.

We used all sorts of lights, anything we could get,

Simon Lee, Chief Rigging Gaffer





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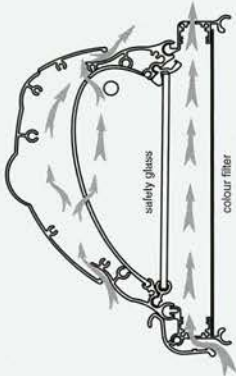
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really. Fox brought in 20 Mole 10kWs, 20 5kWs and 10 2kWs from their lighting store in LA in addition to all the Dinos, 20kWs, 10kWs, and 5kWs that Panavision supplied."

Thousands of practical lights, 15W pilot light globes, were part of the set design for the Garden, Street and interior Moulin Rouge. These helped pick out the detail of the set and add another dimension. The Art Department had three electricians working for most of the production installing practical globes, which were then wired into the onset lighting dimmer distribution system. The blades of the windmill were covered in red lights, powered via a slip ring system.

### Inside the Moulin Rouge

Another massive set was the interior of the Moulin Rouge, a vast space that begins as a run down cancan hall. In the course of the film, it becomes a rehearsal space, a tango floor, and finally a lavish stage show with audience.

The lighting department had about 750 dimmer channels covering the hall part of the set, which included all the practicals and even outlets under the floor to power lamps in the middle of all the dance action. 20kWs, 10kWs and 12kWs dinettes were used as backlights mounted up in the complex "Green Bed" (temporary cat walk) system that the production installed on this set in Fox stage 2, and 24 6kWspace lights rigged over the set for ambience.

Super trooper Xenon follow spots were used in each corner of the set for the tango scene.

For the stage show finale, which basically was a separate set within the set, another 750 channels were allocated, making the total for the Moulin Rouge interior set 1500 channels. The area above the stage show set was so heavily packed with truss that they barely had enough room. There was about 300mm space between each truss, which was loaded with lanterns. Hundreds of Source 4s and 1kW fresnels were the key light sources for the stage show. Spectacular Spectacular was a riotous quasi Indian extravaganza that wouldn't look out of place in some psychedelic Hindu hallucination. The three tier set, packed with dancers, was bathed in washes of shifting light — blue, purple, pink.

"We programmed in various looks that Baz conceived," Lee said. "But ultimately on the day it came down to Baz and Don calling the various looks on the run so there was a lot of frantic setting of cues on the desk and changes on the fly by our

board operator Grant Nuetrosky. The painted cyc/backing cloths for this show was lit from the top by four bank cyc light type units at the top at about five foot centres and gelled with two different colours. The ground rows were the same, which gave us the facility to cross fade between the colour looks Baz was after."

### The smaller sets

The DOP, Don McAlpine, kept it fairly simple in all the smaller sets. An ambience over window views was created by 6 kW Spacelights mostly gelled with Lee 165. The backing cyc clothes generally involved fairly complex lighting, predominantly with 5 & 10kWs to give McAlpine the graduation and colour drop off he wanted.

"The more I think about it, it was very very complex," Lee said. The lighting of that cyc[lorama] outside of Christian's was enormous. We used so many 10kWs and 20kWs on such a small set. The colours that Don got into the backdrop and the miniature skyline buildings were amazing."

The interior of the elephant, the first set shot in the film, was lit with chimera lanterns, as well as many practicals. As with many small sets it is very hard due to space constraints to have much pre lit. The onset crew trimmed and lit specifically for the various shots with smaller units such as 1 & 2kW soft lights, 1kWs, and muslin bounces.

The gothic tower, as well as all the other sets, had very complex overhead catwalk systems with an extensive distribution system. The tower had about 450 dimmer feeds, with 20kWs, 10kWs, 5kWs and many Wieland runs for smaller units.

### Dimmer systems

The dimmers system, supplied ex Panavision Lighting, used Jands HP12 racks, Jands HP6 racks, and many 10kW 3 channel dimmer racks. The 20kW dimmers were all of the single channel variety.

The cues were complex, especially for the *Moulin Rouge* interior Spectacular Spectacular set. Everything ran back to Hog 1000 desks. One desk was for the audience part of the set, one was for the stage show, and a third was back up. "There was a lot of pressure on Grant Nuetrosky, our main board operator," Lee said. "While Grant was running a scene, we had the backup desk being loaded with cues. Unlike theatre, where everything is plotted well in advance, Baz might change the whole concept and want to do something radically different and suddenly a major amount of cues had to be entered. So there was a lot of

>> Please turn to page 79...

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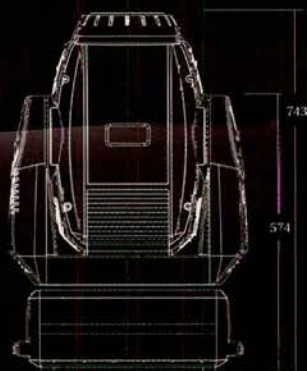
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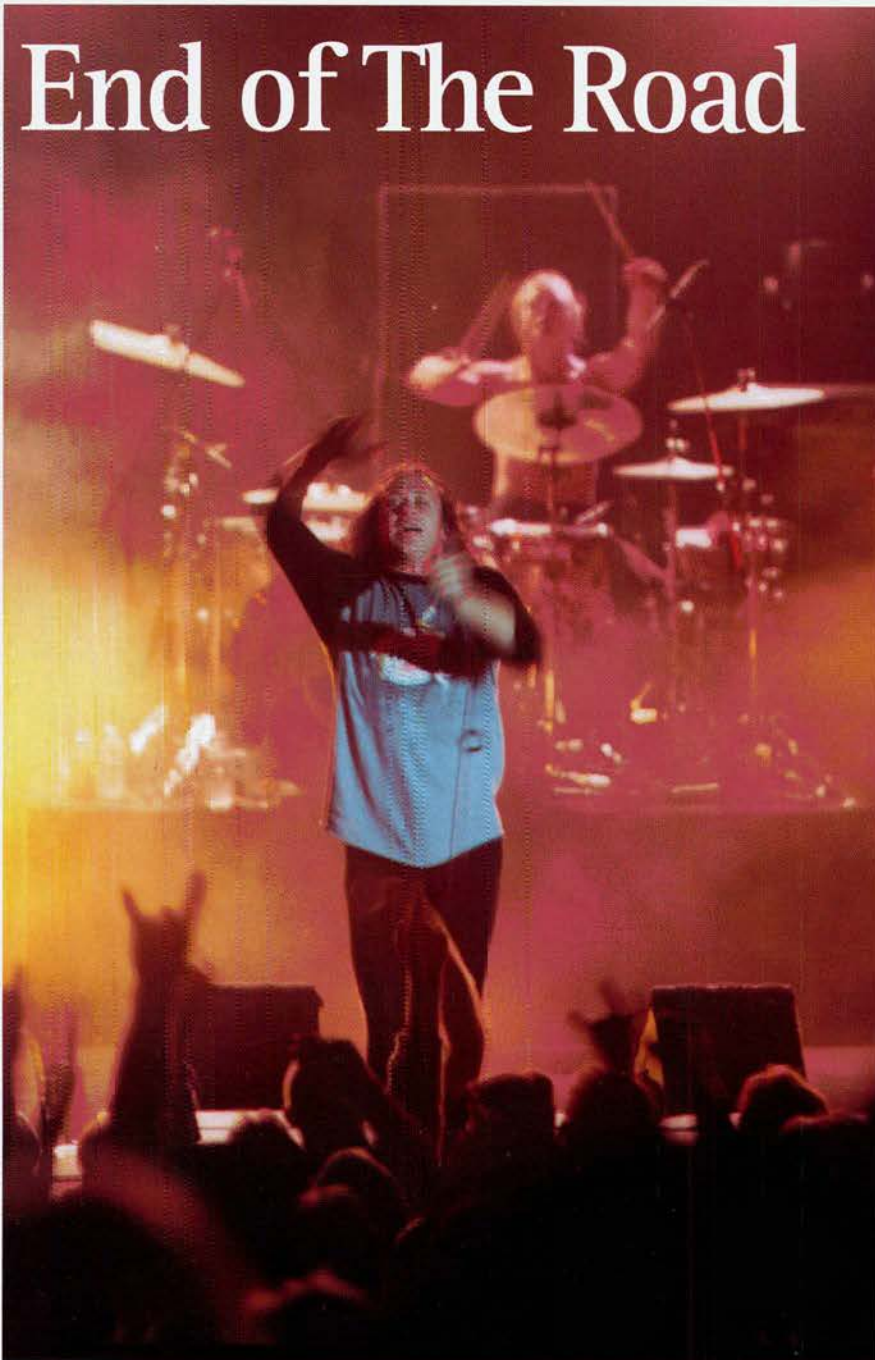


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# End of The Road



By Julius Grafton

Pictures by David Anderson

No longer is it viable for a band to take a twelve tonne truck, lights, PA and two Tarago's on the road - even on the bargain basement overheads of just fifteen grand a week. Vale The Screaming Jets' touring circus.

The band hasn't broken up, rather gone away for an indefinite break and a little lie down. Only they won't be back on the road the way they have been, year in, year out. They toured on the smell of an oily rag for twelve years, grossing income of up to a million dollars a year.

**Aaron Chugg** (pictured left) manages the band, and as he has a live sound and production background, he is ideally placed to comment on the state of the industry, circa 2001.

"In some ways this is a throwback, touring

with a truck and crew. Bands now tend to do a showcase run, where venues have production. But we aren't terribly mobile, the band like to use their quads and heads. It's not like - say - Madasun, who come along and do up to six clubs a night, then go to Melbourne and do it again the next night".

That the Screaming Jets can make it on the road at all is testimony to their legions of fans, plus Chugg's negotiating prowess.

"The band has suppliers they've used for years" he told me before their last Sydney show. "Electric Sunshine (Lights), James Layden (Trucking), and A & R Audio (PA). We get rates based on nostalgia, kindness and love."

Although the band can tour on a budget of 15 grand a week, it isn't easy. Airfares and damage bills for trashed and dirty Tarago's all stretch the budget. Plus there's been the need to accrue for band wages when the touring is in recess. Collectively the band has done over 2,000 shows in 12 years, but as you read this, the wages and the machine have ground to a halt. The members will go their own ways, and the crew will be disbanded.

**Jimmy Vergos** was the tour manager and lighting designer. He has been with the band since the start, and tour manager for the past two and a half years. While he looks forward to a good rest, spending time with his baby boy Joshua and wife Chrissie, he guesses he will end up working with his brother outside the industry.

His gig is best described as ringmaster - organising accommodation, travel, merchandise, crew, loaders and making sure the bands state of mind is relaxed. "Keeping a good balance so there are no dummy spits" he says. He is assisted in rigging of the lighting by **Rick Watergo**, who does merchandising.

The Jets had high production values, and stretched everything to the max. Touring with just six crew, five of them in one Tarago, the band themselves made do with all six members squeezed into another of the venerable road machines. With almost no room for luggage.

"The band took it to the people" Jimmy asserts, "we did gigs from 300 people squashed into a pub, up to big outdoor shows. What's good is that recently I've seen a lot of young kids - 18 to 20 year olds - becoming regulars. In one way, I sense it's all over. The industry's become all 'take, take, take', and the band are totally against the 'boom boom eckie' crowd, and kids with needles in their arms".

"This band are the best bosses to have".

## GOING OUT ON A HIGH

Like the Hoodoo Guru's before them, The Screaming Jets are calling it a day (for now)



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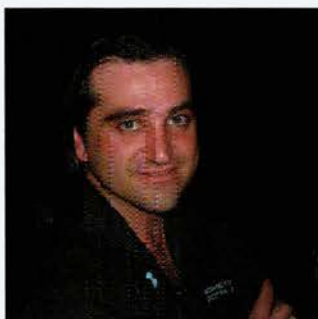


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## BAND TOURING ENDS



LD and tour manager Jimmy Vergos



Sound engineer Dave Henderson.

• *May we add a vote of commendation for the Jets' live sound? Rarely has your writer heard a better rock mix. All was where it needed to be.*

while at the top of their market form. They've toured overseas, had Top 40 hits, and enjoyed all the escapist lifestyles the road can provide. The last tour had sellout shows in all the right places.

Sound engineer **Dave Henderson** has been with the band for seven years, with a year off in between. He originated in Newcastle, from whence the band came, and now also runs a studio - 48 volt - with his partner **Rob Taylor**. "It's a full on rock band" he says of his nightly task.

The touring PA system he has typically used for The Jets comes from A&R Audio, the low key Sydney sound company run by **Ian Richardson**. Of late, Richardson has split his inventory with his son, who operates his own firm.

A&R are notable for making their own amplifiers and speaker cabinets. The system used by The Jets features C40 mid/high cabinets, made by Richardson. "They are a very directional box" says Dave, checking with PA rigger **Steve Fleming** who stated the horizontal dispersion at just 30 degrees.

The speaker stack comprises two Aura subwoofers per side, each with a pair of servo drive 18" woofers. Along side these are two Meyer DS2 boxes, run as low mid cabinets, from 80Hz to 250Hz. Atop these four equally

sized boxes are four C40's each loaded with a horn loaded 12" speaker, and a Radian horn.

For good measure, four Meyer 650 subs are placed in the middle of the stage front, to reinforce that this is, after all, a rock show.

Dave mixes on the 42 channel A&R TAC SR9000 console, which he loves. "It's got that great Amek sound, with preamps and Eqs that I like. Plus, the desk and racks are all multipinned".

### RECORDING THE LAST SHOWS

Engineer **Greg Clarke** came in from Electric Mountain Studio to commit the last three Jets shows to multitrack. A Radar II system from iZ Technologies was sourced from Factory Sound in Melbourne. Radar is well known under its previous Otari brand, but recently became available direct from its maker.

Radar is an industrial strength recorder in the style of Fairlight's Merlin, a stand alone 24 track system that replaces a 2" analogue recorder. Radar is a hard disk recorder with a proprietary operating system, and custom made hardware, so distancing itself from a PC or Mac based system.

**Artie Jones** from Factory Sound showed

> please turn to page 80

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# Deafened by the Light

Directional Loudspeakers  
by Derek Powell

## About The Author...

Derek Powell lugged his first speaker in the early 70's as a teenager. Trained in Television Operations by the ABC, he spent seven years in Broadcast sound with the ABC and Ten Network.

He joined the Audiovisual and Staging industry in the early 80's when budgets were big and moved to Corporate Video production in 1990 when lugging Fastfold screens and Barco projectors started to get him down.

Derek now manages Video Production and Photography at the University of Queensland. He started as a writer in 1987 and has contributed numerous articles to magazines and newspapers on professional Video, Audio and HiFi.

Along the way he picked up a Graduate Diploma in Film and Television and a Grad Certificate in Management.

**H**ands up any audio operator who has ever seen a performer sharply outlined by a spotlight, with all around in darkness – and wondered... “Why can't I have an Audio spotlight to put sound just where I want it – and only where I want it?” Well, the good news is that current research is bringing that particular dream significantly closer.

Let's say at the outset that work in the field of “highly directional sound” roughly divides up into two broad approaches. The first is to create sound with a loudspeaker and then focus it using acoustical principles into a narrow beam – we'll hear more of that later. But more intriguing is the concept of creating audible sound independently of the loudspeaker - literally out of thin air, which is exactly what Joseph Pompei, a researcher at the Media Lab of the Massachusetts Institute of Technology, has been able to do.

### The Dream of an Audio Spotlight

The story starts in the early 1990's, when teenage part-time musician F. Joseph Pompei became the youngest engineer at the Bose Corporation. Deciding that a major weakness of reproduced sound was the limited specialisation of the sounds he became fascinated by the idea of a system that would have the ability to “choreograph musical instruments in space, just as you would dancers”.

The way he doggedly pursued these ideas as a student through several educational institutions makes a great audio detective story. So stick with me for just a few minutes as we see how he finally cracked the problem through a three-stage process.

### Producing Directional Sound

Pompei quickly realised that a conventional loudspeaker of realistic size would never be able to create the extremely narrow beams of sound he was seeking. It's basic physics that the directivity of the wave produced by a loudspeaker depends on the relation between the size of the transducer and the wavelength of the sound you're trying to reproduce. This results in an effect that all audio engineers are familiar with. From ordinary speakers, bass sounds, which have a wave-

length in the metres, are quite non-directional, but high frequencies, where the wavelength is a few centimetres, much closer to the diameter of the speaker that produces them, become quite directional, resulting in the familiar “beaming” effect of tweeters. If you move up again in frequency, millimetre range ultrasonic waves can be created by a transducer with a diameter many times the wavelength of the sound. These waves become extremely directional which is why they are used like X-rays in medical ultrasound imaging.

So, with a small diameter transducer (about 30 cm or so) you can produce beams of sound only a few degrees wide – just what Joseph was seeking – but at so high a frequency that only dogs and bats could hear them. It was hardly practical for music or speech, but some determined research led on to the second piece of the puzzle.

### Converting Ultrasonic frequencies to Audible sound

Other researchers had already wondered if it were possible to produce sound from interference effects in ultrasonic beams. Scientists discovered that ultrasonic waves interact with the air in predictable ways. They found that if those high frequency waves are modulated with audible sound frequencies, they can be made to self-demodulate as they move through air. It's the same principle used in AM radio transmission where a radio wave modulated with audio can be turned back into sound by a simple diode and earpiece in a crystal set. In this case, the air itself acts like the diode and reproduces the audible sound from within the narrow ultrasonic beam at a distance from the speaker. So a narrow beam of modulated ultrasound could “throw” audible sound quite some distance confined within the beam.

In the early 1980's, researchers in Japan at Nippon Columbia, Ricoh, and Matsushita were successful in using parabolic arrays of many ultrasonic transducers to produce focussed beams of sound – audible only within the confines of the beam. The catch was that the interaction between the air and the ultrasound was more complex than the simple and well-understood amplitude



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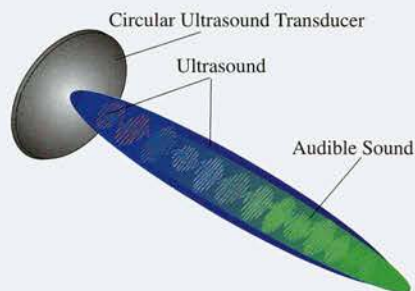
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## Redesigning Speakers

### How it Works: The Audio Spotlight



A flat disc shaped ultrasonic transducer about 30cm in diameter is used to create a broadband ultrasonic signal. Because the transducer is many times larger than the wavelength of the ultrasonic sound, the ultrasound beam (shown in blue) will be highly directional.

Using digital techniques, the ultrasound beam is modulated with signals calculated to interfere with other as they propagate through the air to produce controlled artefacts (green) that lie in the audible sound range.

If the phases of the modulating signals are carefully controlled, the audible artefacts (the sounds we're trying to project) can be made to cancel out laterally and reinforce in the forward direction, resulting in a collimated beam of sound contained within the narrow ultrasound envelope.



Inventor - F. Joseph Pompei with a transducer.

While Connections was not able to confirm by press-time which company is looking to produce this technology commercially, it has been suggested that Sennheiser is developing its own version of this concept. They have called it the "AudioBeam".

modulation model. Their ultrasonic speaker arrays created harmonic distortion levels of around 50% - way too high for a practical audio system. Their research was abandoned, until the redoubtable Mr Pompei took a fresh look.

Now that digital signal processing had 'come of age' in the decade since that work, Joseph realised that if he could model the actual distortion produced when the ultrasound interacted with the air, he could invert it and use that signal like negative feedback in an amplifier to pre-process the audio and cancel out the distortion. All he needed to know was the mathematical equations describing the interaction of ultrasound and air.

### "Cleaning up" the Sound

The answer to this third phase of the riddle came from an unexpected direction. Scientists working on sonar devices to detect submarines for the Navy had been trying to "steer" narrow beams of sound in specific directions. They researched how ultrasound behaved in water, and created the mathematical equations to explain the interaction. Joseph Pompei wondered if he could modify those equations to predict the behaviour or ultrasound in air. He did, and it worked!

Joseph built a prototype speaker and proceeded to demonstrate it, first to his sponsors at the MIT Media lab, and then to the Audio Engineering

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## Redesigning Speakers

### How it Works: The Meyer SB-1



The SB-1 literally uses the same principles as a searchlight, which uses a curved mirror as a reflector to focus light from the bulb (mounted in the centre) into a single parallel beam.

The main reflector is a 1.2 metre parabolic fibreglass dish, which directs and focuses the sound from a 10cm (4 inch) compression driver mounted on rods at the focus of the dish. The driver, housed in a bullet shaped pod, is coupled to a patented conical horn, which is aimed at the centre of the reflector.

The normally circular sound waves produced by a point source speaker are converted into plane, unidirectional wavefronts by the parabolic reflector. (You may have seen the same principle used in reverse to produce highly directional microphones, where a microphone is placed in the central focus of a parabolic reflector).

To correct for unwanted lobbing effects, the dish of the Meyer SB-1 contains an embedded 30 cm (12 inch) cone driver that is fed a correction signal derived from the audio by signal processing electronics mounted within the dish housing.

This gives the system an effective frequency response extending from 500Hz to beyond 15kHz. The housing also contains twin 620 watt amplifiers and a storage space for the driver pod that can be disassembled for transport.

Society. The first demonstration Joseph performed involved creating exactly the kind of "dancing instruments" he had first dreamed about. Using a recording, of a John Coltrane solo, Joseph recounts that: "the saxophone was heard loud and clear, projected like a spotlight all around a movie theatre, and flying right over the audience."

A demonstration and paper presentation to the Audio Engineering Society produced a standing ovation and Joseph Pompei is now working on making the unit a commercial reality. There is no shortage of creative ideas as to how the system might be applied.

### Uses for the Audio Spotlight

An early success has been collaboration with Chrysler in the Dodge Maxx Cab concept truck. By placing transducers in the roof lining of the crew-cab ute, two distinct sound zones are created. That means that the driver and front passenger can be listening to the news or traffic reports, while the kids in the back could be listening to music, playing computer games or even watching TV without disturbing those in front. Now, I guess that could always be done using headphones, but with the Audio Spotlight speakers, passengers can still talk to each other normally and everyone can still hear any external sounds like an approaching siren or other warning tones.

There's no shortage of other ideas for applications of the audio spotlight. Museums and art galleries seem like a natural for this technology. Currently, you can often see people with headphones and walkmans listening to a taped commentary on each piece in the exhibition as they wander around. But this is expensive and awkward. Now imagine standing in front of the piece and hearing a commentary, yet only half a metre away others can enjoy the atmosphere of the gallery free of chatter. Each exhibit could have a narrow "commentary zone" without the space being filled by a cacophony of overlapping sounds. Marketers too have been quick to show interest with thoughts of marketing messages that you only hear as you approach the supermarket shelf. They've even discussed one set of infomercials directed to passing adult ears, while in the very same aisles, transducers aimed only a metre off the floor send the kids a different set of "buy me" messages.

There's an obvious set of applications in theatre where the spotlight could be used to produce moving sound effects or, by reflecting the beam from a wall or ceiling or prop, producing highly directional audio cues to direct the audience's attention.

So how soon before we can buy the audio equivalent of a follow spot? Well, not quite yet. Joseph Pompei is still working on perfecting his system, but others are not far behind. Sennheiser are working on what they've dubbed the "AudioBeam", using much the same principals, which they demonstrated at Expo 2000 in Hanover and the American Technology Corporation are developing systems to precisely target intercom

messages to sailors on US Navy Aegis class Destroyers but concert sound applications are still a way off for ultrasonic systems. While adequate for speech, current Audio Spotlights can't yet produce high volume levels and the frequency response is still limited at the bass end. But if you want to project high-level sound long distances, there is another product that looks more like an audio searchlight compared to the audio spotlight.

### Concert Sound needs a Searchlight

You remember that Joseph decided that a conventional loudspeaker of "realistic size" wouldn't give a narrow beam? Well, he was right – but in the concert sound industry "big is beautiful" and the idea of "realistic size" tends to be, well, different. The Meyer SB-1 is about twenty times larger than the prototype Audio Spotlight and can project sound over 100 metres with amazing clarity within a narrow 10 degree beam width. It was first used in 1997 and astute readers will probably remember that Julius Grafton predicted that it would find excellent use in eliminating the need for delay towers in large outdoor venues (Connections August '98). He was right, and the SB-1 has gone on to make quite an impact on tours like the Celine Dion "Let's Talk about Love" World tour in 1999, at the NetAid Concert in Wembley stadium and events in London's Hyde Park.

It looks like a cross between a WWII searchlight and a satellite dish and was actually developed as a result of the Kobe Earthquake in Japan. After that 'quake, new regulations prevented the hanging of delay speakers in a number of huge domed stadiums in Japan, making concert sound horrendously difficult. Conventional stacks, with horn loaded boxes, which fall off at roughly 6dB for every doubling of distance, couldn't project from the stage to the far corners of the arenas and worse, the spill from unwanted lobes in the pattern





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## Redesigning Speakers

If you would like to find out more about the concept of the Audio Spotlight, here are a few resources:

AES Journal - Pompei, F. J., J. Audio Eng. Soc., v47, 726-731 (1999)

Websites (yes, some of these do not have 'www'):

- [sound.media.mit.edu/~pompei/spotlight/](http://sound.media.mit.edu/~pompei/spotlight/)
- [www.meyersound.com/news/press/soundbeam.htm](http://www.meyersound.com/news/press/soundbeam.htm)
- [slashdot.org/articles/00/08/27/1510225.shtml](http://slashdot.org/articles/00/08/27/1510225.shtml)
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produced massive reverberation problems. So the call went out for an extremely long throw (read "narrow beam") concert speaker system. John Meyer, of Meyer Sound was asked to produce a long throw box with an unheard-of ten degree beam width that could be aimed to precisely cover a section of seating without spilling onto the roof or other flat surfaces.

Luckily, the basis for the design was already in existence – the Meyer Audio Ranging Transceiver System (ARTS). This was a parabolic speaker system that had been used for atmospheric and acoustical research. Used outdoors and pointing straight up, ARTS emitted a tight beam of sound, then listened for a reflection from atmospheric layers and measured distance. It was an unlikely looking concert system but Meyer realised that a parabolic dish produced plane (or straight) sound waves which dropped off at only 3dB per doubling of distance and so could propagate much further than the circular waves produced by horn loaded boxes. The SB-1 was developed on such a tight time frame that full testing wasn't possible before the first systems were shipped to Japan for a series of concerts by Japanese Techno bands.

### Up close and personal – from 150m!

The result of the system's first outing, a 40,000 seat arena in Osaka, was somewhat embarrass-

ing. Not for Meyer, but for the bands - because many of the reviews of the performances raved about the sound system and gave scant notice to the performers! Distant listeners felt that the SB-1's gave an intimate, up-close sound that some compared to nearfield monitors.

After the Japanese experience, the SB-1 was successfully used on tour by Celine Dion, whose production required an "in the round" stage set in the centre of large stadiums. A ring of speakers targeted sound to the upper balconies of the stadium, producing a warm, intimate effect while reducing unwanted spill.

The tight directional control of the SB-1 was also used to excellent effect in the old Wembley stadium, which was notorious for complaints of noise from surrounding residential areas when conventional concert systems were used. The tight pattern of the speakers reduced spill outside the stadium significantly, compared with conventional designs using delay towers.

We're only just at the beginning of this exciting development in audio and it's probably too early to tell how quickly developments will come – but whether Audio Spotlight or searchlight, the future looks bright for directional sound.

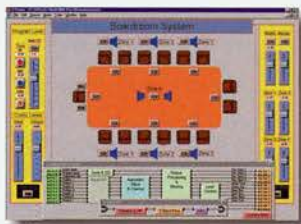
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Lighting

# Mamma Mia!

*Mamma Mia, here we go again..... Mandy Jones manages to bring you the following story, despite strange resistance*



Hugh Calton, Ed Cynerman, Adam Jackson and Chris Younger

## Connections Magazine is 'unprofessional', states Mamma Mia publicist

Connections followed media protocol and called perpetually busy publicist Suzie Howie's office on Monday 4 June, (before Mamma Mia opened on June 9) seeking access, and pictures by our deadline of June 15. Far too busy to talk, they asked us to fax. Mandy Jones did so, and said: 'I understand everyone is busy so I am happy to wait until after the show has opened'.

When eventually forced by inaction to call Ms. Howie just before the opening, Mandy Jones was attacked verbally for being 'unprofessional'.

Show pictures are something a publicist almost always distributes on behalf of the show producer. Although promised at least three times, these did not arrive by our extended deadline of June 20. We had waited and waited.

This reduced this story from a planned three pages to just one.

At presstime, publisher Julius Grafton called Ms Howie to see if there were other reasons for the non supply of pictures. She again stated that we were 'unprofessional' for calling a day before the opening. He was told that the show Producer had also been made aware that Connections was 'unprofessional'.

• *Footnote: the pix arrived on June 21, 17 days after our first call- but were too late for inclusion. We are now seeking an undertaking from this PR firm regarding future shows they work on.*

Mamma Mia is a new musical - that we haven't seen. It apparently tells the story of a bride-to-be's relationship with her mother and the three men who might be her father. The plot is said to be cleverly written around 22 Abba hit-songs which combine to underscore the story.

Mamma Mia recently opened in Melbourne at the Princess Theatre. After a

battle with the show's PR (see item at left) Connections spoke to Head Electrician **Ed Cynerman** and his band of merry men (**Hugh Calton** - VL/Mini Artisan Operator; **Adam Jackson** - Conventionals/Strand 550 Operator; and **Chris Younger** - APC Automation Operator) who were quick to point out that Mamma Mia is a far cry from those big, dramatic and often depressing musicals that usually frequent The Princess.

"It's a lively show - no-one dies, no kids get shot, there are no barricades...but there are chandeliers!" joked Hugh.

The show's lighting is designed by **Howard Harrison**. He is a veteran of British musical theatre, having also designed for drama, opera and ballet.

Apart from a few 'local' improvements, the rig is the same as the original London and US shows. Harrison's design comprises Varilites, Digital Light Curtains, Ministrips, Source Four profiles and pars, and the usual swag of effects type units. As Ed explained, "It's not very complicated, there's just a lot of it".

"We got all the statics from Chameleon - there are about 100 Source Fours with Wybron scrollers, DHA Light Curtains, some Altman UV fresnels with mechanical shutters, one solitary Strand Beamlight, some Twinspins and some other bits and pieces.

"Varilites are a mixture of VL5s on the finale truss, VL6s and VL6Bs on the stage bars, three VL7s for their rotating gobos, and some of the new VL2416 1200watt washlights."

For some punch from front-of-house, four aptly named Super-Trouper 2k xenon followspots did the job. And to give a mirrorball effect in the auditorium, 32 Twinspins were painstakingly focused to wash the audience.

Show control is split with Hugh looking after the Varilites and Light Curtains (including Pitching versions) on a Mini-Artisan, and Andy running the conventionals and effects on a Strand 550. Ed explained that eventually the systems

will be integrated so the 550 will run as the main board and will trigger the Mini-Artisan.

"At this stage while we're getting settled in it's good to have two operators. Then in a couple of weeks R2 (**Richard Pacholski**) will come in and make sure it's all happening and then we'll have just the one operator."

At the Strand 550, Adam described it as a "fun" show to operate:

"There are a few flashy bits, a few bumps and it's pretty constant too which is kind of nice. The music is lots of fun and it's good to see what the audience do - they get up and dance at the end.

"I've got about 247 cues - some of them are VL dummies so the 550 stays in sequence with the Mini-Artisan. We run all the fog and smoke off it, plus scone lights and all the usual extra stuff."

Smoke effects were achieved by using two MDGs run straight off 180kg CO2 bottles, as well as two LeMaitre Low Smoke Generators for fog.

Hugh and Adam are fans of Harrison's design - Hugh likes the fact that the Varilites are prominent in the design and are used in an "in your face" way. His favourite part of the show is the end when the finale truss is flown in packed with specially painted white VL5s.

"All the states during the finale are fantastic. There's lots of movement, sweeping out into the audience and lots of colour changes," said Hugh.

Adam likes the subtleties of the design and the way Harrison uses sun and moon effects to create an atmosphere of time and place.

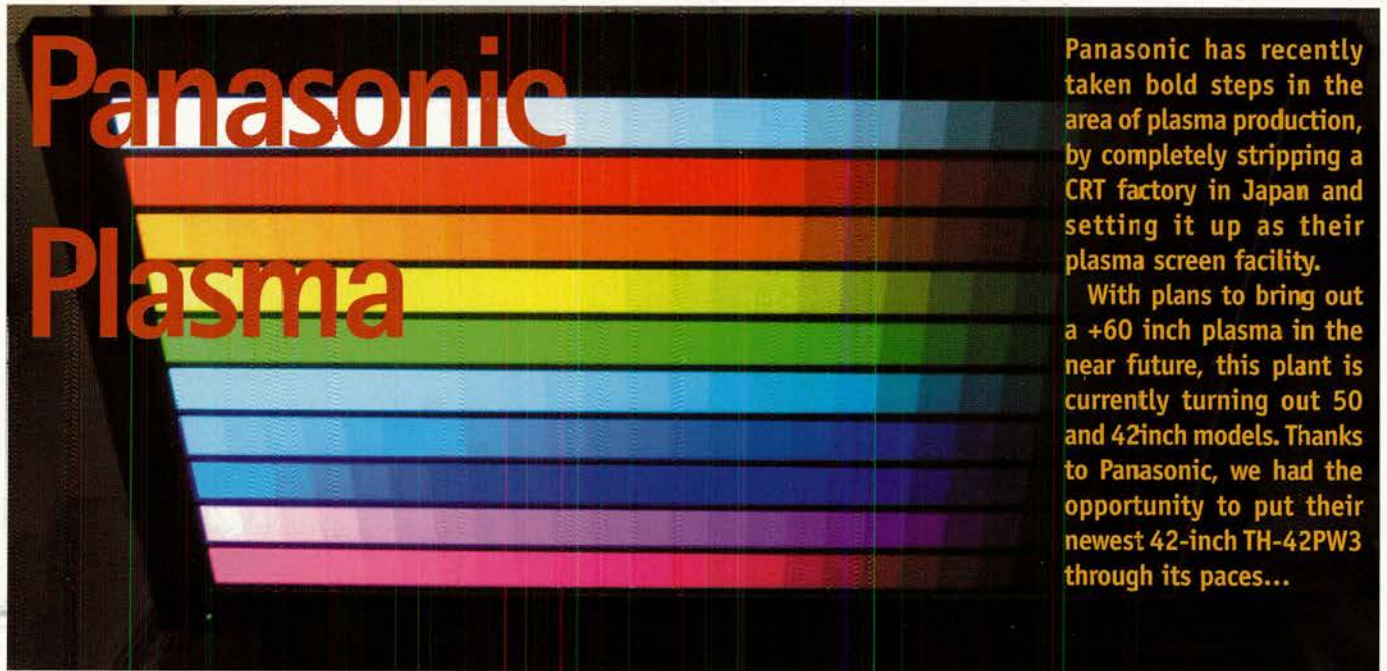
"He has all the light coming from a direct corner as if it's moonlight and then it will switch so there'll be a gobo of the moon up in the corner where the light was coming from," explained Adam.

By far the most impressive effect in the design is the huge 21 foot diameter luminous moon. Built by **Andrew Perry** in Adelaide the huge lightbox comprises 180 fluorescent tubes behind a PVC diffusion cloth to create an incredibly even and bright moon effect.

The international design team were so impressed that the design will be used on the forthcoming Broadway production to replace the less successful neon coil attempt used in London, and the incandescent US version which creates so much heat it requires a chimney and has to be run off a timer so it won't exceed the seven minute limit and start to burn.

Ed explained the show is fairly high-maintenance. Not only does the dark blue high-temperature gel in the Mini-strips require frequent changing, but the aftershocks from the audience dancing in the dress-circle means a nightly re-focus of the dress-circle rail. •

By John Grimshaw



Panasonic has recently taken bold steps in the area of plasma production, by completely stripping a CRT factory in Japan and setting it up as their plasma screen facility. With plans to bring out a +60 inch plasma in the near future, this plant is currently turning out 50 and 42inch models. Thanks to Panasonic, we had the opportunity to put their newest 42-inch TH-42PW3 through its paces...

The 42inch display has a native resolution of 852x480 pixels. While this might seem a little low compared to other brands, it is more than enough to cope with the vast majority of applications for plasmas as shop display, information boards etc. By keeping the resolution down, Panasonic have also kept the production costs significantly lower, allowing them to price this unit very competitively.

Connection and operation of the unit was as simple as you would expect for any monitor. Initially the monitor was run on composite and component video inputs to get a quick look at the picture in its factory settings.

Using the PC 15pin HD input, we tested the display using the Kaaye Consulting Displaymate software. With the source resolution set to 540x480, and the plasma display set to 4:3 mode, I was able to test the native resolution capabilities of the unit. By the time I finished tweaking the display, I found there were almost no image defects that I could not correct.

The documentation supplied with the unit suggested a whopping 3000:1 contrast ratio. This is by far the best ratio that I have seen declared thus far by any plasma manufacturer - and the results of this were born out: in grey-scale and black level tests. In all display patterns, the full range of greys was easily displayed.

The only fault I could find with its display of greys was in a 256 Level Intensity Ramp. This is where the display is sent a signal that starts at black on the left hand side of the screen, and incrementally increases to white (or a specific colour) on the right side of the screen. There were some very subtle variations, making the white ramp less smooth than it should have been. By checking the red, green and blue intensity ramps separately, it could be seen that these variations occurred in slightly different places for each colour. Generally speaking, CRT's can easily cope with this ramp, whereas projectors and plasmas only rarely cope. This is a very minor problem, and would not be detectable during normal running.

One problem - expected to find and didn't was with the blacks. Plasma screens require an electrical charge to excite an inert gas into a plasma state. This then emits UV light, which in turn excites the phosphors for that particular red, green or



<b>Make:</b>	Panasonic
<b>Model:</b>	TH-42PW3
<b>Description:</b>	42" 16:9 Plasma
<b>Brightness:</b>	400/m <sup>2</sup>
<b>Contrast:</b>	3000:1
<b>Native Resolution:</b>	852x480
<b>Dimensions:</b>	1020x610x89 (WxHxD)
<b>Physical Weight:</b>	29.5kg
<b>Speakers:</b>	Optional Extra
<b>Vision Inputs:</b>	Composite; S-Video; Component; 2x RGB (5BNC & 15pinHD D)
<b>Vision Outputs:</b>	none
<b>Vision Source:</b>	All standard TV, and computer signals up to UXGA
<b>Other Features:</b>	Various mounting brackets, RS232 Controllable
<b>Operating Noise:</b>	negligible
<b>Price:</b>	\$15,999

Panasonic Plasma

Plasma Registration

In terms of colour, the registration for a typical plasma (the precise overlapping of the red, green and blue segments for each pixel) is one aspect where the display will have a slight imperfection, and the Panasonic was no exception. This is caused by the fact the manufacturers have not worked out how to put the red, green and blue segments in precisely the same place.

The best test for registration is the "Blink" test. This is where a single colour crosshatch pattern of one pixel wide lines is displayed, and regular segments of those lines 'blink' to one of the other two colours. For some reason, the human eye tends to exaggerate any mis-registration, making a misalignment visible down to very tiny increments.

Because the Panasonic display arrayed the segments for each pixel horizontally, horizontal lines in the "Blink" test looked perfect, while vertical ones seemed slightly out. This is a typical result for a plasma to display.



blue segment in a pixel. Typically, manufacturers to date have allowed a trickle of power to each segment in each pixel, keeping everything in a partially energised state. Like a CRT monitor, when you turn on a typical plasma in a dark room, you can see the screen come to life.

In the case of this screen, Panasonic have eliminated the power trickle. That means that when a pixel is inactive, it is in the same state as if the unit was unplugged from power. That is how they have managed to achieve the impressive contrast ratio of 3000:1, and why the blacks are very black.

As you would expect from plasma, all

colours are beautifully saturated. The TH-42PW3 was able to display any individual colour very smoothly across the full screen surface, with no detectable variations or imperfections.

To summarise, the quality of this display is quite impressive despite the resolution limitations. It would be well suited to 'in store' displays, and typical presentation applications - particularly where fan noise would be too irritating.

Australian users wanting to display HDTV may want to hold off a bit longer, as this model does not cope with the proposed HD standards.

Blacker Than Black

If the whole display has no input, or is sent "black" video, the screen can look as if it is turned off. This can be deceptive to the average user who turns on the unit, and expects to see something happen other than the red standby led turn green. The only audible clue is a sound akin to relays clicking over - for those whose hearing is still pretty good, the 15kHz squeal

that we a conditioned to hear from CRTs is disconcertingly absent. Thankfully, Panasonic have designed the unit to display input information soon after power-up. This little feature was a useful thing for this reviewer - especially when I turned the unit on and then wondered for just a moment if it really was on.



Rating...

Ease of Use:	5/5
Set-up:	5/5
Image Quality:	4/5
Features:	3/5
<b>TOTAL</b>	<b>17/20</b>

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\*features vary by model

# SMALL MOVING LIGHTS

This Market Report has been divided into three categories - Moving Yoke (up to 250W lamp size), Moving Mirror (up to \$5000rrp) and Colour Changers (up to 250W lamp size). As always, we asked the distributors to provide the information contained in this report, so there may be some subjective claims here that should be taken 'with a grain of salt'. Prices are list prices, in Australian dollars and include that countries GST (retail tax).



Coemar ProSpot and ProWash LX



Coemar I-Spot



Futurelight MH-660



High End Studio Spot 250

## Moving Yoke

### Coemar ProSpot LX

Compact moving profile yoke. High quality optics, 6 rotating/indexable gobos, 12 colours, dimmer, strobe, rotating prism, 16 bit Pan/Tilt and remote focus. Onboard diagnostics and LED menu system.

Stylish brand new Italian design uses the latest in VO class injection moulded plastic casing. Ultra low noise operation, Faster movement and new graduated colour selection dramatically increases the standard of this class of fixture. Lamp: MSD/HSD 250

- \$5,232
- Coemar De Sisti Australia +61 3 9467 8666

### Coemar ProWash LX

Compact moving wash yoke for HSD/MSD250w lamp. Full CMY colour mix system & 6 way colour wheel. CTO and CTB colour correction. Mechanical dimmer and strobe on separate channels. Manual zoom plus remote controlled beam shaping and frost. 16 Bit Pan/Tilt with speed channel.

This is the only fixture in this power/price range with an adjustable zoom lens. This allows the user to preset the basic beam angle, whilst still having remote control over frosting and beam shaping, for an increased level of control and functionality. Lamp: MSD/HSD 250

- \$5,232
- Coemar De Sisti Australia +61 3 9467 8666

### Coemar I-Spot **HOT SELLER**

Stylish moving head profile with single arm yoke. 6 rotating indexable gobos, 8 colours, blackout strobe, remote focus and 16 bit Pan/Tilt. PPF (programmable playback feature) allows easy standalone playback of shows, programmed via any DMX console. Very compact dimensions. Uses the latest 150w, 3200K short-arc discharge lamp.

Stunning Italian designed unit ideal for shop windows and architectural installation. The PPF allows the unit to be play up to 10 programmes of 16 steps each, via a simple 6 channel DMX console. User can control programme selection, music activation and override the shutter settings. Internal microphone for stand alone sound activation.

Only unit in this market segment with remote focus, indexable/rotatable gobos and colour wheel, all in the one unit. Very long life lamp is ideal for architectural applications, as well as nightclubs and hire companies. The new CDM/SA discharge lamp has a low replacement cost and very long lamp life (6000hr). Lamp: CDM-SA/T 150w

- \$ T.B.A
- Coemar De Sisti Australia +61 3 9467 8666

### Compulite Luna Yoke **HOT SELLER**

Low profile Pan/Tilt yoke to convert theatrical luminaires into moving units. Adaptor kits to suit ETC

Source4, Altman Shakespeare, Selecon Pacific and Strand SL series, along with many small generic profiles and fresnels. 16 bit Pan/Tilt, 4pin XLR output for scrollers. Optional Focus and Iris drive available.

Absolutely silent in operation. Closed loop positional feedback system means no movement during fixture power up or reset. Internal PSU for 24v DC colour scrollers. Can also be used to turn a LCD/DLP video projector into a moving light! Very low profile as power supply and electronics are contained in the yoke, not in the base.

The silent operation combined with silky smooth low speed movement make this unique yoke perfect for specialised installations. The ability to adapt it to suit cameras, plasma screens, microphones, as well as most type of light fittings, opens up completely new markets for this yoke.

- \$6,750
- Coemar De Sisti Australia +61 3 9467 8666

### Futurelight MH-660

Lightweight moving yoke profile with 250w discharge lamp. 11 colours+white, six rotating/indexable gobos, remote focus, fan speed and rotating prism. In-built macros for gobo/prism combinations. 16 bit Pan/Tilt with speed control. Full LED menu and stand alone mode.

Possibly the top selling small yoke in Australia. Uses the popular MSD/HSD250w lamp with full condenser optic system for crisp bright images and excellent focus across the entire beam. Optional wide or narrow objective lenses as required. Very fast pan and tilt movement. Supplied with 6 spare metal/glass gobos. As seen on Logies 2001 and Star Struck on Ch9. Lamp: MSD/HSD 250

- \$4,472
- Coemar De Sisti Australia +61 3 9467 8666

### Futurelight MH-640

Lightweight moving yoke wash light with MSD/HSD 250w discharge lamp. Full CMY colour mix system + 6 way colour wheel. CTO + CTB correction. Manual fresnel lens for beam sizing. Remote beam shaping and frost provide additional beam size control. 16 bit Pan/Tilt with speed control. Full LED menu and stand alone mode. The ability to manually adjust the beam angle by sliding the fresnel lens gives the user more flexibility in beam control. Incredibly fast Pan/Tilt movement, plus motor control channel allows operation in Vector or Tracking modes. As seen on Logies 2001.

- \$4,470
- Coemar De Sisti Australia +61 3 9467 8666

### High End Studio Spot 250

Studio Spot 250's lightweight & durable construction houses classic High End features such as dichroic color media and variable iris, along with newer developments like the innovative LAD system and on-board

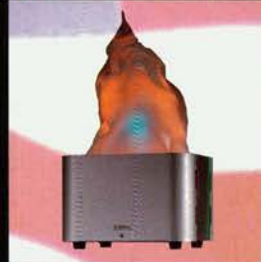
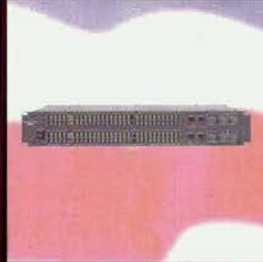
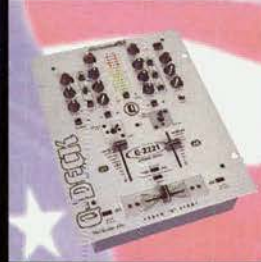
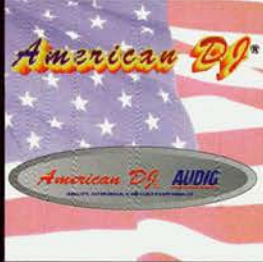
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## Small Moving Lights

Infinity Moving Spot 250



programming and playback capabilities. The Studio Spot 250's long lamp life and sharp optics make it a colorful and reliable addition to any nightclub or store. Project custom LithoPatterns of company logos, product brands, pictures, patterns, or messages virtually anywhere.

With 540° of pan and 270° of tilt movement, the fixture can move colorful images throughout any environment. Seven interchangeable high-resolution LithoPatterns are fitted as standard and are easily replaced with logos or custom images. All patterns smoothly rotate and fully index; it's also possible to superimpose static and rotating images for multi-focus and moiré effects. Features 12 colors, static frost, variable iris, variable strobe, remote focus standard 18° lens (optional wide angle lenses are 27° and 40°), on-board programming and playback eliminate need for control console, full optical dimming and fade to black, optical encoders automatically correct the head's position if it is manually moved.

- \$17,000
- Universal Lighting and Audio +61 7 5510 1333

### High End Studio Colour 250

This light packs stunning color mixing and solid performance into a streamlined unit that's ideal for a variety of mid-range applications, such as nightclubs, themed environments or television studios. Studio Color 250's compact size makes it easy to install where space is at a premium or access is difficult. Instantly fill any environment with vibrant, moving colors. Studio Color 250's light-weight and durable construction houses classic High End features such as dichroic color media and variable beam shaping along with newer developments like on-board programming and playback capabilities. Producing over 7000 field lumens, Studio Color 250 has plenty of punch for any wash application. CMY Colour mixing and variable zoom 21-25 deg.

- \$13000
- Universal Lighting and Audio +61 7 5510 1333

### Infinity Moving Spot 250

This new release product features a HSD 250W lamp and professional optic system to maximize the light output. Smooth, fast pan (360deg) and tilt (270deg)

movement, 7 dichroic colours with rainbow, plus 7 variable speed rotating gobos and strobe functions. DMX512 on board.

- \$2626
- Universal Lighting and Audio +61 7 5510 1333

### Martin Mac 250+ **HOT SELLER**

A compact, moving head, profile spot luminaire, the MAC 250+ is a dedicated projection version of the MAC 250. Well suited to a wide range of lighting applications and ideal wherever razor-sharp effect projection is a must. Features a 250W MSD lamp (2000 hours), replaceable colour filters and indexible gobo rotation.

- \$5999
- Show Technology Pty Ltd +61 2 9898 1111

### Martin Mac 300

An automated moving head washlight luminaire - a compact version of the successful MAC 600. Produces a wide variety of colours and effects and is used wherever dynamic colour wash is important - both indoor and out. Uses a 250W MSD lamp, CMY colour mixing system and variable frost for zoom effect.

- \$5999
- Show Technology Pty Ltd +61 2 9898 1111

### Martin MiniMac Profile

An automated, single-armed, moving-head, profile spotlight. Its compact and stylish appearance makes it attractive for all kind of applications from restaurants to discotheques. Seven easy to change patterns combine with 12 colours giving endless possibilities for decoration. Up to 7 presets can be programmed in the on-board memory for full stand-alone operation.

- \$3999
- Show Technology Pty Ltd +61 2 9898 1111

### Martin MiniMac Wash

An automated single-armed moving-head fresnel washlight. Countless possibilities for indoor mood and atmosphere generation. The two spread angle options of 40° and the manually selectable 23° provide the possibility for a very even colour wash also on short throw distances. Up to 7 presets can be programmed in the

Martin Mac 250+



Martin Mac 300



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- \$3599
- Show Technology Pty Ltd +61 2 9898 1111

**Sagitter Spot 250**

High efficiency parabolic reflector with double condensor optical system deliver a powerful sharp cutted beam 15° standard objective (12° and 18° optional). Rotating gobo-wheel with 6 interchangeable and indexable rotating gobos plus open. (4 metal gobos, 1 multicolor metal-gobos and 2 glass gobos are included as spares. Gobos are indexable on 360° and variable speed continuous rotation in both senses.

3-facet prism can rotate in both directions at variable speed Macro-function for rotating gobos/rotating prism combinations. Colour-wheel with 11 dichroic filters plus open with variable speed continuous rotation (rainbow effect) in both directions. Remote focusing for perfect projections at any distance. Linear mechanical dimmer: 0-100%. Variable speed strobe/blackcut (0,5-10 flash/second). Macro dimmer/shutter for combinations and preprogrammed variable/random strobe and dimmer effects. Black-out while Head moving or gobo/colour/prism changing. Pan movement range 530°, tilt movement range 280° with automatic pan and tilt repositioning.

- \$5900
- Universal Lighting and Audio +61 7 5510 1333

**Sagitter Wash 250**

High efficiency parabolic reflector optical system deliver a very powerful and consistent output through a 150 mm Fresnel lens. Manual zoom system for adjustable angle between 7° and 22°. Frost-filter for softer beam. Beam-shaper (banana-effect): wide and flat beam can be rotated to the desired positioning. Infinite colour generation system through CYM colour mixing and additional colour wheel complete with 6 discrete dichroic filters plus open. Colours: red, green, blue, 3200 K and 5600 K correction-filters, Black-light (UV).

Colour wheel continuous rotation (rainbow-effect) in both directions. Linear mechanical dimmer: 0-100%. Variable speed strobe/blackout (0,5-10 flash/second). Macro-function for combinations between

CYM-colour mixing and colour-wheel. Macro dimmer/shutter for combinations and preprogrammed variable/random strobe and dimmer effects. Black-out while Head moving or CYM/colour/beam-shaping changing. Pan movement range 530°. Tilt movement range 280°. Automatic Pan/Tilt Repositioning.

- \$5700
- Universal Lighting and Audio +61 7 5510 1333

**SGM Giotto Spot 250**

Fantastic new product which is already being widely acclaimed for its performance and feature set. The Giotto 250 offers an extremely powerful (6,000 lumens) output from MSD 250/2 discharge lamp, silent operation due to highly efficient fanless convection cooling system. Features include remote lamp On/Off and reset via DMX, 16-bit movement system ensuring remarkable smoothness and high speed: 540° Pan (2.8 sec.) and 270° Tilt (1.7 sec.). Automatic repositioning (bump protection) with or without blackout. 9 dichroic colors + white + filter - a total of 30 colors. Shutter / Strobe: 12 flashes per second with music sync. Impressive Linear zoom (9° - 24°) - the only 250 watt fixture on the market with this feature as well as electronic and automatic focus. Fast smooth iris, 8 indexable rotating gobos + 2 fixed gobos + 2 glass gobos (texture) and Gobo shake. Colourchanger and gobochanger with music sync. 2-tone beam, analog colour selection and 15-speed rainbow effect. Two rotating prisms (4-faceted prism and 9-facet come). The frost filter is incredibly smooth, and variable from soft-edge to full-wash. Also wood filter, full CTO filter, half CTO filter and linear dimmer (0-100%). Display "flip" function. Electronic ballast 90-245 V. DMX 512. Built in Power Factor Correction. Safety cooling fans only operate in the event of overheating. Ideal for stage and studio applications alike.

- \$10800
- Universal Lighting and Audio +61 7 5510 1333

**SGM Giotto Wash 250**

Features, electronic zoom 9°-24° from Ø130 mm. motorised fresnel lens, extremely powerful output from precision optics and custom dichroic reflector which also gives excellent uniformity of the light beam. Full



Sagitter Spot 250 and Wash 250

Martin MiniMac Profile and Wash



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## Small Moving Lights



TAS ProSpot

CMY + CTO color generation system, linear 100% dimmer, strobe, built-in beam shaper with 2 simultaneously adjustable blades 20-100% aperture with  $\pm 90^\circ$  rotation, electronic ballast, silent operation due to highly efficient fanless convection cooling system (safety cooling fans operate in the event of overheating).

- \$10300
- Universal Lighting and Audio +61 7 5510 1333

### TAS ProSpot **HOT SELLER**

Lightweight moving yoke profile with 250w discharge lamp. 11 colours+white, six rotating/indexable gobos, remote focus, fan speed and rotating prism. In-built macros for gobo/prism combinations. 16 bit Pan/Tilt with speed control. Full LED menu and stand alone mode.

Uses HSD250w lamp with full condensor optic system for crisp bright images and excellent focus across the entire beam. Optional wide or narrow objective lenses available. Incredibly fast pan and tilt movement. Supplied with 6 spare metal/glass gobos. Ideal nightclub unit.

The TAS brand name elevates this unit above similar priced copies from other manufacturer. The TAS quality and reliability make them popular with hire companies, nightclubs and long term hire customers. The very fast pan and tilt movement make them an ideal replacement for moving mirror scanners. Lamp: MSD/HSD 250

- \$4,472
- Coemar De Sisti Australia +61 3 9467 8666

### TAS ProWash

Lightweight moving yoke wash light with 250w discharge lamp. Full CMY colour mix system + 6 way colour wheel. CTO + CTB correction. Manual fresnel lens for beam sizing. Remote beam shaping and frost provide additional beam size control. 16 bit Pan/Tilt with speed control. Full LED menu and stand alone mode.

Ideal partner for the ProSpot profile yoke. The ability to manually adjust the beam angle by sliding the fresnel lens gives the user more flexibility in beam control. Incredibly fast Pan/Tilt movement, plus motor control channel allows operation in Vector or Tracking modes. Ideal nightclub unit. Lamp: MSD/HSD 250

- \$4,470
- Coemar De Sisti Australia +61 3 9467 8666

## Moving Mirror

### Abstract VR8

Now legendary as a standard for nightclubs across Australia, the Abstract VR8 includes HQI150 6000hour lamp, 12 dichroic colours and 12 gobos. DMX control-

lable or master/slave sound-to-light operation.

- \$2252
- Universal Lighting and Audio +61 7 5510 1333

### Abstract VR8R

Still with the fantastic aesthetics of the VR8, this rotating gobo version includes 150 HQI lamp, 12 dichroic colours and 8 rotating replaceable gobos. In addition to DMX and sound-to-light modes, there is a 8 scene "run" or stand-alone mode programmable on board via the digital display.

- \$2926
- Universal Lighting and Audio +61 7 5510 1333

### American DJ - DJ Scan

Featuring 7 colours + white, 10 gobos + spot, DMX-512 protocol, X/Y mirror movement, stepper motors, 4 DMX channels, linkable via Master/Slave, a separate colour and gobo wheel, full focus lens, sound activation and can be used with a DJ Scan/C Mini controller. This great professional light can achieve almost any desired effect and make any room come to life. Lamp: 15V 150W EFR, 500 hour lamp life

- \$599
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### American DJ - DJ Roller

A professional quality fan cooled intelligent fixture, American DJ's DJ Roller features 7 colours + white, 10 gobos + spot, has high quality stepper motors, a barrel mirror allowing for a full 90 degree tilt and full 90 degree pan. Designed to be used in conjunction with American DJ's DJ Scan, the DJ roller is sound activated and has a separate gobo and colour wheel.

Its stand alone mode means no external controller is needed and the Master/Slave mode can be used with up to 16 units running through several internal programs. Lamp: EFR, 15V 150W, 500 hour lamp life halogen bulb.

- \$649
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### American DJ - DJ Scan/RG

Another quality light from American DJ, the DJ Scan/RG has numerous features. These include DMX-512 protocol, stepper motors, X/Y mirror movements, 7 colours + white, 8 gobos (4 fixed & 4 rotating), is linkable via Master/Slave, 4 DMX channels, a separate colour and gobo wheel, full focus lens and even includes a specially designed bracket for difficult mounting angles. Lamp: 15V 150W EFR 500 hour

- \$749
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

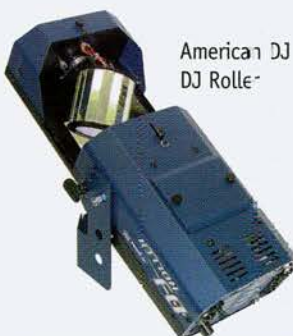
### American DJ - Pocket Scan



Abstract VR8



American DJ  
DJ Scan



American DJ  
DJ Roller



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The Pocket Scan is American DJ's most compact, full featured scanner ever and is a scanner and laser in one. The smallest scanner of this power on the market, it is great for clubs and bars. Its outstanding features include 15 colours + white (including split colours), 14 gobos, stand alone, sound active, 170 degree pan, 110 degree tilt, X/Y mirror movement, simultaneous

laser and halogen operation, DMX-512 protocol, digital DMX LED display to set DMX setting and full focusing lens. Lamp: EFP 12V 100W, 1000 hour lamp

- \$869
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### Clay Paky Mini Scan HPE **HOT SELLER**

Compact, powerful projector with excellent luminous - provides almost double the luminous efficiency of standard units, a result which is unique among moving mirror spotlights of this size. Even at maximum aperture settings, the beam from the Mini Scan HPE appears sharp and uniform over entire illuminated surface. Has 36 different colour combinations and six rotating gobos.

- \$4999
- Show Technology Pty Ltd +61 2 9898 1111

### FAL - FAL2000

The FAL2000 has a proven reliability track record and is the most recommended medium sized scanner for long term punishment environments where optical brightness, efficient use of available power,

price/performance and quality ratios are essential. Filters: 2 colour correction filters & 1 frost filter. Colours: 9 dichroic filters (with high chromatic yield) and white. Variable speed continuous colour wheel rotation to produce rainbow effect. Gobos: 4 rotating and 3 fixed plus clear. Prism: 1 rotating 3 facet prism. Strobe-Shutter: Fast action shutter for beam blackout and strobe speed, fully adjustable from 1-7 flashes. Motors: 5 stepper motors & 2 DC motors. Control: Digital DMX 512. Lamp: HSD 200 or HSD 250W discharge lamp, 2000 hour

- \$4199
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### FAL - FAL1000

Just as excellent in quality and appearance as the FAL2000, the FAL1000 is excellent price and offers just a few less features. Similar to the FAL2000, the FAL1000 only differs in that it does not have rotating gobos, prisms or the colour correction filter. The most unique features of this intelligent light are its two automatic operating sequences and Master/Slave operation with or without sound activation. Lamp: HSD 200 or HSD 250W discharge lamp, 2000 hour

- \$2849
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### Futurelight SC-250

Compact moving mirror unit with 150w discharge lamp. 15 dichroic colours+white (including UV & 3 bi-colours), 9 rotatable/replaceable gobos, separate strobe shutter, LED menu system, 19 degree beam angle, 6000hr lamp life. Only 11kg weight.

Ideal for driveway hire and nightclubs, due to the compact size and lightweight. Very long lamp life for low operating costs. Uses only 6 channels of DMX control via professional XLR connectors. Also available in lower cost version without gobo rotation. Lamp: HIT-150

- \$1,602
- Coemar De Sisti Australia +61 3 9467 8666

### Futurelight SC-375


Compact moving mirror unit with MSD/HSD 250w discharge lamp. 15 dichroic colours+white (including UV & 3 bi-colours), 13 gobos+open, strobe/blackout effect and wide angle Pan/Tilt. LED menu system, 19 degree beam angle, 2000hr lamp life. Only 10kg weight.

This unit is designed for high output, due to the 250w lamp, from a very small and light fixture. It uses only 4 DMX channels, yet provides plenty of features for the money. Also available in a lower cost unit using the ELC 24v,250w lamp.

- \$1,744
- Coemar De Sisti Australia +61 3 9467 8666

### Futurelight SC-580

Fully featured compact moving mirror scanner using 250w discharge lamp. 16 bit Pan/Tilt, 11+white dichroic colours, 2 gobo wheels (1st wheel contains 9 static gobos, 2nd wheel contains 6 rotatable/indexable gobos), prism, CTO, CTB, frost and mechanical dimmer. Variable speed strobe, full LED menu system. 15 degree beam angle and manual gear drive focus.




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## Small Moving Lights



Geni Shiva Scan



Geni Mojo Scan



Martin Acrobat

Martin MX-1



The SC-580 was custom designed for the Australian market and is not sold anywhere else in the world. The unit provides the most comprehensive range of features available with a 250w lamp in this price range. 110 of these units are installed in the Sydney Convention Centre ballroom where they have been reliably working for over 2 years. Lamp: MSD/HSD 250

- \$3,592
- Coemar De Sisti Australia +61 3 9467 8666

### Futurelight SC-780 **HOT SELLER**

High power compact moving mirror scanner using HMI575w lamp. 16 bit Pan/Tilt, remote focus and separate strobe shutter. 11 dichroic colours, linear Iris, 2 gobo wheels (1st wheel contains 11 static gobos, 2nd wheel contains 6 rotatable/indexable gobos). Rotating prism, frost, CTO, CTB and UV effects. Only 67cm in height. Full LED menu system, 15 degree beam angle and only 28kg.

This 575w scanner provides exceptional features and high light output in a very small package. Very popular for nightclub and trade show work. The gobos are all user replaceable and the unit is supplied with additional gobos. Standard gobos include multicolour glass dichroic items. Over 90 colour combinations via colour wheel and effects/gobo wheels. Uses 16 channels of DMX.

The light output of this unit is comparable with many 1200w scanners commonly owned in Australia, yet the unit is half the size. Remote focus allows the unit to be used in corporate applications. Flat base allows the unit to be sat upright on the floor, no need for a floor stand. Overall an excellent mix of features, price and high intensity light output. Lamp: HMI-575

- \$4,999
- Coemar De Sisti Australia +61 3 9467 8666

### Geni Shiva Scan Series **HOT SELLER**

The Shiva series of scanners has excellent optics provide high lumen output. Precision engineering and quality components make for smooth movement and exact X/Y placement. Shiva is value-engineered to beat all competition. And with every model, Geni's user-oriented design lets you work at your convenience. User aids, such as focus assistance, direction reversal and automatic patterns, enhance programming convenience and pleasure.

- From \$1399
- Show Technology Pty Ltd +61 2 9898 1111

### Geni Mojo Scan Series

Three easy-to-use, economy scans. Mojo Scan I great basic scan functions: sixteen coloured images and precision stepper motor mirror projection. It also includes instant set-up audio and DMX control options. Mojo Scan II ups the ante: sixteen images and sixteen colors on separate wheels, plus precision stepper motor mirror projection. Mojo Scan III has what no other small scanner has: rotating gobos! Features include nine rotating gobos, sixteen colors, precision stepper motor mirror projections, and built-in audio and DMX control.

- From \$799
- Show Technology Pty Ltd +61 2 9898 1111

### Infinity Super Leo

With 17 combined colour/gobos, and popular 24V 250 lamp, this mini scanner is feature packed. Includes built in pre-programmes for sound-to-light operation, DMX512 and smooth micro stepping.

- \$817
- Universal Lighting and Audio +61 7 5510 1333

### Infinity Super Leo ARC

All the features of the Super Leo are here in the ARC (or PLUS) version of this popular scanner. Includes 150W HQI 6000 hour lamp. Sound-to-light is master slaveable to create coordinated light shows when not using a controller. DMX512 on board.

- \$1091
- Universal Lighting and Audio +61 7 5510 1333

### LightEmotion KF10

The LightEmotion KF10 is a competitively priced intelligent scanner. It is made of high intensity, high temperature specially engineered endurance plastics and selected components. The unit features automatic protection from overheating. The streamline design, different colours available and compact case makes the KF10 look quite spectacular. With its unique high efficiency illumination system consisting of quality dichroic filters and anti-reflection lenses, it produces bright and vivid colours. Using high precision stepping motors, the KF10 is very smooth and quiet.

The LightEmotion KF10 is available in 5 colours which can be architecturally chosen to fit in with any decor and has an output that is extremely bright for its small size. Controls: 4 Channels, DMX-512, Colours: 7 + white, Gobos: 5. Lamp: EHJ/EVC

- \$869
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### LightEmotion KF20

The KF20 is a discharge version of the KF10. Lamp: MSD200

- \$1199
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### LightEmotion KF5

An exceptionally small light, the LightEmotion KF5 has a modern plastic moulded finish, is blue in colour and has separate gobo and colour wheels.

The KF5 can be used stand alone or via DMX512 controller of master/slave - using sophisticated built in programs. 4 DMX channels, 8 Colours, 8 Gobos (+ shut off and clear), 175 degrees Pan, 80 degrees Tilt, Strobes at 1-7 per second. Lamp: ELC 24V 250W

- \$699
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### LightEmotion KF2.5

A light weight, futuristic designed light great for mobile DJs or small clubs, LightEmotions KF2.5 has 8 gobos, 7 colours, DMX512 control or automatic sound activation, lamp on and off via DMX and optional simple controller. With a modern plastic moulded finish, stand alone operation and master slave, this fantastic little light will take the market by storm. Lamp: EHJ 24V, 250W

- \$499
- LSW (Lightsounds Wholesale) + 61 2 9568 2100

### Martin Acrobat **HOT SELLER**

A combination colour/gobo wheel, together with a mirrored rotating disc reflector, create an agile beam effect, each beam chasing the other while continuously changing colour and gobo pattern. With 18 gobos + open and 11 full dichroic colours + 3 dichroic split colors + 5 white, the Acrobat boasts more features than any other comparable act.

- \$1199
- Show Technology Pty Ltd +61 2 9898 1111

### Martin MX-1

A revolutionary lightweight scanner with an ultra-modern design that has taken the club and disco scene by

storm. Featuring a combined colour/gobo wheel for easy operation and quick programming. Features a bright 250 watt halogen lamp and combined colour/gobo wheel (18 gobos, 10 colors/3 split colors + 5 white).

- \$1499
- Show Technology Pty Ltd +61 2 9898 1111

**Martin MX-4**

Big brother to the MX-1. A bright and powerful scanner with a 150W discharge 6000-hour lamp. Uses an ultra-fast strobe effect and individual colour and gobo wheels. Ideal for use in larger disco and club environments.

- \$1999
- Show Technology Pty Ltd +61 2 9898 1111

**SGM VictoryII 250**

This great small moving light, in the style of the Technobeam is supplied complete with M33 24V 250W lamp giving an impressive 5000 lux of output at 5metres. 16 colours, 7 gobos 4 of which are rotating. Also includes frost, dimmer, strobe functions

- \$4000
- Universal Lighting and Audio +61 7 5510 1333

**SGM VictoryII 150**

With the same features of the VictoryII 250, except with 150 HQI discharge lamp. Both the colour and gobo wheels can be set to "music sync" via DMX, and remote fixture reset is also available via DMX too.

- \$4275
- Universal Lighting and Audio +61 7 5510 1333

**TAS CompactScan HOT SELLER**

Compact moving mirror scanner using 250w discharge lamp. 16 bit Pan/Tilt (220x110degrees), mechanical dimmer, strobe, 9 replaceable gobos, 11+white colours, CTO, CTB, frost and variable speed rotating prism. Manual gear driven focus. 36 possible colours, rainbow effect, condensor optics. 19 degree beam angle.

Full condensor optics ensure a flat light output across the entire beam. Gobos are all quick and easy to replace due to clip in system. Rotating prism provides larger beam coverage in small rooms. LED menu provides ease of setup and fixture diagnostics. A professional compact scanner for the discerning user.

TAS is a wholly owned brand name of Coemar, aimed at the nightclub market, where Coemar product may be too expensive or simply over-featured. The Compact Scan is a mid range scanner with an extended range of features for this market segment, making it very popular with hire companies and nightclubs.

- \$2,706
- Coemar De Sisti Australia +61 3 9467 8666

**TAS DigiScan**

High power compact moving mirror scanner using HMI575w lamp. 16 bit Pan/Tilt, remote focus and separate strobe shutter. 11 dichroic colours, linear Iris, 2 gobo wheels (1st wheel contains 11 static gobos, 2nd wheel contains 6 rotatable/indexable gobos). Rotating prism, frost, CTO, CTB and UV effects. 67cm in height. Full LED menu system, 15 degree beam angle and only 28kg.

This 575w scanner provides exceptional features and high light output in a very small package. Very popular for nightclub and trade show work. The gobos are all user replaceable and the unit is supplied with additional gobos. Standard gobos include multicolour glass dichroic items. Over 90 colour combinations via colour wheel and effects/gobo wheels. Uses 16 channels of DMX.

- \$4,999 • Coemar De Sisti Australia +61 3 9467 8666



TAS DigiScan



LightEmotion KF10

(This Market Report continues on pg64)

# Lots of Stuff

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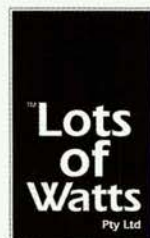
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# Effects, Reverbs and EFFECTORS

This month we list what's current and desirable in the effects market including reverbs, delays, modulation and filtering devices. Not included here: dynamics processing such as equalisers, limiters, feedback eliminators which will be featured in September. **Compiled by Daniel Cole.**

## SONY DRE-S777

The DRE-S777 Sampling Digital Reverb (*left*) is a unique reverb processor, which derives it's



sound not from artificially generated algorithms, but from actual impulse response samples of real acoustic spaces. The DRE-S777 offers both AES/EBU digital or analog I/O, and can be outfitted to operate in four-channel surround mode. Reverb programs are provided on CD-ROM and Sony's memory stick is used to store user set up data.

- \$9,900. Sample Software CDs from \$990.
- Sony Australia +61 2 9887 6666

## DPSV77

The DPSV77 is a 1U rack mount with 48kHz sampling (24 bit ADC & 20 bit DAC). It operates with 52 bit internal processing and has 64 effect algorithms, 198 presets plus a 198 user memory location capacity. Effects include Delay, Reverberation, Modulation and Filtering. A morphing function is provided for simple transitions between effects and the DPSV77 has both analog and digital I/O (AES/EBU & SP DIF with optional connecting cable).

- \$3,200. • Sony Australia +61 2 9887 6666

## DPSV55M

4-Channel Multi Effects Processor (*left*). 4-channel construction offering the flexibility to route the input signals in a variety of configurations. Easy dial up



access to 45 different effects algorithms, 200 factory presets and 200 storable preset slots to store customised creations. Included onboard are presets developed by known recording engineers from around the world. A neat search function locates presets by effect type, tap function and preset storage and editing librarian - very useful.

- \$1,041.
- Sony Australia +61 2 9887 6666

## DOD SR-D3



A digital/stereo multi effects processor for studio or live applications (*left*). Effects include: multiple reverbs and

delays (in series or parallel), various choruses, rotary speaker emulator (for that Hammond extravaganza), flanges, pitch shift, phasers, tremolo, panning, noise reduction with adjustable threshold control.

The unit produces true stereo effects or 2 effects can be processed independently (dual mono) with an ease-of-use interface - just plug and play. The SR-D332 allows 32 effects combinations with 15 presets each and a total of 480 presets, all foot-switchable.

- \$419. • CMI +61 3 9315 2244.

## DOD SR-D12

A 1U high digital delay/sampler (*above*) with a capacity for four banks of 6 seconds or two banks of 12 seconds of sample memory for up to 24 seconds of delay. Replay features include reverse play, edit friendly start and stop sampling times for loop and stutter options.

- \$799. • CMI +61 3 9315 2244

## Digitech Studio-100

Part of Digitech's Studio Series the Studio-100 is a true stereo effects processor. The unit features a dual engine processor with 20 bit A/D and D/A conversion. Key selling points: Signal-to-noise ratio > 96 dB, THD less than .008% (1 kHz), 100 user / 100 factory presets. Stereo inputs and outputs (T.R.S.), 7 effect routing configurations, MIDI controllable, footswitch compatible, easy to use and clearly laid out interface.

- \$549. • CMI +61 3 9315 2244

## Digitech STUDIO-200

As with the Studio-100, the Studio-200 is a dual engine multi effects processor but with a more sophisticated graphic display which provides immediate feedback of programs during performance & editing. Clearly rendered icons navigate the user through effects and sign pathways for customised program creation. Stereo inputs and outputs (T.R.S) and MIDI controllable.

- \$779. • CMI +61 3 9315 2244

## Digitech QUAD-4

For serious processing the Studio Quad-4 (*below*) is a 4 in 4 out multi-effects processor - that's 4 independent inputs and outputs. Key features: large custom display, multiple input/output signal path routing, dynamic parameter modifiers, full MIDI implementation, full bandwidth effects and automatic input levelling. Version 2 includes 80 new programs, a 10 new effects module and additional I/O routing. The unit is equivalent to having 4 signal processors in 1.

- \$1,149. • CMI +61 3 9315 2244





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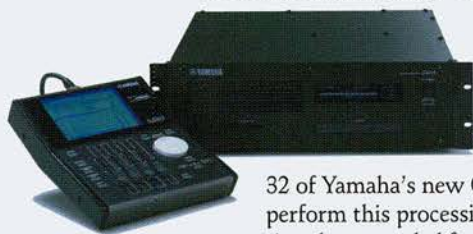
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*Effectors*

**YAMAHA SREV1**

The new Yamaha SREV1 uses convolution based processing at over 1 million calculations per second to provide sample based reverberation almost indistinguishable from the original space. More than



32 of Yamaha's new CNV3 DSP chips are used to perform this processing feat based on reverberation data sampled from some of the world's premier sound spaces. A remote controller offers motorised faders and a large LCD screen for system control. The unit comes bundled with software to enable the user to 'sample' any space for use later as a reverb setting. A demonstration audio CD available by contacting Yamaha Music Australia.

- Anticipated price for complete package including the SREV1 sampling reverb, RC-SREV1 remote controller and DB-SREV1 expansion DSP board likely to be around the \$20,000 mark. Exact pricing available 1 July.
- Yamaha Music Australia +61 3 9693 5111

**SPX990**

Used on just about every international tour in the past 5 years this multi-effects processor has a 3-stage effect configuration: pre-effects - EQ, compressor, harmonic driver, main effects - reverb, modulation, pitch change etc), and post effects (EQ, compressor, harmonic driver). In addition the SPX990 includes 80 internal presets and 100 user libraries.

- \$1995. • Yamaha Aust. +61 3 9693 5111

**REV500**

A true stereo reverb the REV500 uses 32 bit processing featuring 100 presets and 100 user libraries. The unit also includes built-in drum samples that can be triggered from the front panel that make set-up and testing easy. Front panel controls and large LCD display are user friendly which makes the REV500 simple to operate, even when accessing extended effect parameters.

- \$895. • Yamaha +61 3 9693 5111

**PROR3**

A 32 bit processing reverberator with pre-eq, gate, compression, dynamic filter and post-eq facilities, the PROR3 is ideally suited to advanced home studios & professional recording facilities. Control facilities offer maximum control over all system facilities for hi-fidelity environments whilst remaining easy to use in live mixing situations.

- \$2795. • Yamaha +61 3 9693 5111

**TC ELECTRONICS**

**M3000 Studio Reverb**

The M3000 is a stereo reverb & multi-effects system featuring TCs revolutionary VSS (Virtual Space Simulation) reverb algorithms. The pure audio performance of the M3000 has made it a sales winner and brought critical acclaim worldwide (including a TEC Award). TC have recently expanded the M3000s presets to 600 (!) with a new range of presets tailored for the

film/video post markets.

- \$5,195.
- Amber Technology +61 2 9452 8600

**TC System 6000 Multi-Channel Processing Platform**

The System 6000 is the ultimate of TCs "Ultimate Sound Machines" and has already become the processor-of-choice for many of the world's leading audio engineers. The 6000 was designed to provide a complete effects & reverb solution for the burgeoning surround sound audio market. Offering multi-channel digital effects, dynamics, pitch change and noise reduction, the System 6000 can handle ANY surround format (including 4-channel encode/decode) whilst the ICON Remote features full-colour, touch-screen control and motorised faders.

- (from) \$20,195.
- Amber Technology +61 2 9452 8600



**TC M-One Digital Effects Unit**

The M-ONE has met with huge sales success since its release in Australia last year. It quickly earned a reputation for delivering classic, pristine TC effects algorithms at a price normally only found with "other" effects units. TC have combined their vast expertise in top-end effects algorithms with the latest manufacturing techniques to deliver a system with outstanding audio performance, an "instant control" user interface plus an affordable price tag.

- \$1,375.
- Amber Technology +61 2 9452 8600

**TC D-Two Digital Delay**

A high-performance, low-cost stereo digital delay, the D-Two reflects TC's 20 years' experience in the design of cutting-edge signal processors (including their classic 2290 delay). It is also a truly "musical" delay which allows for rhythm patterns to be tapped in directly with up to 10 seconds of delay and precise repeat control. Other features include six dedicated add-on effects such as chorus & spatial effects plus true 24-bit resolution A/D/A conversion.

- \$1,375.
- Amber Technology +61 2 9452-8600

**Not here!**

**Lexicon, and Roland. We called them, but no info, sorry!**

**Upcoming Market Reports:**

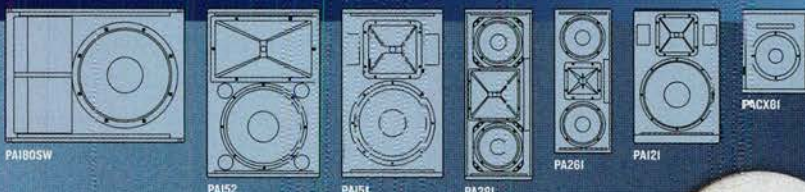
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# infoComm

# 2001

by John Grimshaw



The AV industry's biggest show was held last month in Las Vegas. With every major manufacturer showing what they have and what is coming, ICIA's Infocomm has long been a show where you can get a glimpse at what is 'over the horizon'. So, what did the show have to offer?

Like last year's convention, the 2001 Infocomm displayed only incremental increases in AV technology. The floor space of the show was increased over the 2000 show at Anaheim, and all in all it was pretty worthwhile. Here is a quick run-down of the more interesting products we found at the show...

### Stewart Filmscreens

Stewart has been a well respected manufacturer of film screens in the US for many years. One of their most recent products, the Greyhawk was very impressive.

Greyhawk describes the surface coating applied to a standard vinyl screen. As the name suggests, it is a grey colour finish. Devotees of the medium would know that silver screens have been around for a long time. However, they were never widely adopted in recent times because the silver surface would often cause hot-spots, as well as subtly shifting the colour temperature of the image.

The Greyhawk finish suffers from no discernable hot-spotting that this writer could see, and the people at Stewart were quick to provide test data showing that the colour balance follows exactly the plot that would be made by a more conventional screen (see diagram).

The image that the screen produced had a significant improvement in darkening the blacks, while the whites remained good – though they were also very slightly reduced. This surface would be ideal improvement for any projector that was not the best at keeping the blacks down, and also has the added bonus of coping with ambient light better than a white surface.

Another item they had on display was the Blackhawk. It is a rear projection screen that incorporates a fresnel screen behind the surface. There was absolutely no glare reflections from this surface – even direct light from the front did not impede the image. While they did not want to go too much into detail, the combination of the Fresnel and the screen itself only allows light travelling the right direction to pass through the surface properly. It was described as 'fibre-optic' like in its ability to channel light from the projector to the surface. The resulting image was stunning.

Stewart Filmscreens are distributed in Australia/NZ by Visual Fidelity Pty Ltd +61 3 9553 7272. These screens are not cheap, but the result is well worth it.

### Hitachi to produce LCOS Projectors

Hitachi have decided to bring out a range of LCOS LCD projectors. LCOS stands for Liquid Crystal On Silicon (see 'Display Formats' on page 22 for a description of LCOS). The CP-SX5500W is promised to be a 1500 ANSI lumen, SXGA+ projector. The SXGA+ refers to a pixel resolution of 1365x1024 – very close to the native resolution of the highest quality HDTV. They hope to ship the device in the third quarter (Hitachi have been a bit better at keeping this kind of promise compared to other companies).

### NEC - More High End Projectors

NEC have taken the recent release of the SX6000 (reviewed last month) to the next step, by adding models below and above. To be known as the 'Nighthawk' series, the existing SX6000 and XT5000 are to be joined by the SX4000, SX10000, XT4100 and XT9000. This will give the SX and XT series' 3,500, 5,000 and 8,000 ANSI Lumen options in both SXGA and XGA resolutions respectively.

All projectors in the range will be able to use the same series of lenses currently available. The various models will progressively be introduced through the rest of the year.

### Extron - Anything In, Anything Out



Extron have released the USP 405, a universal video processor that up/down scales almost any kind of video input to numerous video output types simultaneously. The unit comes with 4 discrete video inputs, including 5x BNC for RGBHV or Component, S-Video, Composite and a 15pin HDD (with buffered local output). With the appropriate input selected at the front, the input

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**DrG on JVC**

Inside the JVC pavilion, the high end of the D-ILA options were all on display. It is my opinion that the images shown there were some of the best quality images to be seen at the show. Of course, that had a lot to do with the fact the source material was very carefully crafted.

In any case, while waiting to leave Las Vegas, I decided to go to a conventional movie - where I was reminded at how poor the comparison is between film and the current range of precision video projection.

Film has already been far surpassed by the best that modern projection can offer, and the only thing that will maintain its survival for now is the fact that it is cheaper to support the existing infrastructure. Exactly how long this situation will last is anyone's guess, but it won't be long.

**Samsung Step Into Displays**

Samsung have taken a bold step into the display market by announcing a complete range of plasma and LCD 16:9 display options. One of the most significant of these will be the 63" plasma. The full range of 16:9 displays are to include 42", 50" and 63" plasmas, 43" and 50" (F)LCD, and a 26" LCD. Release dates are likely to be scattered throughout the rest of the year.

The picture below is of the Samsung stand - a gammut of 50" plasmas surrounding the new 63" one.



signal is then transformed and sent to all of the 5 outputs - 5x BNC for RGBHV, 3x BNC for Component, S-Video, Composite & a 15pin HDD.

The unit can also come with an optional SDI (Serial Digital Interface) input and/or output, delivered using a BNC for input and a BNC for output. All high-res outputs are scaled to one of 35 preset scaling options. The unit uses the Extron scaling technology, 'Dynamic Motion Interpolation' to avoid motion distortion often seen on scalers.

Extron is distributed in Australia by RGB Integration Pty Ltd +61 8 8299 0799

**3M Wall Display**

3M have put a new spin on the concept of whiteboards and projectors. Their integrated unit is designed to be hung on the wall, and then only require power an vision to operate. Pushing the 'On' button causes a recessed arm to swing out, on which is a projector head that fills the screen surface with the image.



This nifty little concept allows the installation of a large(ish) screen in an environment where preventing the theft of the projector, simplifying the operation and limited space is a concern.

The image does use quite a bit of digital key-stone correction to create the square image. This results in computer graphic displays being slightly compromised, but normal video looks fine. The unit has a few optional extras, including a projection surface that can cope with white board ink, and virtual white board attachments that allow the connected computer to collect your writing on the white board as graphic images, displaying

them in real time back to the screen that you are 'writing' on.

The unit would easily find a home in any classroom and numerous meeting rooms. Whether the product was going to be released to the Aussie market could not be answered at the show.

**JVC Is Now Shipping the DLA-DS1 in US**

One of the interesting things that came out of the previous year's Infocomm was the introduction of JVC's first entry level D-ILA projector. Now a classic example of 'vapourware' the DLA-G3010 never went into production, but apparently its replacement now has. We at Connections are well aware that many of our readers have been waiting, somewhat impatiently for entry level D-ILA, hopefully the DLA-DS1 will be it.

The display of the projector was not particularly inspired. It was showing on the outside of the main JVC tent, and would be easy to miss if you did not know what to look for. While there was not much hope in looking too carefully at the picture quality during the show, it was apparent that this projector will be one to watch for when it is released locally. Its specs say it is a

1365x1024 with 1300 ANSI Lumens. For a description of D-ILA, you should read our Display Feature (pg 22).

**Videonics FireStore - Hard Disc Video**

This little device was memorable because is



joined two previously disparate steps for non-linear video editing using DV. This is a hard disc video recorder that works in the same way as a standard tape-based VCR, with the added bonus of a direct firewire input. This allows the user to plug the output of a camera directly to the drive, where the full DV video, 2ch of 16bit 48kHz audio and 4ch of 12bit 32kHz audio can be recorded. It also allows the user to run a tape in the camera simultaneously as a backup.

The interesting part for this device is when you plug it into the computer to edit the video. Instead of having to dump the video down, the computer recognises the hard disc when it is plugged in, and mounts it in the system with the videos files already formatted ready for editing.

The unit also makes for an ideal way to transport and playback large video files. Videonics is distributed in Australia by C. R. Kennedy & Co +61 3 9823 1555



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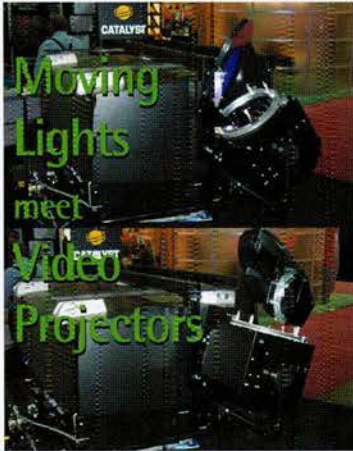
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# 1201



High End Systems officially debuted the Catalyst - an adc on head that is designed to be used on any +3000 ANSI lumen projector.

Pictured here on the Barco ELM, the Catalyst car cover 360° on one axis and 183° on the other. The system not only controls the movement of the head, but also the content that's projected. Moving and still images are recalled by the Mac G4 that drives the system. These images are rotated depending on where the head is pointing so that the image always remains upright. The result is a circular spot of light, into which you can put any image, video, photo or other effect that you can think of.

At Infocomm, the system was being controlled by a Wohlenberg TI - the desk even controlled what video or image was being displayed. The production version of the Catalyst is expected to use at least 40 channels of DMX for complete control of the result. The unit is expected to retail for around US\$20,000.

The primary target market will be AV hire companies, the reason being that they can get added value from existing (and possibly outdated) projectors.

High End hope that the production version will be on display at Plasa2001 in London. More info at [www.wwg.co.uk](http://www.wwg.co.uk)

**Toshiba TDP-P4**



Launched at Infocomm, this projector puts out a very nice picture for its small size. Toshiba was one of the few companies to continue its support for Infocomm's shootout, and in the opinion of this writer, this projector certainly outclassed its opposition in the ultra-portable class.

It is a 1024x768 resolution projector that makes good use of its single chip DLP chip. The shootout showed the projector to have good blacks, even grey-scale display, and nicely saturated blacks. The tiny (3.1pound) device puts out a whopping 1100 ANSI Lumens. The usual assortment of inputs in complimented with a DVI input.

Toshiba projectors are distributed in Aust by Audio Visual Australia Pty Ltd +61 3 9720 9888

**Kayye Consulting Display Software**

Gary Kayye (one of the world's leading AV consultants) provide through his company numerous software options for displaying and testing displays. Infocomm saw the release of ProjectorShow 3.0 ES-Duo. This software is designed for retailers to show off any projector by automatically cycling high-res pictures from a computer.

Also recently released is the latest edition of the DisplayMate software. The new version of the software allows for the testing of any type of display (eg CRT, projectors, plasmas etc). The software can handle resolutions up to 4096x4096, any aspect ratio and colour bit depths up to 32bit. It also includes test patterns for HDTV.

Connections will be using this upgrade for future reviews. Kayye software can be purchased from the website [www.kayye.com](http://www.kayye.com). ProjectorShow 3.0 ES-Duo US\$59, DisplayMate US\$90.

ance of 3D - no glasses, quite clear image and definitely 3D.

The system works because the glass in front of the main screen allows each eye to see a different vertical row of pixels. This is a similar concept to a lenticular (you know, those tazo things in chip packets where the image moves as you move it), except a lenticular loses vertical resolution for each image, and this system does not.

The image driven into the screen takes advantage of the fact that each red green and blue plasma group making a pixel is arranged horizontally. The picture is sent so that a separate image is seen by each eye, thus allowing the 3D effect to be generated. However, you cannot watch 2D through this display.

While this display was very impressive, what was even more impressive was the company behind the encoding of the 3D information. The company is called DDD (they have their R&D arm based in Perth). This company has managed to achieve a number of things.

The first and most important of these is the ability to create 3D images from any 2D source. The simple explanation of how this is done is that each frame of video/film is scanned, and each object in a given scene is mapped and given a depth layer that best represents its depth position in the scene. That information is then encoded to a 3D data stream. The size of data stream is roughly 1/2 of the resolution of the main video signal, but extreme compression brings the data throughput down to about 1-2% of the original size. All of this requires some heavy duty computer crunching.

The data stream is then sent with the normal 2D signal so that if your display cannot display 3D, it ignores the signal to display the original image. If you display can use the 3D information, then it is decoded and used. The 3D data can be made compatible with almost any 3D system, including the above mentioned system, virtual reality glasses, 3D that requires glasses, etc. The intention is to maintain the backwards compatibility in the same way that the transition from B&W broadcast to colour was maintained.

According to Phil Harmon of DDD in Perth, the goal of the company is to become and on for video/film production in much the same way Dolby is for the audio world.

The 2D to 3D conversion was recently tested by Dreamworks. They provided shorts for two of their feature length animations - Shrek and Ants. The Ants short was processed using this pixel mapping system, and the Shrek short had the 3D info rendered directly from the animation program from which the movie was made.

As you would expect, the Shrek short was incredibly detailed in its 3D, but the Ants one was quite impressive considering its 2D source. Other 2D to 3D conversions on display at Incomm using the 4D screen were the U2 clip for 'Beautiful Day', and Madonna's 'Tell Me'.

The 3D info stream can also be recorded in real time when a scene is being shot. For more information, go to [www.ddd.com](http://www.ddd.com) or [www.4d-vision.de](http://www.4d-vision.de)

This gadget was my favourite of the show, and it is so simple. As the picture suggests, it's a 1 in 2 out VGA splitter. However, this 'cable' is actually an active splitter that draws power from the source computer to create a duplicate, isolated VGA source for use in a second display. A 'must have' for any AV Department. Altinex is distributed in Australia by Ax's Audio Visual +61 3 9761 2688

**Altinex Sidekicker**

**DDD - 3D Without Glasses**

On display in the Pioneer stand was a little corner kicked away, and devoted to a product that you are not likely to see commercially for a few years.

The actual display at the show was from a company called 4D from Germany. It was a 50" Pioneer plasma display with a special frame in front of the main glass. From three meters away, the image on the screen had the distinct appear-



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- Show Technology Pty Ltd +61 2 9898 1111

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Compact colour changer using MSD250w lamp. Manual zoom & focus control from 11-20 degrees. Two colour wheels. First wheel has 11 colours, 2nd wheel has CTO, CTB, Magenta, Cyan, Yellow, UV, two user replaceable gobos and 3 beam size apertures (psuedo iris). Mechanical dimmer and remote frost/hard edge beam control, plus varispeed strobe.

Ideal replacement for Par64 and scroller. Can be used as a profile and a washlight. Draws only 2A when running and includes an internal dimmer, (no dimmer racks required) Provides over 60 colours from the two wheels. Manual zoom and focus allows adjustment to suit the venue. The gobos allow company logos to be projected, a function not offered in similar units from other manufacturers.

Low cost and the careful selection of features have ensured this unit became a popular seller. It is used by rental companies, schools, amature theatres and DJ's. Low power consumption allows 4 units per 10A outlet. Internal dimmer reduces need for dimmer racks. Light output is almost as much as a 1000w Par 64, yet uses half the power. Lamp: MSD/HSD 250

- \$1,624
- Coemar De Sisti Australia +61 3 9467 8666

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**Martin CX-2 HOT SELLER**

Featuring an all new modern design, the CX-2 houses a colour wheel with 15 colours, 2 split colours plus open. Also has an effect wheel with 10 gobos, 5 iris gobos and frost, plus open and closed. An electronic dimmer and variable strobe are also included. The CX-2 is DMX controllable and contains a 250 watt halogen lamp.

- \$999
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Ideal replacement for Par64 and scroller. Draws only 2A when running and includes an internal dimmer, (no dimmer racks required) Provides over 60 colours from the two wheels. Manual zoom and focus allows adjustment to suit the venue. The gobos allow company logos to be projected, a function not offered in similar units from other manufacturers

- Lamp: MSD/HSD 250
- \$1,624
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Martin CX-2



Martin Robocolor Pro 400

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ARTIST	PRODUCER	ENGINEER	SESSION
<b>A#Sharp</b> Jeff Cripps +61 2 9153 9988	24 tack. Analogue/32 Track Digital		
Capoeira Brasil	Jeff Cripps	Jeff Cripps	CD
State Transit Authority	Jeff Cripps	Jeff Cripps	Voice-Overs
Swingsation	Jeff Cripps	Jeff Cripps	CD
Rivers & Roads	Jeff Cripps	Jeff Cripps	CD
Lamento Suite	Jeff Cripps	Jeff Cripps	CD
<b>Bush Traks</b> Pty Ltd Ruth Miller +61 2 6689 1290	Professional Digital Studio		
Mereki	Mereki	Dave Highet	Album
<b>Damien Gerard</b> Marshall Cullen 2" 24 Track and Pro Tools +61 2 9555 1710	2" 24 Tack & Pro Tools		
Fragile	Simon Holmes	Russell Pilling	Album
Vermiscious	Nick Dalton	Russell Pilling	EP
Teddy Sexuals	Marshall Cullen	Russell Pilling	Mini Album
Pretty Bionic	Sandy & Kelly	Kristian Hill	Album
Chris Turner	Pete Wells	Russell Pilling	Album
<b>Feral Studios</b> Jon Robertson +61 2 6299 3224	30 track Recording		
Juggernaut 101	Jon Robertson	Jon Robertson	Album
Space Is Dead	Jon Robertson	Jon Robertson	Demo
Di Flynn	Jon Robertson/Rod	Jon Robertson	Album
<b>Hullabaloo</b> Geoff McGarvey +61 2 9906 2933	Two x Pro Tools studios		
Money		Glenn Heaton	Audio Post for Series
ABC Audio		Dan Bowers	Spoken Word Books
Nescafe	Glenn Heaton	Cinema Dolby	Audio Mix/Music Score
Main Event Channel		Daniel Bowers	Promos-Audio Post
<b>Megaphon Sound Recording Studios</b> Shane Fahey +61 2 9550 6576			
Starless		Shane Fahey	Demos
IAndree Greenwell		Shane Fahey	Sydney Theatre Co. Prod.
Rumanastone	Tim Whitten	Tim Whitten	Album Overdubs
Tibor & Jackie Orszacky	Jackie O	Shane Fahey	Album Overdubs
<b>Nu-Town Studios</b> Greg Hopping +61 2 9516 3306	Recording, Programming, Production		
Kelly Star	Greg Hopping	Greg Hopping	Album
Candy	Sofie Loizou	Mark Worrall	Album Demos
Southern Outpost	Patrick & Sofie	Sofie Loizou	Single
Paul Goddard	Paul & Sofie	Sofie Loizou	Single
Come In Spinner	Greg Hopping	Mark Worrall	Album
<b>Q Recording</b> Michelle Barry/ Sandra Gatsby +61 2 9212 4851	SSL G+/24 Track		
An Empty Flight	Paul McKercher	Paul McKercher	Album Tracking
Chill	Mick Seage	Mick Seage	Album Tracking
<b>Rockinghorse</b> Anthony Lycenko +61 2 6688 4005	Neve V Series 48 Channel, Studer 24 track, Pro Tools Mix 24, 4 x 24 bit 888		
The Cruel Sea	Magoo	Magoo	Album mixing
Scott Tinkler	Scott Tinkler	Anthony Lycenko	Album tracking
Lancaster	Anthony Lycenko	A Lycenko/B Macarthy	EP Tracking
<b>Soundwarp</b> Meredith Brooks +61 2 9905 7144	Mastering		
Denero	Dave Stanley	Meredith Brooks	EP
Ironbark	Troy Matthews	Meredith Brooks	Album
Off The Cuff	Matthew Hickey	Meredith Brooks	Album
Thomas Li	Thomas Li	Meredith Brooks	Album
<b>Studios 301</b> Steve DeFina +61 2 9698 5888	Recording & mixing Studios suited to all genres of music including full scale orchestral film scores		
The Cruel sea	Magoo	Magoo	Mixing
Josh Abrahams	Brent Clark	Brent Clark	Recording
Ian Moss & Jimmy Barnes	Paul Najar	Mark Opitz	Mixing Live material
Grease - The Musical	Steve James	Steve James	Album

## C H A R T S



ARTIST: Fimes Three  
SINGLE: Girl Like Me  
PRODUCED: Tommy Farraguer & Nick Howard @ Tonic Productions  
ENGINEERING: Tommy Farragher, Nick Howard and David Hemming  
STUDIO: Tonic Studios & Tiger Recrding, Sydney  
MIXING: Tommy Farragher, Nick Howard and David Hemming @ Tiger Studios, Sydney  
MASTERED: Steve Smart @ Studios 301



ARTIST: Danielle Spencer  
SINGLE: Blast off  
PRODUCED: Vince Pizzinga @ Beamo Music, Sydney  
MIXING: Andy Bradfield  
STUDIO: Mangrove Recording Studios, Gosford  
MASTERED: Don Bartley @ Studios 301  
ADDITIONAL ENGINEERING: Mazen Murad

## Tracking Guide

## C H A R T S



ARTIST: Paulmac (feat Peta Morris)

SINGLE: Just the Thing

PRODUCED: Paulmac

ENGINEERED: Paulmac

STUDIO: Fibromajestic, Blue Mountains

MASTERED: Mazen Murad @ Studios 301



ARTIST: Michelle Bradford-Jones

SINGLE: Brave

PRODUCED: Nick Brophy

RECORDED: Nick Brophy

ASSISTED: Michelle Bradford-Jones

STUDIO: Laundry Room, Thousand Oaks, CA

MASTERED: Steve Hall at Future Disc



ARTIST: Palladium

SINGLE: Hoarsey

PRODUCED: John Cornfield

ENGINEERED: John Cornfield

ASSISTED: Mark Thomas

STUDIO: Sawmills Studio, Cornwall, UK

ARTIST	PRODUCER	ENGINEER	SESSION
<b>Trackdown Digital P/L</b> Mike Duffy +61 2 9550 6890 64 Track Digital – Music & Post			
Samoana	Juniper Films	Tim Ryan (E)	Documentary-Audio Post
Kylie	Steve Anderson	Torei Lista (E)	Music Editing – TV/DVD
Flipper & Lopaka	Yoram Gross–EMTV	Candusso/Ryan/Lista	TV-Post Audio
Tabaluga	Yoram Gross–EMTV	Candusso/Ryan/Lista	TV-Post Audio
Hearts in Atlantis	Castle Rock Films	S Leadley(E)	Film–Music-Editing
<b>Troy Horse</b> Mickey Levis +61 2 9319 1799 Recording Studio + Pro Tools Studio – Mastering			
Cathy Mac Band	Bertrand Lalianne	Danny GoLightly (E)	Album
Caviar	Worrall/Caviar	Mark Worrall (E)	EP
Julieann Spicer	Peter Kennard	M Worrall (E)/C Wright (E)	Album
Danny Gee-Spot	Danny GoLightly	D GoLightly	Instructional Tapes
<b>The Vault</b> James Cadsky +61 2 9555 8298 E/G series SSL Pro Tools 48 track Analogue			
Professor Groove	Professor Groove/James Cadsky	James Cadsky	Album
Elsewhere Fine	Elsewhere Fine/Dave Pascoe	Dave Pascoe	
Midnight Oil	Midnight Oil	James Cadsky	
Kieran O'Regan	Ghostwriters	James Cadsky	
<b>Velvet Sound Recording Studios</b> Dave McCunn +61 2 9267 291524 track 2" & 64 Track Pro Tools 5.1 Mix3			
Purplene	Steve Foster	Steve Foster	Album Mixing
Amiel	Josh Abrahams	Andy Baldwin	Album Tracking
Steve Aravena Band	Steve James	Tony Wall	EP Tracking
An Empty Flight	Paul Mc Kercher	Paul Mc Kercher	EP Tracking
Waldo Fabian	Frank Kerestedshjian	Frank Kerestedshjian	Album Mixing
<b>The Vintage Tube Music Studio</b> Phil Punch +61 2 9660 0385			
Slim Dusty	Rod Coe	Phil Punch	Album
Jackie Bristow	Mark Punch/Matt Fell	P Punch/M Punch/M Fell	Album
Don Walker	D Walker/P Punch	Phil Punch	Album
Billy Connolly	Phil Punch	Phil Punch	Album
Bobby McLeod	Col Watson	Phil Punch	Album

## Queensland

<b>Coral Sea Studios/Select Sound</b> Jan Sarchfield +61 7 4059 2888 Digital Recording Studio			
David Hudson	Nigel Pegrum	Nigel Pegrum (E)	Album
Shakimra	Nigel Pegrum	Nigel Pegrum (E)	Album
Bunna Laurie	Bunna Laurie	Josh Blair (E)	Album
Mills Sisters	Chris Lloyd/Brett Tyrell	Josh Blair (E)	Recording
Seaman Dan	Nigel Pegrum/Karl Neunenfeldt	Nigel Pegrum (E)	Album

<b>OPM Studios</b> Daniel Seymour +61 7 3374 0066 ADATS with logic audio			
Intercooler	Intercooler	Daniel Seymour	Demos
Check Point Charlie	Daniel Seymour	Daniel Seymour	Demos
Vista	Daniel Seymour	Daniel Seymour	Tracking
Alchemy	Craig Thompson	Daniel Seymour	Album
Lazyboy	Daniel Seymour	Daniel Seymour	EP

<b>Taramalin Sound</b> Allan Lahey +61 7 3208 9736 32 Track Digital/16 Track Analogue + Pro Tools			
Alyson Locke	Alyson Locke	Allan Lahey	Mastering Album
Ben Kerswell	Ben Kerswell	A Lahey/C Loyns	EP
James Borossow	James Borossow	Allan Lahey	One Song
Sid Muchow	Sid Muchow	Allan Lahey	Album

## South Australia

<b>Disk Edits Pty Ltd</b> Catherine/Neville +61 8 8340 1377 Audio Mastering & Post Production			
Skintilla	Skintilla/Steve Fieldhouse	Neville Clark	Audio Mastering
Kinetric Playground	Band/Transini/Willoughby	N Clark	Audio Mastering
Foot In The Door Six Pack	A Cooper	N Clark/P Kolomitsev	Mastering
Liquid Blue	Liquid Blue	Neville Clark	Audio Mastering
Argon	Argon/M Wordley	Neville Clark	Mastering

<b>Mixmasters</b> Mick Wordley +61 8 8278 8506 SSL/48 Track/Studer 2", Pro Tools			
Junior	Greg palmer	Jed palmer	Mix Album
Jeanette Wormald	Mick Wordley	Mick Wordley	Album
Jim Hermal	Phil Cuneen	Mick Wordley	Album Tracks
Peter Combe	D Compe	Mick Wordley	Album Mix

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\*The opinion of many in the commercial sound reinforcement industry.

# interM PC-1650 Stereo Powered Mixer



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12 mono input channels and 2 stereo output channels

### Mono Input Insert

To use external effect processor conveniently insert jacks are provided in each mono input

### 7 Band Graphic Equaliser

The graphic EQ has 7 linear controls with centre frequencies of 63Hz, 160Hz, 400Hz, 1KHz, 2.5KHz, 6.4KHz and 15KHz. Each control permits 12dB boost or cut

### +48V Phantom Power

Phantom power is provided at each mono input channel for condenser microphones.

### DSP (Digital Signal Processor)

The internal DSP has 6 high quality effects, each with 16 different parameters that can be adjusted to suit the mix as required.

### Pre EQ and Post EQ Stereo Line Insert

The line insert jacks accommodate TRS-type plugs at 4dB to permit insertion of external effect devices.

### SPECIFICATIONS (0dB = 0.775Vrms)

Rated Output (1KHz, 0.5% THD)	500W, 4Ω Per channel	EIN	-128dB
Maximum Voltage Gain		Residual Noise (only master fader raised)	-77dB
CH in to PRE GEQ/MON/EFX OUT	64dB	Crosstalk (at 1KHz)	-73dB
Stereo CH in to PRE GEQ OUT	34dB	Power Source	AC 110V/240V, 50/60Hz
AUX Return to PRE GEQ OUT	0dB	Power Consumption	720W
THD (20Hz - 20KHz)	0.1%	Weight	36kg
Frequency Response (+1/-2dB)	20Hz-30KHz	Dimensions (mm)	702W x 175H x 510D
CH EQ Control High, Mid, Low (12K, 2.5K, 80Hz)	±15dB		

Australian Distributor: Magna Systems and Engineering  
Unit 2, 2E Smith Street, Chatswood NSW 2067  
Tel: (02) 9417 1111, Fax: (02) 9417 2384  
www.magnasys.com.au

New Zealand: Edwards Sound Systems  
20 Nika St., Mt Eden, Auckland, New Zealand  
Ph: +64 9 353 4361, Fax: +64 9 358 4366  
www.edwardsound.co.nz

## Tracking Guide

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www.factorysound.com



# CHARTS



ARTIST: Eskimo Joe  
SINGLE: Who Sold Her Out  
PRODUCED: Ed Buller and Eskimo Joe @ Sing Sing Studios, Melbourne  
ASSISTED: Matt Maddock  
MIXING: Shaun O'Callaghan @ Studio Couch, Fremantle, WA  
STUDIO: Studio Couch, Fremantle, WA



ARTIST: Shanley  
SINGLE: Sleep  
PRODUCED: Matt Fell  
ENGINEERED: Trent Williamson  
MIXING: Chris Dickie  
STUDIO: Studios 301



ARTIST: Nikki Webster  
SINGLE: Strawberry Kisses  
PRODUCED: Ross Fraser, Chong Lim & Doug Brady  
ENGINEERED: Steve MacMillan  
MASTERED: Michael Costa for Stream AV

## Victoria

ARTIST	PRODUCER	ENGINEER	SESSION
<b>Audrey Studios</b> Craig Pilkington +61 3 9415 8599 HD recording, arranging, sequencing, editing			
Madison Avenue	Cheyne Coates	Craig Pilkington	Single Remix
Nabarlek Band	Pilkington/ Mohney/Guymala	Pilkington	Album Mix
Archie Roach		Craig Pilkington	Album Demos
<b>Backbeach Recording/Elevation</b> Mark Rachelle +61 3 5988 6948 24 Tack 2" Automated mixing + Pro Tools			
l'more	16 <sup>th</sup> Element	Mark Rachelle	Remix
Renee Prue	Mark Rachelle	Mark Rachelle	Album
Earth	Earth	D W Norton	Album
20 Minutes	20 Minutes	Therin	EP
Superphonic	Glen Oakes/Mark Rachelle	Mark Rachelle	Tracking
<b>Crystal Mastering</b> Joe Carra +61 3 9326 2318 Mastering Suite			
Madison Avenue	Van/Rachelle	John Ruberto	Mastering Single
Cryptal Darkness	O'Neil	Joe Carra	Mastering Album
The Dumb Earth	The Dumb Earth	John Ruberto	Mastering Album
Irrelevant	Irrelevant	John Ruberto	Mastering EP
<b>Dex Mastering</b> Adam Dempsey +61 3 9376 5118 Pro CD mastering & Audio Restoration			
Pawn	Andrew Simpson	Adam Dempsey	EP
Santa Teresa Band	CAAMA Music	Adam Dempsey	Album
Matt Pitt	Matt Pitt	Adam Dempsey	Album
The Country party	Rob Mahoney	Adam Dempsey	Demos
George Washingmachine	John Bye	Adam Dempsey/Ben Hurt	Album
<b>Honeyface</b> Mark Hilton +61 3 9507 2067 Digital recording, mixing & mastering			
Kya Moore	Mark Hilton	Mark Hilton	Solo Album
Dom Jurcec	Mark Hilton	Mark Hilton	Solo Album
<b>Metropolis Audio</b> Sally Rodrigues +61 3 9696 2111 MFX3 + Digital Post/48 track SSL Room			
Nikki Webster	Chong Lim	Doug Brady (E)/Chong Lim (PR)	Album Mix
<b>Studio 52</b> Paul Higgins +61 3 9417 7707 3 Studios in one facility, combo of digital formats plus 2" analogue			
Good Charlotte	Mitch Kenny/Ed Numervoll	Mitch Kenny	Live Recording
Cash Backman	Trevor Carter	Trevor carter	Album Mix & Mastering
John Huckin Band	Lex	Mitch Kenny	Production Demos to shop
Absolute Zero	Mick Spencer	Mitch Kenny	EP
<b>True Form Recording</b> Neil Gray +61 3 9391 0907 Mackie HDR 24/96, Soundtrack 36 Channel Inline console			
20 Centuries	Neil/20 Centuries	Neil Gray (E)	EP
Hybrid 69 Neil/Hybrid 69	Neil Gray (E)	Mix EP	
Gridlok	Neil/Gridlok	Neil Gray (E)	Mix EP
Tanya Monaco	Neil Gray	Neil Gray	Demos
<b>Wombat Rd recording Studios</b> Barrie Clissold +61 3 5145 4204 24 track Digital + 16 analogue			
Voices of sale	Julie Ward	Barrie Clissold (E)	Live Choir Recording
Dshort Notice	Geoff Cross	Barrie Clissold(E) (PR)	Album Tracking
George Rawlings	Barrie Clissold	Barrie Clissold (E)	Album Tracking
Band	J Hackman	Barrie Clissold	Alb. tracking, Mix&Master

## Western Australia

<b>Poonshead</b> Rob & Sam +61 8 9339 4791 Audio recording/Production/Mastering			
Juno	Rob Grant	Rob Grant	Mixing
waste Of Space	Rob Grant	Rob Grant	Album
The Outhouse Rockers	Rob Grant	Rob Grant	EP
Martin Moon	Martin Moon/Alan Dawson	Rob Grant	Album
Superscope	Rob Grant/Kevin Borruso	Rob Grant	Tracking
<b>Satellite Recording Studio</b> Darren Halifax +61 8 9470 4003 Pro Tools, 64 Tracks x 24 Bit			
Riverview Church	Andrew Bolt	James Hewgill	Weekly TV Show
Kerry Holmes	Kerry Holmes	Darren Halifax	Demo CD
Dallas C Hill Jnr	Dallas C Hill Jnr	Darren Halifax	Demo CD
Candice White	Caroline White	Darren Halifax	Demo CD
Gavin Maher	Gavin Maher	Darren Halifax	Demo CD
<b>The Sonic Lab</b> Mark Whitehouse +61 8 9375 3902 Sonic Solutions Mastering Suite			
Vdelli	Vdelli	Mark Whitehouse	Live Album mastering
WA Museum	Fran Sweetman	Mark Whitehouse	Baudin Soundtrack
Music Design Systems	Tim Count	Liam Collins	DVD Show reel
Lime spiders	Dom Monteleone	Mark Whitehouse	Compile Live CD Master

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Rod Pascoe joins Leon Hart at newly-named D2a Pty Ltd at Crows Nest (Sydney). Rod comes from a film sound recording background and will promote DPA microphones. Leon and Rod can be contacted on 61 2 9957 5389.

David Williams joins new pro audio distribution firm Network Entertainment Technology, as industry consultant. NET was born from the sale of GUET's distribution arm to Billy Mawer, Claver Harper, and others. David worked for the original JBL importer in Australia, then went to Jands when that firm took on JBL. He recently left Jands, and his new job is much, much closer to home. Also joining NET is Chris Mawer, doing internal sales. Call NET on +61 2 9905-5997.

**Lots Of Winners**

At Lots Of Watts recent 36hr sale were a two prize draws - those who spent over \$400 and those over \$1000. The winner for over \$1000 was David Edwards and he won a DVD player. For the over \$400 draw, Anita Hartmann won \$200 worth of hire.

Altronic distributors have welcomed John Lay to their Melbourne sales team.

John gained his experience in public address and audio equipment at Audio Telex. John can be contacted at the Victorian wholesale office on +61 3 9574 0065 or mobile: 0429 939 964

**Congratulations...**

...to Jaimee Collins of Clearlight Shows in Melbourne, recently engaged to Andrew Powell.

...also to Connections Publisher Julius Grafton, also recently engaged to Janelle James.

**MY GIG**

**A day in the life of Shelly Lee, Sound Supervisor**

Name: Shelly Lee  
 Age: 31  
 Occupation: Sound Supervisor  
 Company: System Sound  
 Current Project: Miss Saigon / Les Miserables (Sao Paulo)  
 Home City: Melbourne  
 Current Location: Hong Kong



Shelly Lee entered the industry through an involvement with amateur theatre. While studying for her Physical Science degree at LaTrobe University and majoring in Electronic Engineering, a theatre friend told her of an opportunity to work on the Melbourne production of *Les Miserables* as chaperone to the child actors.

Shelly thrived in the professional theatre environment and began to look for an opportunity to combine her technical interests with large scale productions. She soon met up with System Sound who recognised her potential and employed her on a part-time basis while she completed her degree. Upon finishing her studies, Shelly became a permanent employee of System Sound specialising in touring productions. 12 years and around 20 international tours later, Shelly is currently preparing for the opening night of *Miss Saigon* in Hong Kong.

**6am:** "Most of my work is setting up musicals overseas so I live my life in hotels. A

typical day for me is getting up at 6 or 7am, depending on what time we are starting at the theatre. I start my day with an hour workout at the gym, if I am being good and not consumed that one extra glass of champagne the night before. Next would be a quick breakfast in the hotel restaurant, desperately trying not to consume all that is on offer, otherwise I would need to spend another hour at the gym"

**8am: Arrive at the theatre.**

"Each day varies quite a lot depending on what stage of the production we are in. Today we've got the press call for *Miss Saigon* as it opens tomorrow night. As Sound

(please turn the page)

**JANDS LIVE**

Free Industry Workshop July 14-15, 2001

Jands are holding a workshop weekend for those that have ever wanted to experiment with microphone placement, ask lots of in-depth questions about wave propagation, wondered what the phase relationship between speaker components means, wondered how to correctly set the right gain structure in a mixing console, or were confused about patching your lighting system and getting the console talking to your dimmers and moving lights.

To be held at Sydney University on the weekend of July 14-15th the workshop will allow you to test drive mixers, mics, dimmers and luminaries; go to hourly seminars with industry experts; and meet other musos/

techs/engineer boffins. Lectures and small hands on sessions with special guests and gurus will run all day in five concurrent venues. Attendees will be able to stand at a lighting console and program a show, or listen to music on in ear monitors.

Registration is essential. Please go to [www.jands.com.au](http://www.jands.com.au) or phone Jands Electronics on +61 2 9582 0909.

**SMPTE HOSTS FREE FORUM**

This month's SMPTE biennial conference and exhibition (Darling Harbour, July 9 to 13) will feature a free, half-day forum on training and education for the film and television industry.

The forum will be held on Friday, 13 July, 2001 for two hours, from 10am to 12 noon. [www.smpete.com.au](http://www.smpete.com.au)

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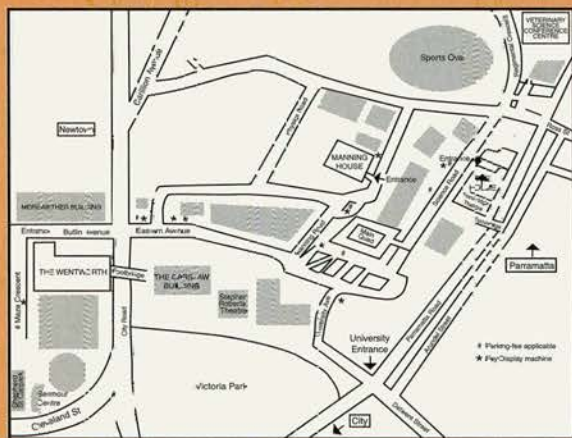
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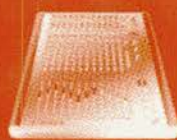


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Applications close Monday  
30 July and should be marked  
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(continued from previous page)

Supervisor it is my responsibility to ensure the sound-side of the call goes smoothly and everyone has what they need.

"At the start of the day we would go through the normal power-up procedure and system checks. This involves walking through the entire speaker system listening for any discrepancies, testing all the effects devices, radio mics, orchestra mics etcetera. The touring sound crew, whom I might add are fantastic on *Saigon*, would carry out these checks as I prepare for any changes that need to be made. As we are still in the production period, any changes required after yesterday's rehearsal are now implemented and tested.

**10am:** "By 10am I start to liaise with the directors and the management to finalise the requirements for the Press Call. This would include who is doing speeches and when, how many audio splits are required for the cameras, and what scenes are being run. As the press calls jump from one piece to another, usually out of sequence of the show, new plots need to be worked out and coordinated. At 11.30am we would set up a press split, run any extra mics that are required and do any last minute checks.

**1pm: The Press arrive.**

"I liaise with the press, via an interpreter on many occasions, and make sure they've got everything they need. We send them tone so they can check their feed, followed by some bars of music from the orchestra so they can set a rough level. As most recordings don't deal with the dynamic range that we would produce in the normal show running, we mix a press call quite differently in order to minimise the dynamic of a live performance.

The overall mix they receive consists of 26 radio mics, 40 channels of orchestra, 8 channels of sound effect and 6 channels of reverb, and would have been worked on and fine-tuned during the previews. Normally a scene would be run twice to set audio levels and new camera angles, then more explanations, possibly a question and answer time, more scenes and so on and that's another press call over.

**2pm:** "At the end of the call we have to pack up all the press feeds, reset any changes and then start preparing for the afternoon rehearsal. All 26 radio mics have to be collected, re-batteried, tested and redressed onto the cast for the rehearsal. This again is dealt with by our very skilled backstage team.

"This final rehearsal prior to opening night would normally be to clean up any

problem moments in the show, but in our case a last minute cast change has forced this into a new staging call.

"As this is fairly late in the production period any changes made to the system are minimal. Peter Grubb, the sound designer who I have been assisting throughout the pre-production, build and production period, has returned back to Melbourne to continue his very busy schedule on *Mamma Mia*. So my job at this point is to walk around the venue, checking all possible locations and making sure that no problems have occurred as a result of the overnight changes that have been made.

At this point a lot of refinement is still being made with the orchestra and the general mix, so I spend quite a lot of time liaising with the directors and the musical supervisors taking notes. This is great as we all learn a lot about each other's intentions and work together in order to deliver the show to the audience in the way the writers envisaged.

**5.00pm:** "At the end of the show we make any changes that are necessary and that we were unable to do during the run - sound effects on *Saigon* are far from subtle! So as not to make too many enemies, we do most of our loud testing and adjustments during everyone else's dinner breaks.

**5.45pm:** "After that it's straight into set-up for the evening performance and we go through full check all over again.

**Breaks:** "Breaks tend to be quite short during this stage of production. We would probably have a maximum of half an hour for lunch, and then probably another half an hour for dinner, so it's never more than an hour's break in a day. In Hong Kong there are lots of places to grab a quick snack especially if you like noodles and can speak Cantonese. I definitely need to work on the latter.

**7.45pm: Evening Performance starts.**

"Having an audience always holds some level of anxiety, especially if it is an unfamiliar venue. Sometimes it really helps the acoustics of the room and sometimes it makes it worse. Luckily the difference wasn't too dramatic which meant we could move forward with the tuning and balancing. Tonight is much of the same, making some fine adjustment and taking last minute notes.

**10.40pm: Performance finishes.**

"The show comes down around 10.40pm. While the crew do backup files of the day's work, collect the radio mics and shut down the system, I check with the directors for notes or any other issues or concerns. Based on the evening's efforts and any

tasks on the job list, I then liaise with the sound team to discuss the calls for the next day. Realistically we wouldn't leave the building before 11.30 during this stage of production.

Yet another big day is over so it's off to the hotel lounge or some local bar for that wind-down couple of drinks with the rest of the company. For me, champagne often does the trick.

Most people are pretty tired by this stage of the production period so a couple of drinks is all that it takes to feel suitable reunited with that well-travelled pillow. (Yes, I never leave home without my pillow. I think it is the trick to getting that well-needed full night's sleep in a new and often strange environment.)

A quick log-on to check my emails and read the daily show reports from *Les Miserables* which we have just opened in Sao Paulo...then sleep by about 1.30am.

"Opening night is what everyone has been working towards so it is always a little nerve racking. During the show I sit at the console in the auditorium as a support for the operator, ready to adjust for that surprise trumpet solo or that hatted mic, and God forbid if anything goes wrong I'm there to trouble-shoot.

So that's it for another production period and it's off back home to Melbourne. After taking a few days to catch up on the personal backlog, it's back to the office to archive the last few weeks. This is important to assist us in the next move which for *Saigon* is from Hong Kong to Singapore in July. Even when I'm back in the office I'm in constant contact with the shows I supervise and always ready to assist them in any problems they may encounter.

Any pre-production period right through to opening night is very intense, which doesn't leave time for anything else. Sometimes I think it would be great to spend more time at home and be able to catch up with my family and friends, but I guess that's the trade-off. I wouldn't be doing anything else, I love it, and as you spend so much of your life working, I think it's really important that you do something you love. I feel very fortunate to have the experiences I have had, especially the overseas travel, the great people I work with, and the constant support of System Sound. No to mention my amazing parents who look after my home-life while I am away, which on all accounts is quite a lot. As the majority of touring people would say, we cannot do it without them.

• Shelly Lee spoke to Mandy Jones

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## THE SHAPE OF THINGS TO COME?

'To look forward first look back' is good advice, although students of history may counter that we don't learn too well from our past mistakes. Nevertheless, any perspective of where our industry is going in (say) the next 30 years will benefit from an understanding of where we came from over the same period.

For example, on an international scale long range airtravel had only just begun in 1970 with the first commercial flight of the Boeing 747 and it was to be another 7 years before supersonic commercial flight was feasible. The larger aircraft and long range supersonic flights currently projected could have enormous impact on the tourism industry in Australia and the current competition in internal airfares could have a similar impact if it becomes relatively cheaper to fly from the Eastern States to the West than to more exotic locations of a similar distance.

Over the next 30 years the inevitable reductions in the use of fossil fuels will trigger a radical rethink of both personal and civil transport and the huge population growth will influence this (for example Perth is set to grow by 70% in the next 50 years). Experts at Australian Universities are already predicting massive traffic jams unless mass transit systems are employed. If such methods are not successful, will people be deterred from travelling on a daily basis and cause local employment and local facilities to be improved? Will this help maintain a community otherwise being transformed into commuters? What impact will this have on travelling to entertainment venues?

Undoubtedly the use of computers seem to have dominated the last 30 years but the personal computer, perhaps the most significant instrument in this area, did not arrive until 1975 and the ubiquitous IBM PC not until 1981. The equally ubiquitous Microsoft Windows was not launched until 1990 (actually version 3). Certainly the next generations of both hardware and software will be smaller and more powerful (easy!) and there is likely to be a blurring of divisions between the computer in the study and that in the fridge. But what of those unable to afford such technology - we already have the disposable pocket telephone, will we move towards disposable computers logged into an enormous mainframe in another country?

The related growth of the world-wide-web is beginning to interest researchers for its effect on almost all aspects of our life. Dissidents use the web to promote their causes where local censorship gags them - early examples have occurred during the breakup of the former Soviet Union. Governments use the web to avoid being edited by the media - the US Government in particular was an early exponent of this technique. More recently doctors have expressed concern about patients undertaking self-diagnosis through the use of the web and there are parallels with the other professions. All this would have been unthinkable in 1970.

Equally unthinkable then - Paul McCartney and Madonna in particular have recently given major

concerts, not in stadia - the icon of the last 30 years - but on the web. Stephen King, one of the world's most successful popular authors, published his last novel on the web and despite his teething troubles, many other publishers are working on the same lines. In similar vein the use of virtual reality as a training tool, notable in flight and medical simulations, will eventually spill out into the home and transform domestic entertainment. How will live entertainment be seen by comparison?

The imminent increase in the bandwidth of internet transmissions promises to open up new ways of using the system and especially of video conferencing, this could change the way people work and relate to each other, especially in Australia where vast distances are part of the culture.

The last 30 years have also seen a growth in 'fast food' and to the extent that sociologists have even coined the phrase 'McDonaldisation' to describe our apparent need to avoid making any effort to service our daily needs. Will tomorrow's adults therefore be less able to undertake simple crafts or will they crave interaction with unpredictable live entertainment as a reaction against a pre-packaged lifestyle?

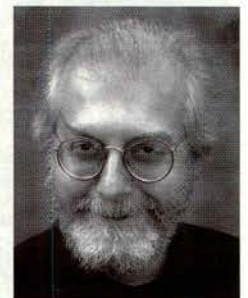
Another development is the response to the fear of crime by increasing the security of the home which is already becoming a fortress by comparison with that of 1970. So, with the growth of computer delivered news, entertainment, healthcare and food then communities of the future could be very different from those of 1970 & today's young people will see nothing unusual in that.

Undoubtedly technology will influence what kind of community facilities will be needed over the next 30 years, video art for example was unknown before 1980. Despite the trend for electronically-based equipment to lower in price after its initial introduction, it is likely that future community facilities will demand higher fitting-out costs to serve this technological area and equally that partnerships, notably with education, will be the norm for these areas rather than the exception.

One trend from the past 30 years is the growing awareness of the influence of architecture on its community and the increasing integration of art into architecture. Today's young people are more aware of how music is produced than were their parents and they are equally more visually aware as a consequence of more than 30 years of their own fashion and advertising graphics. As these people grow into positions of influence this greater (possibly subconscious) aesthetic sense will have an influence over what tomorrow's world looks like and sound like and this too will shape community and entertainment facilities.

How prepared will people be in 2031 to leave their fortress and relate not to a screen but to other humans? Will live entertainment need to become even more Hi-Tech to survive, and if it does, what of the older classical works, how do we sell them in 2031? Significantly, will live entertainment be cherished because it isn't a digital illusion but tangible and unrepeatable? Let's hope so.

**"Paul McCartney and Madonna in particular have recently given major concerts [...] on the web"**

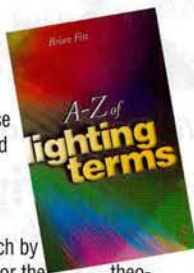


# Connections BOOKSHOP

## THE A-Z OF LIGHTING TERMS By Brian Fitt \$52

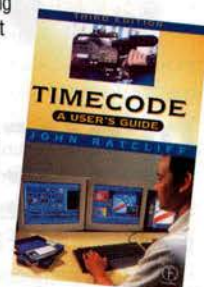
The A-Z of Lighting Terms will be of use to all those in the industry, particularly students, who have heard expressions or terms and wondered what they meant. Although most technical books have glossaries, this book has expanded on many of these terms using illustrations to clarify some of the more complicated principles, formulae and laws.

There is much common ground between American and European terms and practices and this book aims to give a transatlantic flavour. Training in the lighting industry is very much by experience and hopefully, this publication will be a good basis for the theoretical and practical side of lighting.



## TIMECODE By John Ratcliffe \$109

Recent radical changes in timecode technology, location shooting and post-production working practices have been brought about both by the fragmentation of the television programme making industry and by a dramatic increase in affordable digital transmission and editing equipment and systems. With the expansion of non-traditional television service providers (cable, satellite and video-on-demand) almost anything goes as far as shooting and editing formats are concerned. Timecode: A User's Guide is an indispensable reference for anyone needing to get to grips with the many aspects of timecode, whether inhouse or on location.



## Audio Systems Technology – Handbook for Installers & Engineers - Level 2

AUDIO SYSTEMS TECHNOLOGY - 1-James S Brawley- \$89

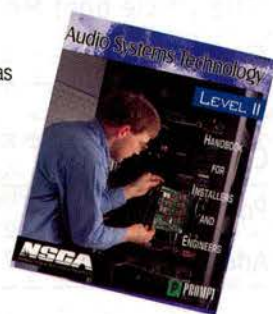
AUDIO SYSTEMS TECHNOLOGY - 2-James S Brawley- \$107

This book presents the basics of audio installation as it is practised in the industry today. Here are just a few of the topics:

- Basic Audio Calculations – Acoustical Measurements – Microphones, Loudspeakers & Mixers – Trigonometry & Geometry – Wiring & Cabling – Effective Business Communication – Bench Test Equipment

*This book is for you if:*

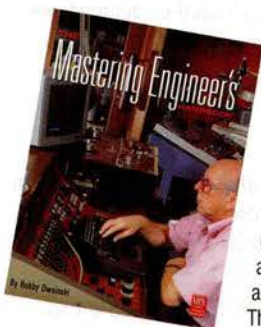
- You are a developing audio installer or engineer.
- You want to learn about the basics of audio systems design and installation.
- You are experienced, but want to brush up on intermediate level audio.



## The Mastering Engineers Handbook By Bobby Owsinski \$54

Now, everything you always wanted to know about the art of music mastering is available in one book! Peek into a top-flight mastering house and see the tools of the trade, explore the secrets of making hot masters, and learn rules for frequency balancing and dither. Learn how CD's work and how they're made, and relive mastering history with a separate chapter about mastering for vinyl and how records are pressed. This book extensively covers stereo mastering and also

looks into the future with an expansive section on surround mastering and multi-channel delivery. Plus, the b5hird section feature interviews with such mastering giants as Bernie Grundman, Bob Ludwig, Glenn Meadows, Doug Sax, and more.



A PRACTICAL GUIDE TO STAGE LIGHTING-Shelley- \$80

A SOUND PERSON'S GUIDE TO VIDEO-David Mellor- \$72

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AUDIO SYSTEMS TECHNOLOGY - 2-James S Brawley- \$107

AUDIO WORKSTATION HANDBOOK-Francis Rumsey- \$82

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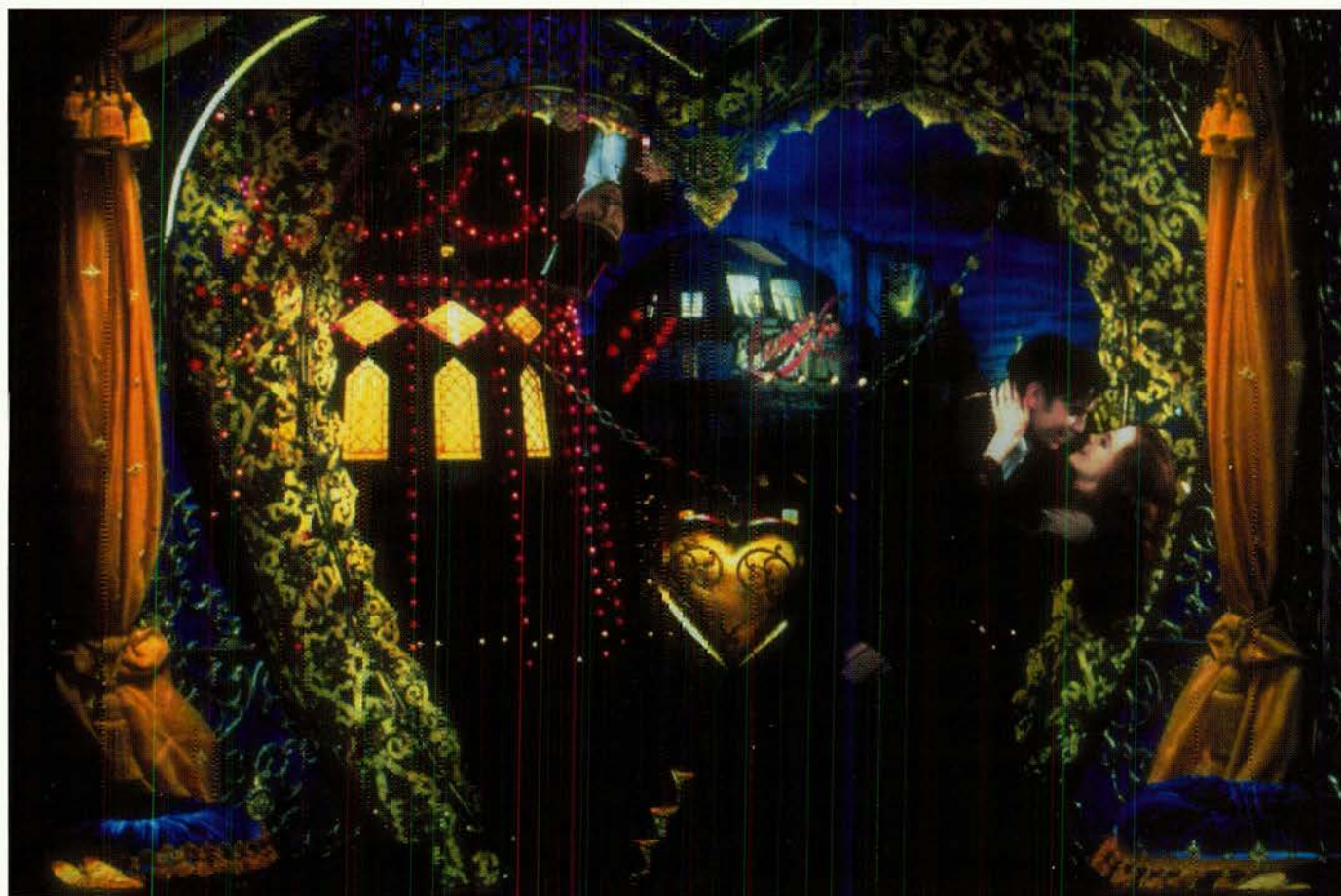
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## Moulin Rouge gets Lit

continued from page 23

pressure on the guys loading cues into the board on the run. This is unique to the film industry, different from opera, or theatre."

### Taking it to the limit

"Power on these big shows is always an issue – you never have enough," Lee said. "We backed up with generators. On the main hall set (stage 2), we were able to pull power from other sound stages. We were pulling about 2500 amps per phase, and all of that power had to be filtered through transformers to remove the harmonics that dimmers create. For the garden and street set, we used 1500 amps per phase from the stage, plus a 1250 KVA generator.

"It was big, certainly the biggest studio based lighting job. A show like *Mission Impossible: 2* was studio and location; and a different dynamic to the way Baz works.

"In pre production, Iain 'Strapper' Mathieson did a lot of the quantity estimations. I was more involved in the big picture overview of all the sets and left Strapper to oversee stage 2. Matt Buchan

oversaw the installation of the garden and the street on Stage 1. The logistics were just huge. I had Strapper and Matt running the crew – they were the rigging gaffers. I was able to supervise what was going on with them, liaise with the office and the various other departments, particularly the art department to make it all happen.

"We ran a crew of 10 people on night shift permanently when we were shooting the interior of Moulin Rouge, plus the shooting crew of about 10 electricians headed by Steve Mathis and supported by Australian Gaffer Paul Johnstone plus two guys, Craig Knight and Geoff Kelly looking after the dimmer/DMX system while the crew were shooting. On top of that we had other crews, headed up by Moses Fotofili and Greg Little, who were rigging the other sets we were scheduled to move into or coming out of.

"There were a lot of changes to schedule that caused us to radically change things from time to time. Because of the way Baz works, ideas continually flow. The difficulties of the choreography held up the production, which meant we ran out of studio time. Dancers got tired, Nicole broke a rib. So we had stage one and stage two, which housed the two largest sets, both

live at once. Baz had pushed everything to the limit with stage space availability. *Star Wars* was snapping at everybody's heels to get into the stages, and *Moulin Rouge* had to get out in a very big hurry. So the wrap out of Fox was another huge exercise in working fast. We had 50 people working around the clock just stripping cable off those sets. We got it out in 2 days, we stripped most of stage two in 36 hours, and did stage one in 18 hours.

"The amount of equipment, particularly the distribution and dimmers that we had tied up, was absolutely phenomenal. To give you an idea, we were using a 45' semi trailer to wrap out of there. This trailer held 44 x 1 cubic metre pallet bins, full of cable off each stage. As soon as the truck was loaded it was sent to Panavision Lighting to unload and then back to Fox on a constant cycle.

"It certainly took the industry to a different level in what we can achieve in this country." •

• Thanks to Fox PR for supplying these show shots within 24 hours - and well before deadline

## The End of The Road



Greg Clarke with Dave Peach's handmade preamps



Dave Peach of Peach Audio



Artie Jones from Factory Sound

Connections the system, set up in an un-used dressing room. The Radar II has 24 bit, 48kHz analogue to digital converters which are reputed to sound particularly nice. "This is a most 'natural' system" said Artie, "it doesn't try to do anything other than serious razorblade work".

This means it has no serious waveform editing, rather "We press the start button at the beginning of the show, and the stop button at the end. It's a

'one's and zero's' version of a 2" recorder".

In this case, a 36Gb SCSI hard drive holds almost 3 hours of music, 24 tracks, at 24 bits. Two drives are mirrored together for security.

An Akai DR16 hard disk recorder was also used to record audience ambience. This is the key to a good live recording, says Artie, and eight stereo pairs of mic's were run out into the house - including a stereo Crown PZM SASS-P MKII 'head' hung off the front truss. The two recording systems were tied together with a word clock generator.

Signals from the stage were run into new Peach Audio S.E. Class tube preamps, hand made by Sydney audio legend Dave Peach. These modular preamps are a work of art.

We asked Greg about the Radar, this is what he said: "The Radar uses a recompiled version of BeOS, strictly speaking that is the operating system... the machine boots BeOS, then starts the Radar application automati-

cally. The big deal that separates it from the lower priced standalone hard disk recorders is the sonic quality of the converters. To my ears it is in the same league as the Apogee AD 8000 converters, which at the price of Radar, is astonishingly good value.

"I had the Radar and the Akai DR 16 resolved to a Digidesign USD as my clock source, which utilises an Apogee crystal, regulated with a thermistor. I have been running the USD as our house clock at Electric Mountain for over a year now, and especially since I started working full time with 24 bit resolution, I have appreciated what a good clock does for digital audio.

"When I brought the Radar back to the studio I was very impressed with the ease that I was able to lock back up to ProTools for the transfer back for the mixing phase of the project. I should point out that the mic preamps, USD, Radar and DR 16 were all powered via one of Dave Peach's balanced mains supply units during the recording and transfer. The balanced power box definitely reduces jitter in digital clocks, and I had the opportunity at Penrith to listen to the whole chain both with and without the USD and balanced mains. Put it this way, now I have done that AB comparison, there's no way I would attempt digital audio recording without the Peach box if there was one within a bull's roar!"

The signal path was as solid as possible. Microphones from on stage were patched directly into Dave Peach's all valve class A preamps. The line level output drove a transformer isolation system hired from Lots of Watts.

From there a direct feed was routed down 100



Radar and recording rig (right)

metres of multicore and patched into the Radar's analog converter inputs. The transformer isolated output from the splitter system drove the active splitter system that came with the sound reinforcement system from Audio and Recording. The analog outputs from Radar fed a DDA console hired from Richardson Audio, with the monitor output driving a pair of active Mackies from Bob Wheatley, and the main console outputs going to a Tascam DA 30 DAT machine loaded up with 3 hour data DATs (Greg couldn't find audio grade DAT tapes longer than 2 hours).

The DA 30 drove a Marantz stand alone burner which Greg noted was kindly provided by TAG. "The data backup grade DAT tapes are not recommended for audio, but I wanted a backup for the burner, as the band needed CDs of the shows in order to pick versions of the songs to mix.

The ambient/crowd mics fed an ATI 8 channel preamp which in turn drove the Akai DR 16 recorder.

The Radar has a removeable drive caddy, and an external SCSI connector.

"Each night we recorded to 36 gig ultrawide drives in external cases, with an 18 and an 8 gig drive hanging off the Akai DR 16. I should point out that Bob Wheatley who owns the DR 16 told me that he always experiences SCSI noise in the recordings he had done using external drives. As well as reducing ground hum and other nasties, the Peach balanced power unit also sorted out the grounding issues that create the SCSI noise he had previously noted."

The Radar is capable of 192k recordings (limited to 6 tracks presently) but for this project Greg decided to go with 24 bits and 44.1 kHz.

"I would like to thank Artie from Factory Sound in Melbourne, Lewis and all the guys at Sound Devices in Sydney, Bob Wheatley, and especially Dave at Peach Audio in Coogee for implementing all those ideas in the new preamps" says Greg.



## AV companies, polyester shirts, events, and bands. Aaron Chugg tells:

Aaron Chugg (cousin of infamous concert promoter Michael) is a student of business methodology. He managed The Screaming Jets for years and then left a few years ago to observe the Eventing Industry, causing friction with the band who saw it as an act of desertion. The band had a rother manager for a while, then Aaron came back.

In that time away, he worked on the Olympics torch relay, and entered the world of Events - working for several major audio visual staging companies as a senior audio tech.

"I wore a polyester shirt" he says. "Can you believe that? Swsating and smelling away in front of corporate customers, because your uniform has a polyester shirt! I knew I was at the shallow end of the HR food chain when I started wearing those totally inappropriate uniforms. Talk about style over substance!"

Aaron's days in the corporate AV world were not happy ones. He says that the larger companies (one in particular) have terrible crew churn rates, and fail to understand the cost of burning out their crews. "If you have a Barco 6200 go missing, you can quantify the cost. If you have a senior technician burn out, you can't measure that cost. But it is substantial and happening all the time.

"I've got a saying that people should be loved, and things should be used - not the other way around".

"They fail to appreciate the intellectual capital in the heads of their crew. The management usually have a management or marketing background, not a technical background. What is amazing is that we did shows for major corpcrates who preach intellectual property and staff human resource mantras, and the management don't extenc the same methodologies to their own staff. It's a serious issue, and very ironic".

### BAND MANAGEMENT

How much money do managers earn? Chugg won't say. But conventional wisdom has it as a cut of ten to

twenty percent of gross. The contentious part is, who pays the accounting and legal fees?

Manager's usually see themselves as consultants, and the band pays their accounting fees as an additional cost. "Many managers fall apart on administration" says Aaron. "And, most people join bands to escape the real world, so they're kept in the dark".

"I learned management from **Grant Thomas**" (Crowded House and other acts). "He told me you need to think of yourself as a sheepdog - you herd everyone, band, record company, audience all towards the gate. It's when you are pulling them all along that you should reassess whether the relationship is functional".

### DEALING WITH MUSICIANS

Aaron Chugg asserts he is the greatest sound engineer in Australia, which is probably something he says just to stir people up. But he has been around. So, some tips about dealing with musicians:

**Aaron's days in the corporate AV world were not happy ones. He says that the larger companies have terrible crew churn rates**

"They expect you to be a trained professional. If there is a problem, they think you will just press a button like on Star Trek, to fix it.

"I like mixing FOH (front of house) much better than foldback, because at

FOH it's just you and technology - very relaxed. On stage, as in mixing stage monitors, it's you - and the band.

"A trick I learned is to express sound



as phonetics, because musicians can't say 'take some 400 hertz out'. To communicate with musicians, you need to develop phrases like, 'does it sound woolly, or honky, or bockky, or wonky."

## Connections Advertiser

# EASYFINDER!

*Please.... tell them you saw it in Connections!*

### Trade Shows

#### SMPTTE (Broadcast)

July 10-13. Sydney  
www.smptte.org

#### PRO AUDIO & LIGHT Asia

July 12 - 14 - Singapore  
www.pala.asia.calendarone.com/

#### INFOCOMM Japan

29 - 31 August - The Big Sight, Tokyo  
www.icia.org

#### PLASA

9 - 12 September - London  
www.plasa.org.uk

#### INFOCOMM EUROPE

12 - 14 September - Cologne, Germany  
www.icia.org

#### AES 111th (Audio)

21 - 24 September - New York  
www.aes.org

#### LDI

2 - 4 November - Orlando, USA  
www.aes.org

#### NAMM (Music/Audio)

17 - 20 January, 2002 - Anaheim, LA  
www.namm.org

#### ENTECH 2002

4 - 6 February, 2002 - Darling Harbour, Sydney  
www.conpub.com.au

#### MusikMesse

13 - 17 March, 2002, Frankfurt  
www.messefrankfurt.com

**!** CHECK dates direct with show BEFORE making travel arrangements.  
**●** They may change!

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Audio Telex Communications	+61 2 9647-1411	www.audiotelex.com.au	3,40,61
AON Risk Services	+61 2 9253 7000	www.aonrisk.com.au	69
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## Advertising rate guide

MAIN SECTION DISPLAY AD'S inc GST \*Rates in A\$

	Casual	5 x year	11 x year
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Full page, mono	1828	1646	1470
Half page, mono	1097	988	889
Third page, mono	645	604	547
Quarter page, mono	565	482	415
<b>Full colour</b>			
Full page colour	2337	2106	1912
Junior page 130 x 180	1502	1386	1271

**Book by 15th month prior. Call Julius, 1-800-635-514 or 0408 498-180 - anytime!**

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Quarter page box	754	698	650
Quarter page strip	834	772	715

### TRADER, CLASSIFIEDS, FORUM EMPLOYMENT

Book by 20th month prior. Priced by column cm as follows:

Column width is: 1 col: 2.8cm. 2 Col: 5.8cm. 3 Col: 9.0 cm, etc. Any size accepted. Price per Column cm: **Black & white \$14, Colour \$18.** No art charges for text, Logo or pictures \$20 each.

Powered By Crown® or...



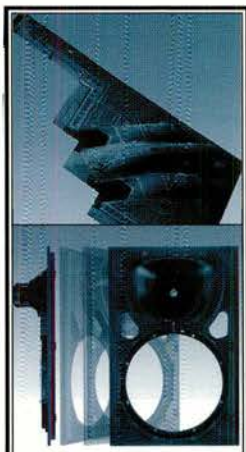
...Add Your Own Power

# Introducing the All New JBL MPRO Loudspeakers. A Merging of Looks, Legacy and Laminar Flow.



Fast and simple - your "Powered by Crown" JBL system is ready to go in seconds

You're looking at a speaker fashioned by more than two generations of JBL engineering. What you don't see, however, is even more amazing. Like a unique Laminar Flow Baffle™, whose principles



One Piece Laminar Flow Baffle, which takes its cue from the aerospace industry, integrates horn, ports and woofer mounting

have their roots in aerospace engineering. A design so refined it will actually reduce distortion caused by turbulence and diffraction. It's an MPRO exclusive.

MPRO exclusives don't end there. Consider our new generation of high performance, transportable subwoofers designed to outperform your wildest imagination of how good low end can sound. Case in point, our new premium MP418SP combines the exclusive, one-two punch of VGC™ (Verted Gap Cooling) and Crown amplifiers in a single, compact, portable enclosure. This remarkable product is more than a powered subwoofer, it's actually a complete and flexible sound system.

The MP418SP features a built-in, two-channel amplifier module that delivers more than 1,300 'Powered By Crown' Watts of performance while also eliminating the cost and hassle of amp racks

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Self-powered and convenient - the MP418SP and MP410

Prefer to use your own amp? The MP255S dual 15" subwoofer uses a dual tuned chamber design to put all its energy where you need it - *in the low end*. Plus, with its heavy duty casters, great styling and tough plywood carpet-covered enclosures, the MP255S is the new high-end sub in the low-end price class.

With all that said, the best way to experience MPRO loudspeakers is at an authorized JBL Professional retailer. For more information, visit [www.jands.com.au](http://www.jands.com.au) and follow the links or call (02) 9582 0909.



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# Stage Zoom 1200

# Why?

Because of its Power, wide-ranging Graphics capabilities, Colour System with countless combinations and superior Optic System. And it is the most exclusive because...

Because it has interchangeable heads, allowing it to be used as a Spot or Wash.

Because it has the most uniform light beam.

Because it has variable progressive frosting, with extremely effective wide beam.

Because it has 4 indexed prisms, which can be combined with the indexed gobo system and continuous colour mixing.

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