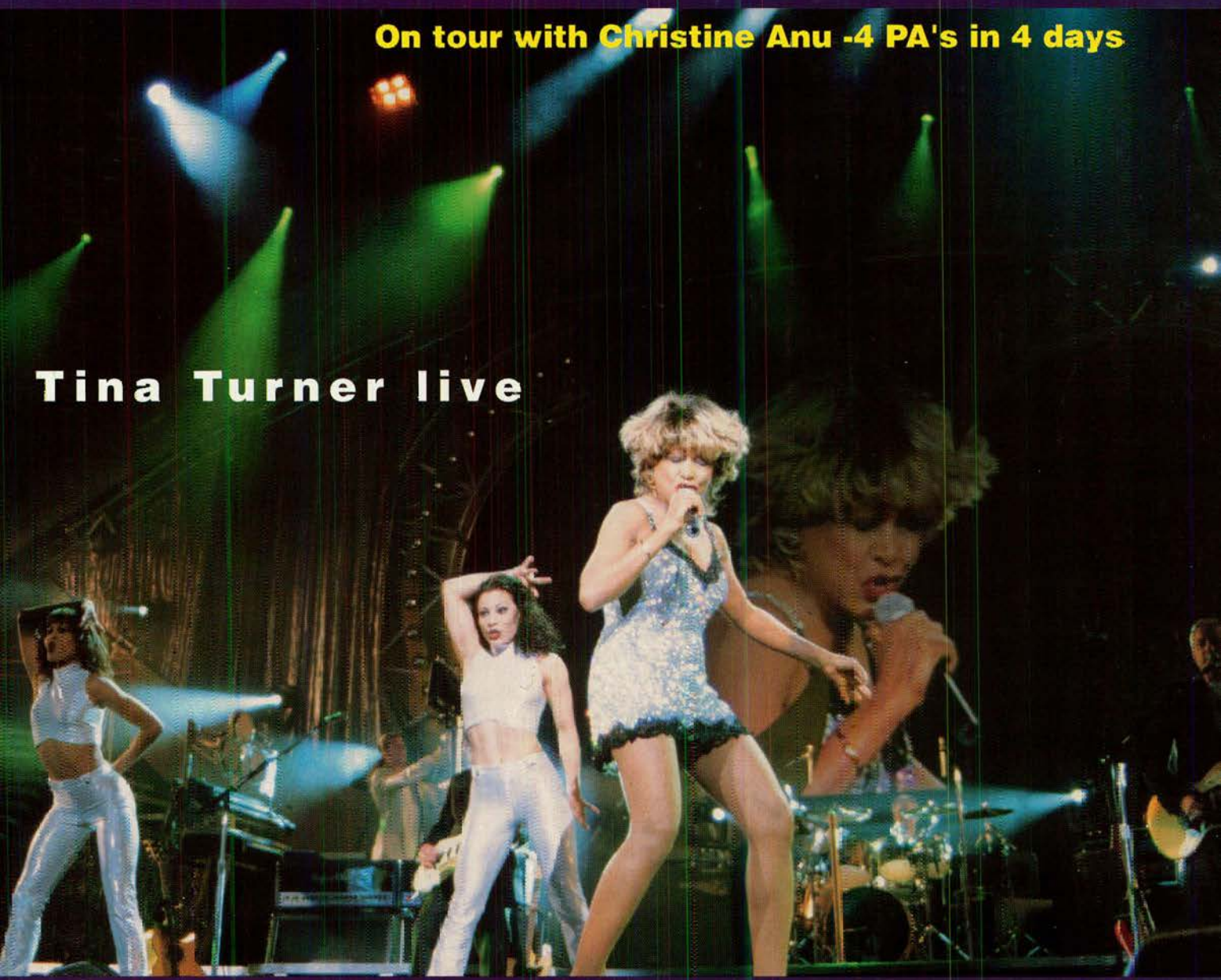
Australia's Entertainment Technology Trade Monthly

Connections

On tour with Christine Anu -4 PA's in 4 days



ENTECH PREVIEW
visitor's guide inside

THE POWER ISSUE-
Balanced Mains for audio,
plus **3 phase power primer**

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- RELATIVE LEVELS~ PRO TALK ON RECORDING
- RSC's A Midsummer Night's Dream
- SIGNAL PROCESSING BUYERS GUIDE
- FILM & STUDIO LIGHTING

What Makes the 160S the Next Industry Standard?



Check out the processing racks in any large studio, broadcast facility, or concert rig and chances are you'll find one or more dbx 160's (amongst a bevy of other great signal processors). Names like Abbey Road, A&M Studios, Westlakc Audio, and Skywalker Sound still count on their 160's to deliver silky smooth vocals, tight bass and crisp, punchy drums... all dbx hallmarks.

While designing the successor to our early classics, we talked to countless musicians, engineers, and producers about the way they like to work and what's important to them in a dynamics processor. Over and over again you told us what you wanted, classic dbx sound in a great package, with all the right controls. The result is the new 160S Stereo Compressor. Twenty-five years of experience, visionary technology, and impeccable craftsmanship combine to produce this masterpiece, a device destined to take its place in pro rigs around the world for years to come.

V8™ VCA

The heart of any dynamics processor is its VCA. The dbx 160S features dual proprietary V8™ VCA modules. This state-of-the-art implementation of dbx's original Blackmer decilinear VCA boasts an unheard-of 127dB dynamic range and ultra-low distortion. Encased in a specially designed aluminum-zinc housing for shielding and thermal characteristics, the V8™ maintains its superior performance in harsh environments.

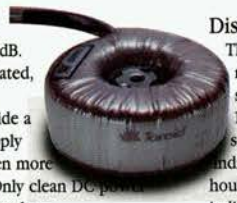


Premium Signal Path

High-voltage 24V supply rails and wide dynamic range active components in the signal path allow the 160S to cleanly process audio while providing a huge 26dB of headroom. Patented high current transformer isolated outputs feature >100dB common-mode rejection and distortion so low it's immeasurable. Designed for extreme conditions these outputs will drive 1000 feet of Belden™ 8541 cable at +30dBm.

Over-designed Power Supply

The 160S power supply features a massive toroidal transformer chosen for its low stray flux characteristics and mounted in a mu-metal can designed to attenuate stray field by 30dB. The can is then isolated, along with the AC power circuitry, inside a shielded power supply cover providing even more noise attenuation. Only clean DC power exits the isolated supply.



Discriminating Component Selection

The new 160S takes full advantage of the most technologically superior components available today. Premium active electronics, precision 0.1% and 1% metal film resistors, great sounding temperature stable polypropylene capacitors, high-reliability board-to-board connectors with gold-palladium-nickel contacts, Jensen® transformers, gold plated Neutrik® XLRs, rare earth magnet relays with gold contacts in a hermetically sealed nitrogen environment, military grade glass epoxy circuit boards, to mention a few, contribute to the most technologically advanced compressor in the world.

Distinctive Craftsmanship

The craftsmanship of the 160S is as stunning as the engineering is innovative. A striking blue front panel machined from 1/4" aircraft aluminum, hand-crafted solid aluminum knobs, LEDs mounted individually in machined stainless steel housings, custom VU meters with peak indicators, and heavy gauge chassis solidify the 160S as the benchmark compressor for decades to come.

Ultimate Flexibility

The 160S combines the best features of all the great dbx compressors, past and present. In addition to having the auto attack and release as well as the hard knee threshold characteristics of the classic dbx 160, the 160S is also switchable to OverEasy® mode, made standard by the classic dbx 165A. And speaking of the 165A, all of its features, including variable attack and release controls, as well as dbx's latest limiting algorithm PeakStopPlus™, are included in the 160S. Not to mention new features such as hardwire relay bypass and external sidechain input, switchable from the front panel.





Designed and built in the USA

All dbx products including the 160S are proudly engineered and manufactured in our US factory. Every dbx product is performance tested and specification verified using Audio Precision® System One. The 160S is a most worthy successor in a long line of world class dbx compressors.

See, feel, and hear one for yourself.

dbx®

H A Harman International Company

dbx Blue Series MIC PRE



In today's recording environment the need for a high quality, great sounding microphone preamp is growing rapidly. Designed to unparalleled standards, the dbx Blue Series Mic Pre makes a great companion to the 160S Stereo Compressor. The dbx Blue Series Mic Pre is designed to provide the audio professional with two channels of deadly-accurate mic pre-amplification, revealing the true character of any microphone. A world class pre-amp for world class recordings.

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See us at ENTECH Jands stand F3

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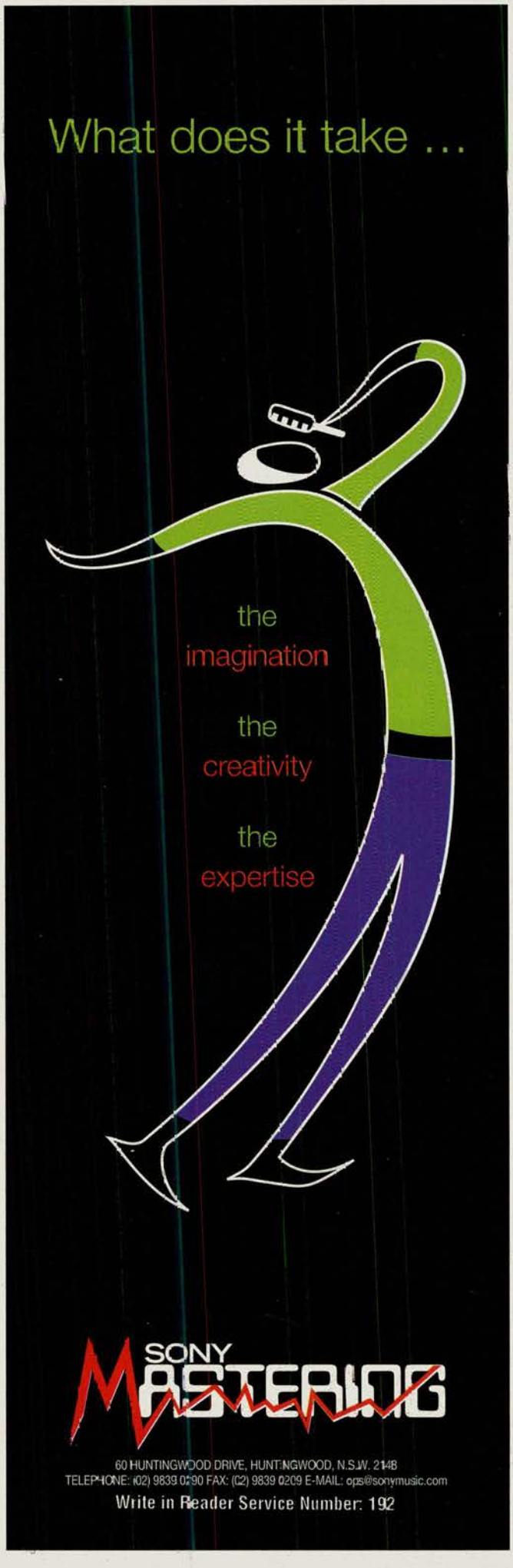
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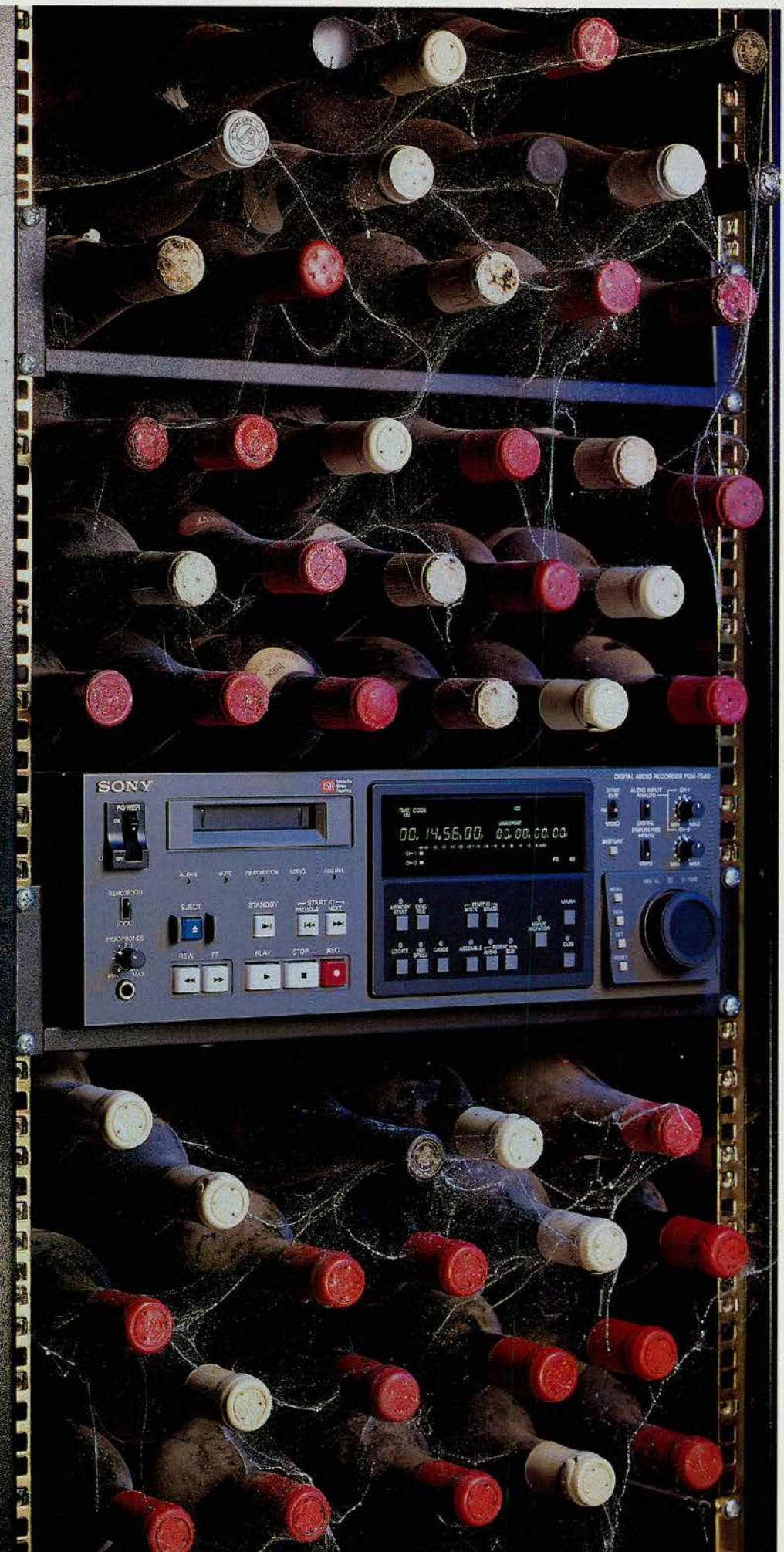
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PULL OUT ENTECH VISITORS GUIDE IN THE MIDDLE OF THIS BUMPER ISSUE - 152 pages total.



The best vintage in the rack



The PCM-7040 Digital Auto Recorder continues the tradition established by the benchmark 7030 Series - the choice of over 7,000 broadcast, post-production and recording studios worldwide.

And what makes the PCM-7040 even better than its highly respected ancestors?

In addition to technological enhancements you'd expect comes a significant bonus - greater affordability than ever, thanks to the use of specially developed LSI technology.

The result is a broadcast quality DAT recorder that is equally at home inthe most demanding edit suite or studio. Highly stable 4 motor Direct Drive transport, time code capability, start ID level sync, memory start function and external sync are just a few of the key reasons.

So is the fact that all functionality is included as standard: there are no extras or optional boards to be added. It's ready to prove its vintage the minute it hits the rack.

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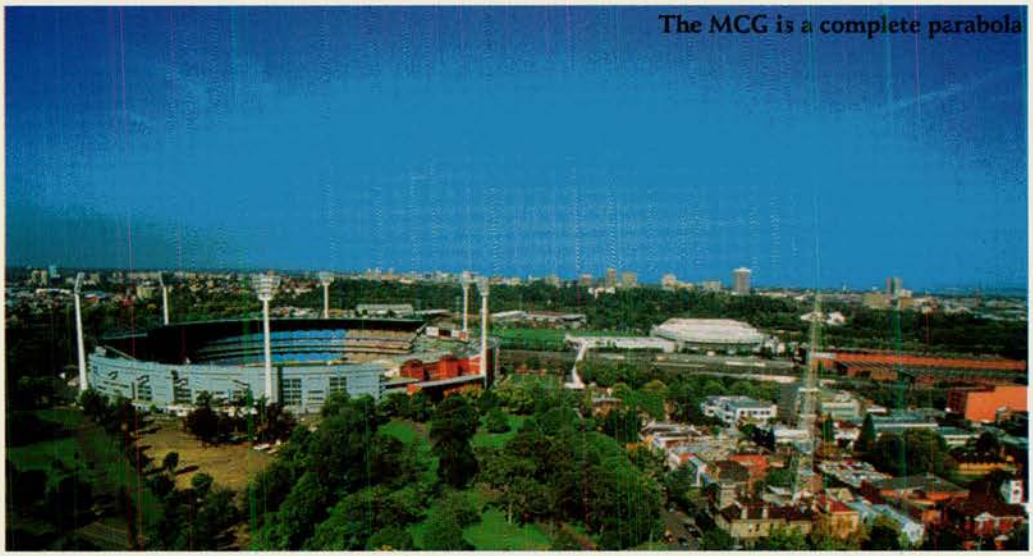
Reliability, right out of the box.

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Connections

APRIL 1997. Number 42

The 3 TENORS



The MCG is a complete parabola

The Sound- what went wrong

The Nine Tenors - Three Men, Six Echoes. ***By Mandy Jones***

The press releases promised "state of the art audio technology to ensure that the highest quality sound is enjoyed by every member of the audience", but that was not what the media reported following the two and half hour Three Tenors Concert at the Melbourne Cricket Ground on March 1st. Instead, headlines about the sound at the concert have slammed the production and criticised the technology.

On the receiving end of the criticism is Ian Richardson, Managing Director of Audio and Recording Australia, who supplied the audio system for the elaborate concert. Richardson explained the difficulties experienced at the MCG.

"The system we supplied was exactly the same system used in all the other overseas Three Tenors Concerts, right down to the mic splitters and the multicore. The only different factor was the venue."

Richardson described the back half of the MCG as a complete parabola, which if it was lit, would create a focal point. The sound from the Tenors and the orchestra hit the back wall creating a focal point and the much publicised echo. Ironically, because of the quality of the system, the echo was extremely clear rather than being muffled, creating a clear echo at the volume of the direct sound, he said. "The section behind the console which experienced the echo was at the very most 500 people, which if you look at as cold hard statistics is only 1% of the 50,000

(continued over page)

Equipment not at fault

Audio design was the problem, writes **Julius Grafton.** Even with delay zones, the MCG offers a classic audio trap. To properly execute a show like the 3 Tenors the only solution would be multiple delay zones with the final delay ring comprising high Q (very directional) speakers slung from beneath the grandstand roof. This highly expensive option would have worked. As it was the promoter was aware of the extent of the problems at the soundcheck the previous night. Which is not good enough at an event grossing around $22 million in ticket sales. •

Technical Training- New approaches flagged for summit

By Dan Cole

There is a general view that Australian industry has been inefficient- provoking a look at how work is achieved and how work is designed. The entertainment industry, although working to daily deadlines has been slow in realising that a change has to occur.

The challenge is how to make work practices more efficient and to make these practices accord with established and new standards.

A broad cross section of the performance and entertainment industry will gather to learn of trends and exchange issues at an inaugural Training Issues Conference this month in Melbourne.

'I think too many organisations jump at training as a solution when it is usually some other problem which is the issue' says Vlad Krajsic, an industry training specialist.

'When a person is 'not delivering' the frequent assumption is that they don't know how to do the task, so- send them off for training. Very few managers address the other issues private life or the workplace which may cause them not to deliver.

Krajsic is currently under contract to the Sydney Opera House, and is a speaker at the Conference, to be held Tuesday April 22nd at the Melbourne Exhibition Centre, the day prior to ENTECH.

'If the environment is not conducive to delivery of skills

(continued over page)

9 Tenors

(continued from previous page)

audience members."

"What we accomplished was 99% satisfaction for an event with the highest ticket price ever staged in this country."

The audio company have become a convenient target for those unhappy with the concert.

"It's not as if we had feedback or the PA cut out, or the sound was distorted or unclear. If that was the case then criticism would be justified, but not for an echo which is a problem with that particular venue."

The General Manager of the MCG, Dr John Lill said that the sound was much better than he had ever expected or heard in the MCG before, as did ushers working on the night of the concert.

Richardson said with events like this, the sound is always in the hands of the promoters. The echo effect could have been avoided by reducing the capacity of the venue and not selling the section of seats behind the console.

"The Myer Music Bowl would have been perfect but it only holds 20,000 people. Otherwise there are ideal venues in Sydney for events of this type, but Jeff Kennett wanted it in Melbourne and the MCG was the only venue big enough."

Richardson sympathises with the audience members who experienced the echo, but he believes they were not only let down by the sound.

"Those people paid $500 for their seats, and from there the three tenors were these 4 centimetre high black and white things in the distance."

There were also complaints about the huge video screens used. The $2 million screens were flown in specially for the concert but caused confusion due to the vision being out of synchronisation with the sound.

Richardson said that contrary to media reports, the majority of those in attendance experienced excellent sound quality for an event of that type.

Brisbane gets an AES

The Audio Engineering Society has established a Brisbane Chapter. It is headed by **Greg Jenkins,** contact c/o:

Electronic Recording Labs, 100 Roma street, 5th floor, Brisbane QLD 4000. Call (07) 3364-6510, fax (07) 3364-4042, email to: gjenkins@brisbane.dialix.oz.au

Other nearby AES chapters-
NSW: (02)9948-4577,
MELB: (03) 9887-3765
ADELAIDE: (08) 8348-4267
SINGAPORE: +65 329-7426

TECHNICAL TRAINING

(continued from previous page)

then training is not the solution — you have to provide an environment which supports and encourages the use of the new skill so people can deliver on skills'.

'So, before they are sent off for re-skilling let's be sure that the person has or doesn't have the skill before we start training them.'

This is an issue which operates at both a systemic and 'procedural' level; the environment where skills are implemented, and the employee and their skills base. One of the current goals in industry is to clarify this relationship whilst introducing new concepts such as multi-skilling and competency assessments.

So what is all the fuss about? When a production or company hires a venue they are not only buying the venue and equipment but also the labour — skills, which must be current and well executed The restructure of any industry brings with it the assessment of labour: how to best deploy existing skill 'sets'? Where to improve and re-skill? What models or standards of should be employed?

Essentially Mr Krajsic has drafted a series of 'certificates' or courses relating to technical theatre which, taken end-to-end, are a complete course in technical production.

'This program is about building knowledge and skills across the broad spectrum of theatre.'

TRAINING FOR ALL

Theatre is not the sole problem area for multiskilling technicians. Production companies, increasingly in the corporate theatre market, are desperate for crew who can work with graphics projection. Even allowing for the ability to handle different interfaces and resolutions, the ability to converge and align a video projector is not commonly taught in Australia.

A traditional industry training ground was the road tour in the 1980's, a diminished market these days.

The challenge now is to implement proper training programmes which move beyond the previous aim of satisfying the now defunct training levy.

• Training Conference, Tues April 22, all day, $175. Call 1-800-635-514.
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EVI Audio is the new name for Mark IV Audio, announced last month and seen here atop the EVI Audio stand at Music Messe in Frankfurt.

DVD conference

Known *either* as Digital Video Disk *or* Digital Versatile Disk, DVD is the new format CD replacement, currently being rolled out worldwide. And not without a fair measure of controversy and confusion to boot.

Movie length software releases are available in Japan and the USA, with local replication capability being installed at Southern Star Duplitech.

While the final audio spec hadn't been announced at presstime, the movie version of the CD sized media will deliver AC-3 surround sound and store movies up to several hours running time

DVD players are on sale overseas, they will also play existing CD's. Once the audio spec is formalised the record labels face the dilemma of what to put on a disk which can hold more than 7 hours of stereo audio.

Anyone involved in audio production and interactive multimedia needs to be up to speed on DVD, and to get there a conference is to be held on Tuesday April 22nd at the Melbourne Exhibition Centre.

• **DVD Technology - 1 day conference** ($175), bookings or brochure: call 1-800-635-514

Melbourne prepares for ENTECH '97

Organisers claim ENTECH 1997 (Melbourne Exhibition Centre, April 23 > 25) is the largest event of its kind in the Southern Hemisphere. Primarily a large trade show, ENTECH has over 100 exhibitors who display Entertainment Technology products, with over 4,300 visitors to the last ENTECH.

The exhibits will range from smaller booth displays of several products through to virtual world displays created on large spaces with leading edge technologies from the worlds leading manufacturers. The 'entertainment technology' tag covers pro audio, lighting, staging and audio visual for performance, broadcast, contracting, installation and studio markets.

Entertainment technology was recently recogised by the UK government as an industry sector, with the leading UK trade event 'PLASA' marked as the fastest growing event of its kind. In Australia ENTECH mirrors this growth, starting as a bi-annual event in 1994 then going annual last April. This year's show includes the VMA (Venue Management Association) trade show run alongside as a once-only synergy, allowing venue managers and technical people to interact. Both trade shows feature a large support program.

24 seminars are on offer at ENTECH, with topics like 'Project Studio Acoustics'; 'PA design and implementation' and 'Themed environments'. Each seminar costs $12.

The ENTECH Awards dinner is the highlight of the ENTECH nights, at the PLAZA Ballroom on Thursday April 24th. This is when leading products and people are recognised for technical brilliance. A dinner ticket costs $69, which includes three courses and a welcome drink.

For the majority of people, ENTECH represents a free experience because entry to the trade show exhibits costs nothing. Included in this are hourly product clinics, where manufacturers and experts detail a product or technology on the trade show floor. There is also a moving light comparison running all day, and at the end of each day a PA system comparison called 'Crescendo'. This features leading brands from around the world.

***ENTECH- Wednesday April 23 to Friday April 25 (ANZAC Day).** Call 1-800-635-514 for a free program to either ENTECH or the VMA.

ENTECH AIR TICKET SALE

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4 nights hotel with air from **$675** ex Perth*

Return airfare with 4 nights accommodation, extra nights and different accommodation options available

* You must stay Saturday night April 25th. Seats and rooms are limited. Cancellation penalties & conditions apply.

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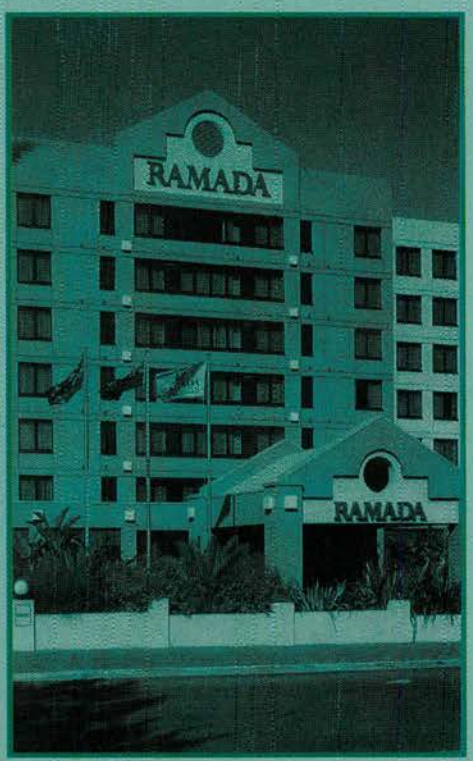
EASY SOLUTIONS

The Concept

Ramada Hotel at Parramatta needed to improve its audio system in the function areas. The five rooms are used for individual meetings or larger functions when joined together. A central foyer area is also used. Hotel function areas need to be flexible, catering to meetings by day and weddings by night. Quick change and versatile design are essential. The old style 'evacuation system' PA was not acequate, improved audio would assist the saleability of the function rooms.

The Problem

With five rooms and the foyer area, the customer really needed a room combining system with smart programmable control. Wall switches would activate different preset programs on a 'smart' controller, which would activate other components like preamps and amplifiers using control protocols. But the budget wasn't sufficient! Quality audio for background music and public address was required, but the control needed to be designed without a 'smart' control system! Which was almost impossible.



About the FreeSpace Business Music System

The FreeSpace 6 system comes with control electronics, and four small full range speakers. Up to 12 additional speakers can be run from one control unit using an expansion module. Input selection and volume can be controlled from a remote wall panel. Wiring to the remote panel is twisted pair, the volume control is handled by an internal VCA in the control electronics.
A smaller system - the FreeSpace One system is also available.



The Solution

Bose dealer Trevan Johns & Associates looked at the job and talked with the client. Examining the typical uses of the five rooms, it was decided that a viable system could in fact be designed using separate Bose FreeSpace Business Music Systems, combined when neccessary. FreeSpace 6 utilises a clever system electronics box with amplifier, mixer and system source switching all integrated. Remote control of volume and source switching is what made FreeSpace viable for this job. The system electronics unit for each room could be switched to one source if required, with the rooms cascading from the first. Although not quite as versatile as a 'smart' system, the design would function to the customers satisfaction, with wall switches providing transparent room combining.

The Result

Trevan Johns & Associates placed all the system electronics together in a control 'cupboard'. Remote microphone connections and volume controls were placed in each room. In the control cupboard are switches to separate or combine the three Marsden and two Anderson rooms or to run separately. Microphone gain control is preset with acoustic conditions in the rooms taken into account. It is also possible to link all the rooms together and to run background music direct to the foyer - 'wedding' mode. The speakers are extremely unobtrusive - FreeSpace 6 comes with either flush mount or surface mount compact speakers. Each FreeSpace 6 control unit can handle up to 16 speakers.

BOSE®

crown

Distributed locally by Bose Australia 1 Sorrell Street Parramatta, NSW 2150 Tel: (02) 9204 6111 Fax: (02) 9204 6122

Shopkeeping

● Due to blatant confusion, last months replication issue listed an incorrect phone number for **Paul Bryant Mastering**. Please note the correct number: (02) 9748 0222.

● More confusion: **Cadillac Cases** inform us that cadillac has two 'ls' (!) and that there new phone number is 02 9740 7055, not the number published. The usually diligent Connections news desk apologies for the slip and the guy who compiles the news has been fired.

● **Charing Cross** recording studios have been absent of late from the BASF Tracking Guide but they're back !

New Little People

● **Dave and Susan Croxton** from Australian Audio Supplies have a third addition to their clan: Welcome, Tessa Anne Croxton, at 7lbs 4oz .

● **Con and Claudia Biviano** welcomed their first born last month. Emily Jane Biviano came in at a perfect 3190kg. All happy healthy and very delighted!

New Appointments

● **David Green** joins Syntec International as Sales Manager responsible for professional products. David was formally international sales manager for Solid State Logic (SSL). His previous experience also includes National Sales Manager in the UK for the Roland Corporation.

● **Herkes Professional Lighting** are proud to announce that **James Williams** has joined the company to service the cable/connectors market and supplies to gaffers that was run by Georgie Petridis who is on an extended overseas break.

Moved

● **Skypak Lighting & Production Services** have moved to: 20 Austin St, Newstead QLD 4006. The phone is the same: 07 3852 2757

● Due to growth throughout the company over the past few years **Magna Systems & Engineering** have moved to larger premises. Their new address: Unit 2/28 Smith St. Chatswood, NSW 20647. Phone : 02 94171111, Fax: 02 94172394.

● **Image Audio Productions** has moved into new premises at Unit 8/35 Tradelink Road, Browns Plains QLD 4118. They inform us that they have expanded their rental inventory and their business theatre and corporate work has increased. Image Audio Productions are now involved in drive-away hire, concert tours and have a trade sales section. Contact Benjamin Page 07 3800 7742.

New Equipment

● **Channel 7** have been spending big for its Sydney on-air graphics department. They have

(go to page 13)

World Weather trend, **APRIL**

*NOT a forecast!

Where?	Temp °C	Rain mm			
Auckland	19/13	97	Manila	34/23	32
Bangkok	35/25	89	New York	15/6	89
Beijing	20/7	17	Paris	16/6	42
Chicago	14/5	77	Perth	24/14	52
Dubai	30/18	5	Rome	19/10	51
Frankfurt	16/6	44	San Francisco	18/8	33
HoChiMinhCity	35/25	42	Seoul	17/5	68
Hong Kong	25/20	139	Shanghai	19/10	91
Jakarta	31/24	147	Singapore	31/24	196
Kuala Lumpur	33/23	279	Sydney	22/14	135
London	13/6	37	Taipei	25/17	182
Los Angeles	19/11	28	Tokyo	17/8	135
			Toronto	12/3	66

MIPRO

Innovative Wireless Mic Technology

MIPRO true diversity VHF wireless microphone systems are designed using the latest in surface mount technology and miniaturised RF components to ensure maximum reliability and performance. Operating with either a hand held or lavalier transmitter, the MIPRO system provides clear, interference free recovered audio. Hand held mics feature a revolutionary head structure which virtually eliminates handling noise. By using a rubber web insert suspension system and a steel mesh capsule support, this ensures minimal vibration transmission to the mic insert. The patented mic grills can sustain a vertical drop from one metre without sustaining damage.



Features:

- True Diversity Operation
- Seven VHF frequencies available in 200MHz band
- Single frequency and twin frequency receivers
- Hand held or lavalier transmitters
- Tone squelch circuit for reliable no-signal muting
- Front mounted volume control
- Unbalanced 6.35mm and balanced 3-pin XLR outputs
- LED indicators for diversity channel, RF and AF levels
- Removable telescopic BNC antennae
- Conforms to 19" rack specifications (bolt-on rack ears)
- Includes AC plugpack adaptor and 6.35mm audio lead

The MIPRO "Wireless Megaphone" is a portable public address system featuring a VHF wireless mic receiver and 20W RMS internal amplifier. Powered by an internal 12V Sealed Lead Acid battery, the unit can provide up to 8 hours use on each full charge.



Features:

- 20W RMS amplifier and 125mm speaker
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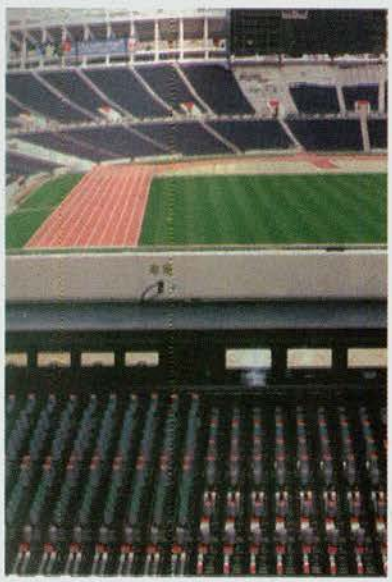


Century LM on tour

Here's the best part

CREST CONSOLES CENTURY SERIES

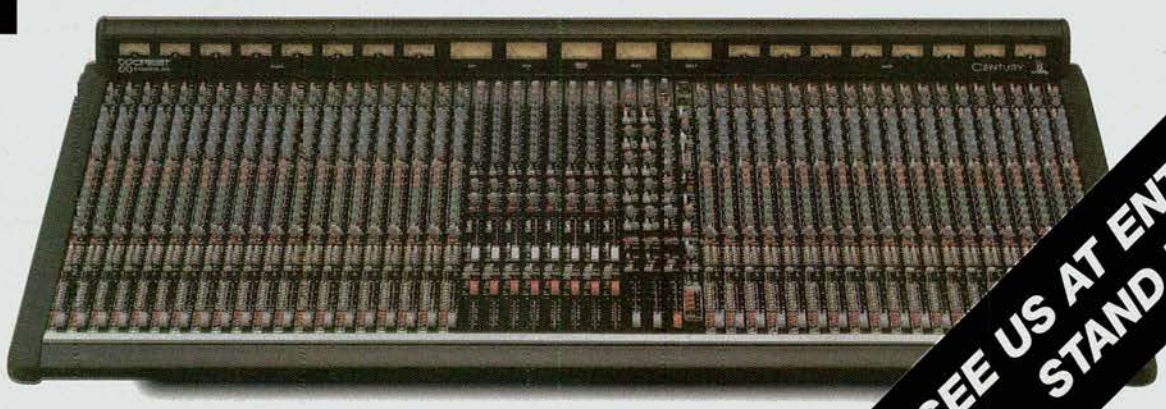
Our Century Series consoles are built to exacting standards from top quality components. They're also a talented bunch. They have to be, whether mixing sound for the world's greatest athletes at Atlanta's Olympic Stadium, on Broadway with the award winning musical "Rent", on TV's "Rosie O'Donnell Show" or on tour with country sensations Brooks & Dunn. And now here in Australia with Broadcast Rentals of Melbourne who used their desk for Star TV's telecast of Wimbledon 1996. So, if you want your system performance to reach olympian standards, call us.



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SEE US AT ENTECH STAND P8

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Write in Reader Service Number: 122

Retailers Conference

Unlike many industries the professional audio, music and lighting retailer has little support and is often left feeling very alone. Basic retail issues like shop lease information, unfair dismissal laws, sales tax obligations and techniques in selling are only available by joining a good industry association.

ENTECH

The RETAIL CONFERENCE during ENTECH seeks draw out major issues and help retailers and their management with up-to-date information.

Keynote speaker is controversial music industry analyst Phil Tripp, who once managed Palings in Sydney and owned an audio production firm in Atlanta. Tripp will detail the tricks of selling, along with a myriad of techniques.

Beforehand various industry speakers will deal with topics like 'Sales Tax- a hidden asset'; 'Store Security'; 'Business Risks'; and obvious sessions on marketing and advertising, networking, the internet and how it affects retailers in the future, and more.

The chair is Julius Grafton, editor of Connections, who operated successful audio and lighting retail outlets for almost 20 years.

Timed to complement the trade show, the conference starts at 9.30am on day one of exhibits; Wednesday April 23rd, and is completed at 3pm with three hours left to browse the exhibits. The cost is $63 which includes lunch.

• **Bookings-** call 1-800-635-514 or book at the show.

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Kilometres of equipment

Frankfurt: ground central for trade show fans

The largest tradeshow for our industry is in Frankfurt, called Musikmesse. It occupies 110,000 square metres, making it 11 times larger than the last ENTECH. 40,000 of these metres are pro audio and lighting, neatly divided into four equal sized halls.

The event occupies about one half of an exhibition complex close to the main railway station in Frankfurt, which is not a city one would normally visit on holiday. Hoards of displaced and very grey people occupy the streets.

Owned by the city, the trade show grosses around $18,500,000 at my estimate - and that is before an array of nasty extra charges are piled onto the hapless exhibitors. Of which there are over 1,300.

Some towns get you with the surcharges. This is one. It costs $200 to rent a TV monitor and another $100 to get Fritz to plug it in. All up I figure the Musikmesse costs its constituent exhibitors better than $90 million. For this they get a staggering 60,000 visitors, although most of these are public who pay to tramp around on the weekend. They pour another $2,000,000 into the trade show till. The exhibitors are then trampled underfoot.

For your outlay as an exhibitor you get Europe, and an organised exhibitor can do a lot of business. One such efficient case in hand was the ARX display, where the Park brothers tag teamed with back to back meetings in a little room at the rear of the stand. Each hour a different nationality distributor would arrive, get the greeting and sit to talk business.

The press room is a work of art, with trendy furniture, chillout zone, and *free beer.* Naturally it is full of advertising reps, typically British and usually like East end barrow boys in nature, who defy the chilling tuetonic interrogation when you first arrive and flaunt the rules. Which are that to get a 'PRESS' pass you are a journalist, not a rep. Anything for free beer.

Armed with the PRESS pass the advertising reps cruise the stands interrupting the flow of business by badgering the overworked audio distributors with 'special deals' like: "buy a advert and then we'll do a favourable product review in the same issue". Does this *really* happen?

-Julius Grafton

MUSIC SHOW SHIFTS DATES

No sooner had last issue gone to press last month than we recieved a copy of the Australian Music Association's Music Trades News publication. It noted that AIMS '97 (the Australian International Music Show) dates have been moved forward to September this year.

In addition, an extra public day has been added, stepping the show up to a four day event. To move was made to align AIMS with several other events, and to move the show away from the October long weekend.

Now AIMS will happen at the same time as the Pacific Circle Music Convention, AMRA Convention, and the 1997 ARIA awards.

The new dates are - September 19, 20, 21 and 22, at the Sydney Exhibition Centre in Darling Harbour.

• **For info call the AMA on (03) 9867-4222.**

Kosmic makes Indonesian move

PERTH based technology outlet KOSMIC are opening an office in Jakarta, which is just 3.5 hours by air from Perth.

According to owner John Goldsmith *(pictured at right)* the move comes from outstanding the success the firm has had selling the products of DSP, the Sydney based manufacturers of Postation and other high-end audio editing equipment.

Kosmic have obtained rights to distribute DSP products in Indonesia and other key Asian territories, and will now seek allied lines to bolster its thrust into the lucrative region. The operation is called Kos-Pro International, and is to be headed up by Kosmic veteran Rob Scott.

Kosmic are a multifaceted business comprising a system design and project installation arm which outfits an array of customers from broadcasters to nightclubs and venues.

Kosmic also operates a long established musical equipment and pro audio retail outlet.

According to Goldsmith business has grown by 60% in the past 12 months, although he was guarded as to turnover, there are 19 staff employed.

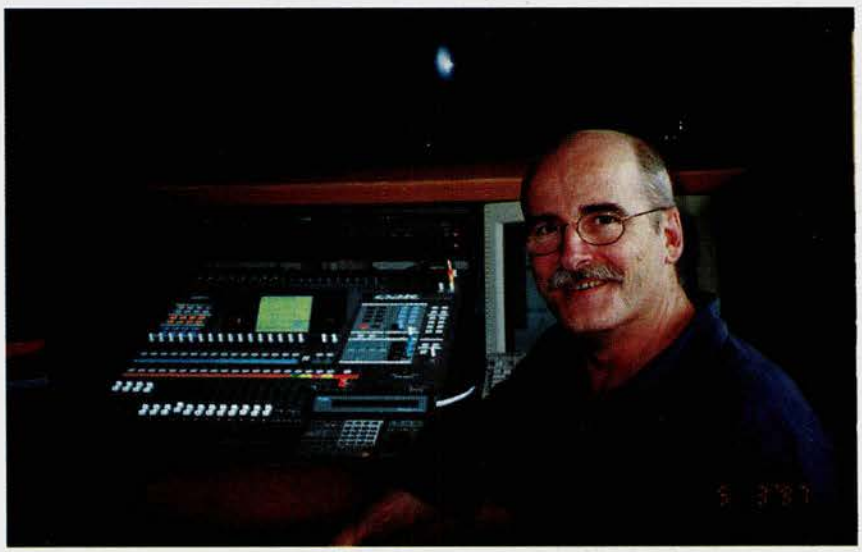
• **Rick Brown** has jopined Kosmic, ex Burswood.



Phil Judd is.... The Digital Ear

Profile: Phil Judd of Philmsound
by Madeleine Murray

No dark, subterranean room, full of machines, bad furniture, and bad coffee here. Phil Judd works in a room of minimal gear, views of eucalypts and kookaburras, and perfectly pitched black Italian lights. The edges of his work desk are padded all the way around, so you can comfortably lean against it, while you listen to that phrase very carefully, one more time.



Judd has established Philmsound in an upstairs area of the meandering Film Australia building in Lindfield, where the gum trees are gigantic, as they should be. Digital has made it possible for Judd to set up his own facility. In his room, he can design and edit sound, do film premixes, and TV mixes. He has separate rooms and facilities for effects editing, dialogue editing, and foley. "Digital has made it economically viable," Judd says. "We've expanded so much over the last decade, shown by the proliferation of equipment magazines alone. You have a choice of 70 different consoles, 70 different recording systems, 100's of bits of outboard gear. Before, there were no choices, a limited market, and therefore very expensive. To set up a mixing theatre was several hundred thousand dollars, if not millions.

"The new technologies have made it reachable. You can afford to get into it. There are tools available that will do the professional job better than you used to do it ten years ago, at a fraction of the cost."

The rules have changed dramatically, because much of the gear now is software driven. Judd has the rough equivalent of about three 2m racks in his computer system. He currently uses Pro Tools 3, and is about to get Pro Tools 4. "I've got a 40 channel fully automated console sitting in a little package here," Judd says, pointing to his computer. "I can do 40 tracks of fully automated mixing with the console, and the Tascam DA88s (MDM's - Modular Digital Multitrack recorders). Pro Tools is a 68 channels mixing system in itself. So if I combine the two, I've got 100 channels of automation. There's not a mixing theatre in this country that can offer me that."

Judd is a techno-junkie. He

(continued on page 42)

MAJOR TRADE SHOWS

- **NAB '97:** April 7 - 10, Las Vagas. Call +1 202-775-4988.
- **NSCA 1997:** April 16 - 20. New Charlotte Conv. Centre, USA.
- **ENTECH '97:** Melbourne Exhibition Centre, April 23 - 25, 1997. The entertainment technology trade show and convention–
  ENTECH Conference: DVD and Pro Audio – April 22nd.
  ENTECH Conference: Industry Technical Training– April 22nd
  ENTECH Conference: Hi-Tech Retail & Issues – April 23rd.
  THE ENTECH AWARDS: Plaza Ballroom, April 24th.
  ENTECH is held annually, appearing in Sydney in 1998. Promoted by Connections Magazine, call +61 (0) 2 9876-3530.
- **Venue Management Association Conference.** Melbourne Exhibition Centre, April 23 - 25, 1997. Call (02) 9876-3530 for details.
- **SHOWLIGHT '97,** Ghent, April 28 - 30. Call +44 1 323 642-639.
- **PALM CHINA '96,** 25 - 28 May, Beijing. Call +65 227-0688.
- **REPLItech** Int, 3-5 June, San Jose, USA. Fax +1 914-328-2020
- **INFOCOMM,** June 5 - 7, LA Convention Centre. +1 703 273-7200
- **NIGHTWAVE '97.** June 7 - 10, Rimini, Italy. +39 541 711-249.
- **SMPTE,** Sydney Exhibition Centre. July 1 - 4. Call (02) 9977-0888
- **PALA '97.** July 14-16, Singapore WTC. +65 227-0688
- **PLASA 1997.** Sept 7-10th, London. Call +44 323 410-335
- **AIMS '97.** Aust Int Music Show.
  NOTE NEW DATES Sept. 19-22. Ph (03) 9867-4222
- **AES 103rd.** Sept 26-29, New York. Fax +1 212 682-0477.
- **LDI 97** October 24-26, Las Vegas. Ph.+1 212 229-2965
- **REPLItech** Asia, *new dates:* H K, Nov 5-7 Fax +1 914-328-2020
- **Vision & Audio 97,** Nov. 4-6, Earls Court, London.
- **ENTECH 1998,** April 23-25, Sydney. Fax + 61 2 9876-5715
- **AES 104th,** May 16-19, 1998. Amsterdam. Fax +1 212 682-0477.
- **AES 105th,** Sept 26-29, 1998. San Francisco. Fax +1 212 682-0477.



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ENTECH Melbourne: April 23 - 25.

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Industry News

New Equipment (cont)

acquired a range of Quantel graphics and animations systems including 3x twin and 3xsingle pictureboxes, a second Hal with spatial dynamics and Paintbox.

● **Intercity Gearhouse** has taken delivery of a shipment of new Barco Data 9100LCs. The projectors have a light output of 3000 ANSI lumens.

● **Amber Technology** inform us that The Metro Nightclub in Melbourne has taken delivery of an Electrohome Showstar LCD Projector for videoclip playout and it's bright! Lights Audio Visual Australia LAVA delivered and installed the unit.

● **A+K Australasia** have supplied a Baessgen AV control system and PC software for the musical Sweet Charity. The production uses 4 Kodak Ektapro projectors linked into the Baessgen system.

● **Total Concept Productions** inform us they have recently added new equipment to their hire inventory: 12x Coemar TM1200 NATS, 12x Clay Paky Combicolour 300s, Jands Hog 600 desk, 2x New Laser Systems, 10 x EV P120s and Crown amps. Contact them T 02 9648 3444.

● **Entertainment Installations** also have added to their hire department including: JEM Show Fogger, Martin Destroyers, Martin 2510 replay controller, 2xMach X1500 15"+horn speakers, another Denon 2000F Mk2 dual CD player. Call (043) 243-873.

● **CPC Audio** in Ipswich have expanded their hire inventory with the addition of both EV and Vega wireless systems, now offering up to 26 channels of EV2500 series VHF system. They have also added four Vega U2020 UHF wireless systems.

Crew Netsite

Power Crewing WA/SA has a new home page-
www.powercrew.net.au

Traveller

By Julius Grafton

You may recall a grouch in these pages about being stuck onboard a Malaysia Airlines plane for an hour after arrival at KL airport. That gate fiasco is nothing compared to what happened last month!

The Straits Times reports a saga where writer Sandi Tan spent *three days* in transit on MAS from LA to KL. Delayed by fog in Taipai, the flight left LA 15 hours late. Then just before landing after a 12 hour flight it diverted to Okinawa, again due to fog. There it sat on the ground for 18 hours after arriving after 10pm.

What is almost beyond belief is that the economy class passengers remained onboard all night and were allowed out in batches to smoke in the lounge. The remaining crew explained that as the flight arrived after the airport closed, nothing could be done. They ran out of water. People started hoarding toilet paper.

After 15 hours the passengers were allowed 2 hours in a hotel for a shower and a feed. Then the flight resumed.

Malaysia Airlines told Connections the crew had no alternative, Okinawa had few spare hotel rooms and that virtually all eateries were closed at 7.30pm. The captain apparently wished to divert elsewhere but was forced by air traffic considerations and fuel to land at Okinawa.

Affected passengers were asked to contact the airline for 'further assistance' - only once this story blew up in the press.

• *A similar incident* which involved an un-named Asian airline happened some years ago. In that case the flight to Sydney ran late and diverted to Melbourne once Sydney closed for the night. There the aircraft sat on the tarmac for six hours with all on board.



ENTECH
1997 SHOW PREVIEW

If it's April it must be showtime, for ENTECH is on at the new Melbourne Exhibition Centre, from Wednesday April 23rd, ending on Friday April 25th, the ANZAC Day public holiday. Combining the largest tradeshow for the entertainment technology industry south of the equator, ENTECH also has a large support programme of Seminars, Conferences and Social events. A full programme is in the middle of this issue.

The complete Exhibitor roll call is on page 24

CROWN to debut new amps

At Entech this year **BOSE** will debut Crown's new **K2 Balanced Current Amplifier**, a 2500w 2U high unit designed to deliver high power using less energy and less heat. Crown say that the K2 generates an estimated one-tenth the heat of conventional amplifiers in its class by utilising proprietary Balanced Current Amplifier (BCA™) circuitry. Maximum power delivery can be 1250watts per channel into 2 ohms for extended durations.

The K2's lower operating temperatures puts less stress on components; it doesn't have a fan and the chassis is sealed against environmental conditions, dust and humidity. The single piece front panel increases chassis strength and the K2 is shipped with a 3-year full, no-fault warranty. ***Go to Stand D3**

SEE US AT ENTECH '97
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ELECTRIC FACTORY INTRO NEW P.A.

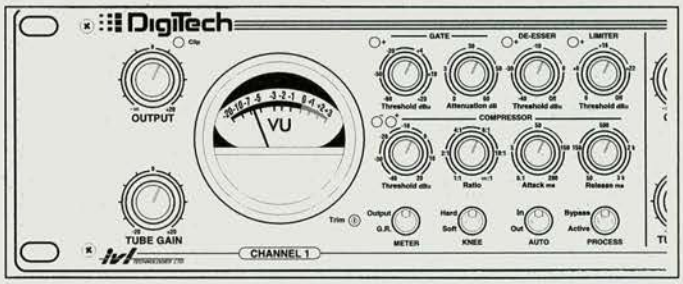
Electric Factory will release a new PA range from UK manufacturer Celestion at ENTECH. The Road Series is a range of speaker systems with cabinets constructed from Polycore, a custom Polyethylene moulded material.

This has multiple benefits over and above the other 90% of PA cabinets on offer, namely- less weight, tougher skin, increased structural and acoustic rigidity, and better impact resistance.

Road Series comes in single 12" and double 15" models, with a dual subwoofer, and Polyswitch overload protection.

Emagic's new digital audio workstation combined hardware software called **Audiowerk 8 & VMR** will be on show. There are two components to the system; a PCI card, compatible with both MacOS and Windows systems, and accompanying software called VMR. Audiowerk 8 & VMR is designed as an entry point, eight channel digital recording package and allows for straightforward audio editing and desktop functions.

***Go to Stand P24**



DIGITECH - NEW TUBES

Central Musical Instruments will debut at Entech '97 the new **Digitech VCS-1**, a dual vacuum-tube dynamics processor with full featured compression, de-essing, noise gating and peak limiting. The VCS-1 *(pictured above)* features two channels of 12AX7A tubes within a 2U rack chassis. The VSC-1 compressor functions include; manual or auto timing, hard or soft knee threshold, sidechain path for frequency-sensitive compressionn. Gating includes a Downward-Expander type with threshold control and adjustable attenuation from 0-60dB; The De-esser mode has a detection corner frequency of 4.5 kHz and broadband frequency-sensitive compressor.

Metering is via illuminated analog VU meters with selectable display of input, output or gain reduction levels.

***Go to Stand U14**

Behringer sign

At presstime the giant German pro audio manufacturer Behringer signed for ENTECH, c/o new local importers Music Link. You can find them on stand S25, near the Clinic area.

Digidesign show PT 4

Digidesign's Pro Tools 4.0 software is new for Entech 1997. Pro Tools digital mixing capabilities have increased with new features such as an improved visual appearance, new automation features, such as send and mute automation, and dynamic automation of most TDM Plug-In perameters. New Pro Tools mixing features also include Touch, Write and Latch Automation modes and a new narrow Mix View which increases the number of accessible mixer tracks on screen.

Show picks

New fader groupings provide for Mix Groups and Edit Groups and new editing tools include: multiple edit playlists per track; the integration of AudioSuite, a new plug-in architecture which provides most of the Sound Designer II file-based processing features; and a new intuitive graphic interface for crossfades with variable custom fade contours including new S-shaped fades.

The capacity to edit during playback is another new feature of Pro Tools 4.0 allowing edit points to be auditioned and adjusted in real-time without stopping playback.

***Go to Stand J13**

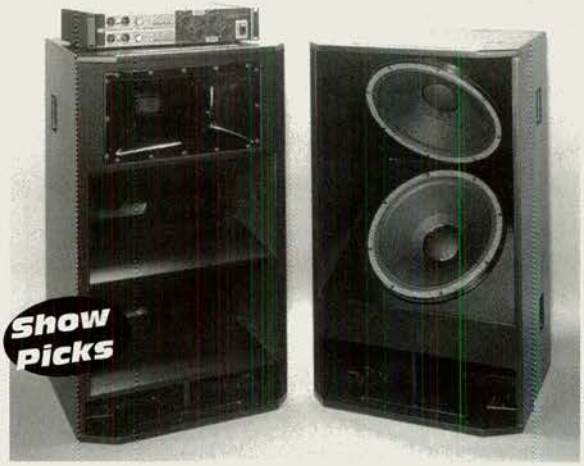
Apogee New at ENTECH

At the Apogee Sound stall will be two additions to the company's AE Series loudspeaker systems.

The new AE-7 is fully horn loaded and is designed for high output , long throw applications, with emphasis on clarity in the vocal range. Fully arrayable, the AE-7's high output capability makes it suitable for arenas, stadiums, and with the addition of a subwoofer, concert sound reinforcement. The AE-7 utilises a 2" high frequency driver and two 10" cone drivers. The AE-7SB features dual 15" low frequency cone drivers.

The AE-7SB subwoofer is designed to fly or stack easily with the AE-7. With its dual 15" woofers, the AE-7SB adds tight, powerful bass response.

Apogee Sound, Inc., founded in 1935, manufacturers advanced processor-based speaker systems, professional power amplifiers, equalisers and state of the art acoustical measurement equipment, utilised in stadium, theatre, broadcast, church and touring applications worldwide. ***Go to Stand R13**



DJ Show Pick Bits

CLUB and DJ AUDIO is well respresented at ENTECH, with stands to visit as follows:

American DJ: stand H18
Australis Music: stand F1
AWA Distribution: stand N3
CMC Music: stand J17
Disco World: stand K3
Elsta: stand F18
Gemini Lytequest Australia: M15
Moore Music: stand F21
Universal Lighting & Audio: A13
Plus **Roland, Yamaha** and most other audio exhibitors have DJ / Club audio products.

Aussie Subs

Abbey Sound have designed two new subwoofers, each on display at Entech: the **ASB12** and **ASB15**, rated at 300w and 120w respectively. The ASB15 subwoofer is loaded with a JBL 15" bass driver and is designed to handle high SPLs (and fit in the back seat of a standard sedan car). New mono amplifiers to run these cabinets will also be on show as will be the **AF12P** Powered Foldback Wedge.

Show picks

***Go to Stand S3**

ENTECH HOURS: Wed April 23,
Thur April 24, Fri (ANZAC DAY) April 25th.
10am - 6pm daily.

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Faster. Setup time is remarkably faster and the associated costs lowered. Amp racks have been eliminated and the need to keep track of matched racks and cable assemblies. The system requires surprisingly less truck space and shipping expenses.

Reliable. The Self-Powered Series holds one of the lowest amp failure rates in the industry. With known load characteristics, the amplifier protection is minimized, simplifying the signal path.

Consistent. Cross-compatibility in rental inventories from various companies is effortless since gain differences and connector incompatibilities are eliminated.

Versatile. With no shared processors, each loudspeaker's levels, frequency response and delay times can be individually manipulated.

"The self-powered speakers mark a new beginning for both Meyer and the live sound industry."

—Mix Magazine, August, 1996

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Write in Reader Service Number: 185



Akai M/O dubber

The Akai DD8 Modular 8-track Magneto/Optical Dubber is new to Entech. A random Access Disk Dubber designed to bring digital methods into the film world, the DD8 is a mageneto/optical based 8-track digital recorder designed specifically for dubbing, designed as a plug-and-play replacement for the DA-88

The DD8 records to and plays from reliable 2.6GB MO disks or removable hard disks, and, to ensure high audio quality employs an uncompressed 16-bit linear data format. The DD3 features precise and rapid locking to timecode/biphase; flexible I/O and remote control options, and no-transfers-required data and media compatibility with Akai's DD1500 Recorder/Editor and the DR16 and DR8 digital multitrack recorders. The DD8 syncs to all known standards, forward and reverse, at any speed.

The DD8 has been designed for Ease-of-Use at the Dubbing Stage providing simultaneous recording of up to 8-tracks. The total recording time is 225 track-minutes, equivalent to 28 minutes/8 track with 2.6GB MO. **• Go to Australis Music, stand F1**



Otari 8 Track

Amber Technology will exhibit the new **Otari PD-80** an 8-channel digital audio disk recorder suitable for video and film post-production, television and radio broadcast production, and commercial advertising production applications.

Based on technology developed from Otari's RADAR system, the standard PD-80 uses a 3.5 inch magneto-optical cartridge disk drive using the new format direct overwrite media. Optional SCSI devices may be added internally or externally for additional storage.

All record, playback and editing functions are performed using the dedicated CB-164 remote controller and are displayed on a track window on a connected SVGA compatible video monitor. Real-time editing facilities include move, copy, cut, erase, slip, delete, gate, split and merge functions, together with dedicated project and library cue manipulation commands.

Off-line DSP processing is provided for time compression/expansion, pitch shift and reverse play modes. The PD-80 is also equipped with a timecode reader/generator and incorporates control of an external VTR transport, providing chase synchronisation to the transport without any additional options. **• Go to stand J10**

Major Music's Millennium

Major Music Wholesale's stand will include LA Audio's budget range of signal processing called the **Millennium Series** consisting of: the MLX2, EQX2, the MPX1 microphone processor and the GCX2.

The MLX2 is a professional dual channel Mic Pre-Amplifier which also accepts Line levels and Direct Instrument connection. The EQX2 is a dual 3 band parametric equaliser which can also be configured as a mono 6-band unit. The MPX1 Microphone Processor is designed for one-step processing of vocal or solo instruments combining a Mic/Line preamplifier with a DI, Noise Reduction, 4-mode Auto Compressor and Equaliser, all in a 1U sized case. Finally, the GCX2 dual Compressor Gate features dual mono or stereo (master slave) gating and compression. **• Go to stand K18**

QSC monster amp

AR Audio will be featuring the QSC Powerlight 8.0PFC, an addition to the Power Light range specified to deliver over 4,000 watts/ch at 2Ω and 8,000 watts bridged mono into 4Ω.

The 8.0PFC is only 3RU in height, 18" deep and weighing under 23kg. Its large power output capacity and compact size has been achieved by re-thinking power supply technology and output circuit design.

Foremost among these is the first incorporation of power factor correction (PFC) in an audio amplifier power supply which lowers peak AC current requirements by up to 40%, reducing the strain on AC distribution a critical issue for mega-watt amplifiers.

The amplifier also features line and load regulation, making the amplifier's peak power capacity insensitive to drops in incoming AC voltage as well as; true soft start, automatic AC overvoltage protection, and a frequency-invariant design that operates on any incoming AC frequency.

The extreme capability of modern MOSFETs allows a 7-to-1 improvement over normal bipolar audio transistors. To further reduce space requirements, surface mount components are used extensively throughout.

The PL8.0 PFC also features all the advantages of the Powerlight Series: data port for amplifier monitoring, flow-through cooling with fully variable-speed fans. Neutrik Combo inputs and a standby mode. The outputs will also feature Neutrik Speakons and special shrouded speaker terminals to handle the unprecedented power. * **Go to stand M17**



ARX to show contractor line

ARX will feature on their stand the AMBIENCE 1 Ultra Conmpact Loudspeaker System suitable for installation, Audio Visual and smaller Multimedia applications.

Constructed from a lightweight high impact resin cabinet with heavy duty protective steel mesh, the Ambience 1's frequency response is 60Hz - 20KHz ± 5dB and power handling is rated at 100 watts program.

The Ambience 1 uses a two way complement of a 51/4" (133mm) low frequency driver and a 3/4" (20mm) high frequency soft dome radiator and features integral 2nd order frequency management.

The Ambience 1 is available in both 8 ohm and 100V versions, with a optional magnetically shielded model available for applications which require close proximity to Video Monitors.

Amvience 1 is the first in a series of cost effective compact loudspeakers for the install and AV markets.

• **Go to stand M10**



PROJECT STUDIO AUDIO

Some stands to visit -
AR Audio M17; Amber J10; Aust. Audio Supplies U24; Australis F1; AWA N3; CMI U14; Digidesign J13; Electric Factory P24; Major Music K18; Moore Music F21; Roland R3; Syncrotech A1; Yamaha M8 - *plus others* selling mic's, monitors and amps!

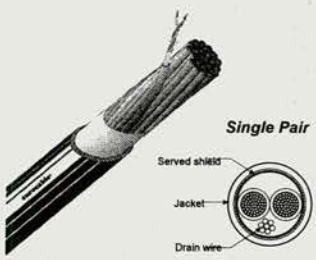
Link

Link Multipin Connectors

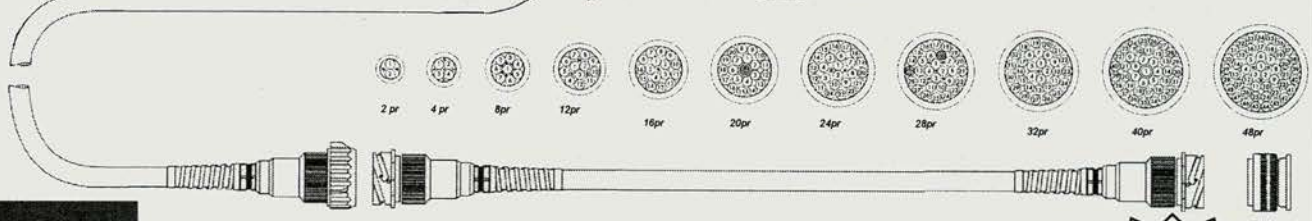


- ☑ Available in versions from 19 pin to 150 pin
- ☑ Easy and positive coupling and uncoupling
- ☑ Audible "snap in" lock indicates full coupling
- ☑ Waterproof to 10 metres for 12 hours
- ☑ Highly resistant black finish
- ☑ Guaranteed for over 2000 applications

eurocable **Multipair Cables**



- ☑ Available in 2 pair to 48 pair
- ☑ Extreme flexibility to -20°c
- ☑ Excellent resistance to damp
- ☑ Numbered *and* colour-coded cores
- ☑ XLPE insulant, high heat resistance
- ☑ Drain wire for screen link-up



trc the resource corp

The Resource Corporation 6 King Street Blackburn VIC 3103
Tel (03) 9877 8233 Fax (03) 9877 8244

see us at ENTECH 97 stand M10

Write in Reader Service Number: 131

Is this your microphone?



CK 77-3 Miniature lapel microphone
Winner of 1995 Austrian Chamber of Commerce Merkur Award

Maybe it's this...



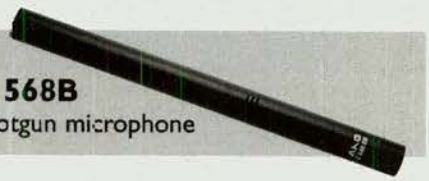
C 391B Studio microphone from modular Blue Line series

C 3000 Studio microphone.
Winner, 1996 ENTECH Award for Technical Brilliance



or this?

Well, how about...



C 568B
Shotgun microphone



WMS 300 Wireless microphone system

...either of these?

D 230 Omni interview microphone





...or any one of over 100 other microphones in our range.

There's an AKG microphone to suit every recording, broadcast or live performance application.

In fact, the only difficult thing about using AKG equipment is deciding which of our many microphones best suits your need.

As our award-winning range includes everything from miniature lapel microphones like the CK 77-3 (shown above) to the C12VR vintage valve microphone, the choices might seem endless.

To help you make your selection, AKG stockists will be happy to supply you with both friendly advice and full range brochures (complete with specifications and handy recording hints).

For the location of your nearest AKG stockist, call 1-800 252 391.

AKG

Brought to you by AWA DISTRIBUTION

THE TARGETED APPROACH AWAP9721

Write in Reader Service Number: 137

INDIGO SERIES CRIMSON

The new Indigo & Crimson Series of effects from TL Audio boasts the same critically acclaimed audio quality as the Classic range, but with an even more affordable price tag - making the unique characteristics of TL Audio available to musicians and project studios for the 1st time.



2001 4 Channel Valve Mic Pre Amp
3001 4 Channel Mic Pre Amp
Continuously variable input & output gain controls, 48v phantom power, 90Hz low cut filter, Phase reverse, Peak LED metering.



2011 2 Channel 4 Band Valve Equaliser
3011 2 Channel 4 Band Equaliser
Variable input gain, two channels x 4 bands equalisation, front panel AUX input, EQ bypass switch, peak LED metering.



2012 2 Channel Parametric Valve EQ
3012 2 Channel Parametric EQ
Variable input gain, 'mono mode' allows mono 4 band operation, divide / multiply by 10 frequency switching, EQ bypass switch, peak LED metering.



2021 2 Channel Valve Compressor
3021 2 Channel Compressor
Fully variable control of input gain, threshold, ratio and gain make up, stereo link facility, 8 segment LED metering, side chain insert point.



2051 Mono Valve Voice Processor
Combines the functions of the 2001, 2011 and 2021 units into a single channel package.

Crimson Series $1299 R.R.P. (All Models)
Indigo Series $1899 R.R.P. (All Models)

TL Audio

Electric Factory A.C.N. 005 127 097
188 Plenty Rd. Preston Vic. 3072 Ph. (03) 9480 5988
Fax. (03) 9484 6708 elfa@ozemail.com.au

SOUNDCRAFT SHOW NEW K2 MIXER

One highlight on the Jands stand will be the new K2 from Soundcraft.

The K2 is an 8-bus multi-purpose sound reinforcement console that uses MIDI technology for scene set automation and provides the same wide-range input pre-amp stage as Soundcraft's K3, Vienna and Europea consoles.

As well, the K2 is well equipped with a sweepable high pass filter, four-band EQ with two swept mids and switchable Q, eight aux sends with external pre/post switching in pairs, LED input metering, a MIDI controlled muting system with eight mute groups, eight sub-groups, eight stereo returns, an 11x9 matrix and built-in VU output meterbridge.

Show Picks

A new frame has been designed to be light and transportable yet robust enough to meet the rigours of touring. The console is available in 24, 32 and 40 channel frame sizes.

• Check Jands, stand F3



Soundcraft K2

Peavey Media Matrix grows

Sydney based but with offices in every state plus New Zealand, Audio Telex have developed new business in the past year with Peavey Architectural Acoustics products. The agency was acquired when Peavey decided to separate their products into two lines, leaving existing Peavey musical and PA products with well established distribution through Australis.

Show Picks

Peavey AA comprises a staggering range of product from small installation speakers through amplifiers, processors and mixers. The star in the range is Media Matrix, a digital audio tool whereby all control surfaces are created on a PC. The patching and processing of audio all occurs within modules hooked up to a host computer, or on smaller Media Matrix stand alone systems. Media Matrix has found favour with an impressive number of consultants and is already installed in some major sites.

• Check Audio Telex, stand J10

Australian Monitor- *10 years on*

Celebrating its 10th year as an Australian exporter, Australian Monitor will debut their newest 'brute' at ENTECH 1997, the AM3002.

When the firm started doing business they sought to build the most robust power amplfier possible, and what was created was the AM 1600.

Show Picks

In the R & D process the issue became 'truth in specification', with an amplifier utilising a 2kVa torroidal transformer the firm toyed with the option of using 'creative' specifications, as some of the manufacturers of the day were. They stuck to established principles and sold the product on its durability.

It is symbolic that since the AM 1600 was born, the market leading manufacturers it competed against have since withdrawn from the Australian market. The firm now exports amplifiers worldwide, and almost every AM 1600 built is still working.

• Check A.M., stand L3



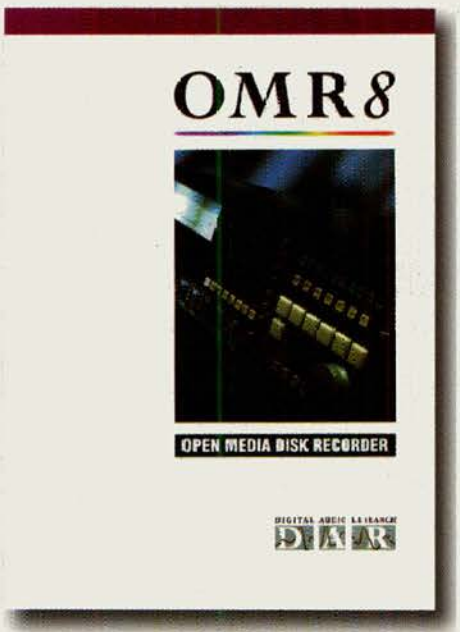
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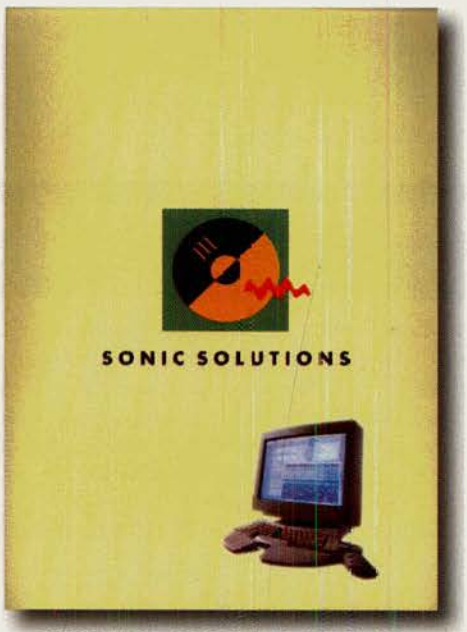
AMS NEVE



KRK



DAR



SONIC SOLUTIONS



SOUNDTRACS



V1 RANDOM ACCESS VIDEO

SYNCROTECH SYSTEMS DESIGN PTY LTD
ACN 002 391 905 (INCORPORATED IN N.S.W.)

9c GIBBES STREET CHATSWOOD 2067 NSW AUSTRALIA PHONE 02.9417.5038 FAX. 02.9417.8360

Meyer intro new self powered models

Meyer Sound Laboratories will introduce three new products in their Self Powered Series at Entech. Introduced for the first time to the Australian pro-audio market will be the **CQ-1, CQ-2 Loudspeakers**, the **PSM-2 Stage Monitor** and the **PSW-2 Subwoofer**.

Developed for optimum performance and quick convenient set-up and operation, Meyer's Self Powered products integrate the amplifier, controller, power supply and cooling subsystems into a lightweight module which is accessible for servicing at the back of the enclosure. Self contained electronics eliminate the need for accessory equipment racks and all products incorporate the Intelligent AC™ System, which performs automatic voltage selection, EMI filtering, soft-current turn-on and surge suppression. Additionally, each is equipped with TruPower™ Limiter technology which maximises speaker protection and component life.

Show Picks

The three models previewed will be the CQ™-1 and CQ-2 Self- Powered Reinforcement Loudspeakers. "CQ" stand for "Constant Q " meaning that acoustic energy is evenly distributed over the coverage pattern; the PSM-2 Self Powered Stage Monitor is a high powered system with a medium Q-horn and phase-corrected frequency response of 50 Hz to 18 Hz; and the PSW-2 Self-Powered Subwoofer, a dual amplified, 4th order, bass-reflex cabinet which is arrayable and flyable with a frequency response of 35 Hz to 120Hz.

• Visit stand P13

Not here?

No, there are around **100 exhibitors.** More are detailed in the LIGHTING pages, all exhibitors at March 1st have editorial in the Guide in the middle of this issue.



Show Picks

Mixers, DAS star for Magna

Magna Systems & Engineering have been importing pro audio products for many years, with the Inter-M brand a re-name for INKEL corporation of Korea. The new PC1635 powered mixer (pictured) is a new PA star for the firm, with 2 x 350w amplifiers, inbuilt digital reverb, dual graphic equalisers and sweep midrange EQ.

Channels 1 - 12 are mono, with 13/14 and 15/16 stereo inputs. Extensive patching makes life easy. A 12 channel version is also available.

DAS speakers are from Europe and increasingly popular with contractors. Check out the new DAS DS-15.

• Go to stand J19

Consoles, amps from Mackie

The **Australian Audio Supplies** stand will feature the lastest releases from Mackie including the **SR40•8** large format mixing console; the **M•1400** Power Amplifier and the (preliminary) **Digital •8** bus console.

Show Picks

The Mackie FR-Series M•1400 Power Amplifier offers built-in Neutrik Speakon connectors and in 4Ω bridged mode delivers 1400w and at a 4Ω load provides 480+480w per side. Some other features include: sweepable low-cut filter, built in switchable low-pass subwoofer crossover, clipping eliminator, built in low-cut filter and subsonic stabiliser and constant-gradient T-design cooling for enhanced reliability. A high powered M•2400 power amplifier is scheduled for a late 1997 release.

The SR40•8 will also be used in the PA Crescendo, it is a 40 input, 4 stereo line input console featuring 8 sub-groups and a large-format centre-style master section.

Other elements are a built in 12x4 matrix mixer providing access to any combination of its subgroups, 8-aux sends, 4-band EQ, aux send master section with Flip Switches. This allows aux sends to be controlled by 8 sub-faders while subs are controlled by aux send knobs.

• Go to stand U24

CREST TOP OFF THEIR RANGE

Crest Audio will release the CA18 power amplifier and is the latest in the 6 model lineup of CA series. The CA18 is capable off 1800W per channel at 4Ω or up to 5000W bridged at 2Ω.

The CA18 occupies the same 3RU chassis as the CA12 made from 16 gauge steel. Like all Crest CA series, the CA18 features front attenuation, TourClass® protection circuitry, XLR inputs, Speakon or binding post outputs and variable speed fans. Input sensitivity is set as standard at 0.775V, however this can be modified to customer requests.

Show Picks

• Visit Production Audio Services on stand P8

MACH

Audiology is the new Australian distributor of the Mach range of speaker systems and will be debuting the range at Entech. Mach is the sister company to Martin Lighting in Denmark.

• Visit stand 021

Audio Range Expanders

Other exhibitors at ENTECH include **Syncrotech Systems Design,** who have added BEYER microphones to their portfolio. They will also debut the Doremi Labs V1 random access video recorder, a hot attraction, and Soundtracs Virtua console.

Show Picks

• Go to stand A1

MOORE MUSIC are new to ENTECH and also have added to their portfolio by acquiring the whole VESTAX range. This includes hard disk recorders, DJ mixers and products. They also handle StudioMaster mixing consoles.

• Go to stand F21

EVI Audio is the new name for Mark IV Audio (Australia). They distribute EV, Midas, Klark Teknik, DDA, Vega and more. This year the firm is on the acquisition trail and were rumoured to have purchased TELEX at presstime.

New products on stand include new EV amplifiers, Vega wireless and EV mic's.

• Go to stand F13

The Spectrum Management Agency will be on stand R25 to answer Wireless frequency questions, and detail EMF 'C Tick' compliance issues.

EASTCOAST AUDIO

See us at ENTECH
Stand J18

APHEX

Aphex Price Deals at these stockists:

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

New South Wales/ACT
Turramurra Music 02 9449 8487. Sound Devices 02 9283 2077.
Brashs 02 9261 2555. The PA People 02 9642 5344.
Better Music 06 282 3199.

South Australia
Future Music 08 8373 0644. Adelaide Rock 08 8212 7933.

Queensland
Australian Academy of Music 07 3831 0283.
Palings 07 3229 2155 MIDI-link 07 3368 3366.

Model 104 Big Bottom™ — $475

Model 105 Logic-Assisted Four Channel Gate — $723

Model 106 Easyrider™ Four-Channel Compressor — $723

Model 107 Dual-Channel Thermionic Microphone Preamplifier — $833

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

Model 109 Parametric Equaliser with Tubessence® — $792

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

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

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

or *fax* 03 9427 9898

Broadcast Technology Pty Ltd
ACN 005 689 752

Write in Reader Service Number: 134

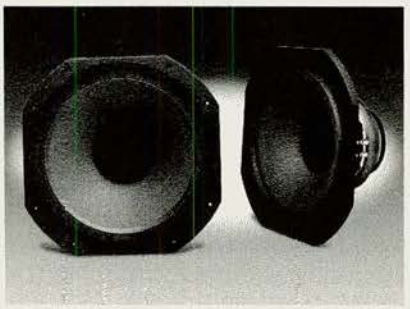
At Last... a REAL 15" CO-AX!

"I love coaxs, but the 1"HF drivers just don't hack it!"

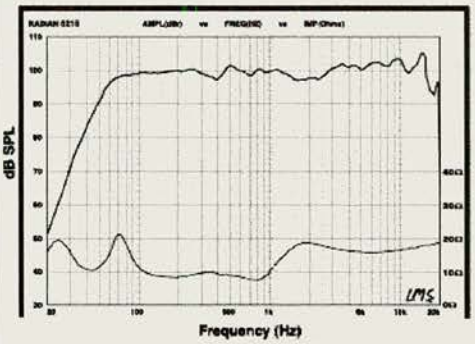
"If only I could get a high power coax for floor monitors and FOH - they sound great! But every one I've tried just doesn't give me the high levels I need AND the reliability".

"Why doesn't someone make a 15" coax with a 2" driver I can use for bands?"

"I need a really small, really loud, 15" monitor wedge"



...with a 2" HF Driver!



If this is what you've been saying then Radian's **NEW 5215 15" (375mm) coax with a TRUE 2" HF driver means** your waiting is over!

Radian took their most popular **100 watt, 2" HF driver** and put it on the back of a **4" voice coil, 400 watt 15" speaker.**

What you get is **great sound, lots of great sound, 124dB of great sound - enough even for heavy metal freaks!**

So don't compromise - ***Get the Power, Get the Savings, Get Radian.***

POWER by RADIAN

ESA Audio
703 Heatherton Road, CLAYTON SOUTH
Ph: (03) 9562 4605 Fax: (03) 9547 6683
Mobile: 015 520 228 - 019 665 829

Write in Reader Service Number: 178

Yamaha's digital trio

The Pro Mix 01 was first of Yamaha's low cost run of digital audio mixers, showing at ENTECH 1994. It was followed by the 02R which was a star at ENTECH last year.

Show Picks

Now Yamaha have continued to roll out cost effective digital mixers with an ENTECH release planned for the new 03D.

As reviewed in last months issue, the 03D fits between the other two machines and sells for $5995. It has 26 inputs and like the others allows snap reset user recall of all settings and multiple dynamics and effects, all within one box.

On the Yamaha stand you'll see a surround sound mixing demo done with the 03D.

Yamaha also plan to show the REV 500 low cost effector, the ProR3, and the MD-4 digital recorder.

Audio-technica microphones will be shown including a new wireless range. Special guest Joel Singer will workshop the Audio-technica range.

• **Yamaha will also host a product Clinic daily at 10.30am near the Cafe.**

More show picks in the Lighting pages

CLINICS

PRODUCT CLINICS ARE FREE, AND ARE HELD HOURLY ON THE TRADE SHOW FLOOR NEAR THE CAFE.

Wed 23rd April
10.30am Mark of the Unicorn (Moore Music)
11.30am Studio/Live microphones (Audio-Technica)
12.30pm ShowCAD show automation (CDA)
1.30pm SMAART/control (JBL)
2.30pm HOT Technology (JEM)
3.30pm MediaMatrix (Audio Telex)
4.30pm Roland audio reality
5.30pm EV/Vega radio microphones

Thursday 24th April
10.30am Mark of the Unicorn (Moore Music)
11.30am Wireless (Audio-Technica)
12.30pm CAD & visualisation for the LD (CDA)
1.30pm In Ear Monitoring (Shure)
2.30pm What is WYSIWYG? (AC Lighting)
3.30pm Symetrix audio processors (Audio Telex)
4.30pm Roland audio reality
5.30pm EV cabled microphones

Fri 25th April
10.30am Mark of the Unicorn (Moore Music)
11.30am Installed sound (Audio-Technica)
12.30pm Goldline: service not boxes! (CDA)
1.30pm Power processing, Nexsus (CREST)
2.30pm CP100- LX controller (Show Technology)
3.30pm Sabine feedback extermination (Audio Telex)
4.30pm Roland audio reality
5.30pm Merlin: audio control (EVI)

Exhibitors make a trade show

The individual efforts of around 100 ENTECH exhibitors will be seen on the floor at the new Melbourne Exhibition Centre this month. Ranging from small booth displays through to large custom made stands, the exhibits include many interactive displays where users can get their hands onto the products.

Over 3,000 individual devices from most of the world's leading manufacturers will be on show.

This year the breakdown between lighting and pro audio is about equal, with the balance of floorspace made up with vision, staging and service providors. The exhibitor mix is demonstrated in the top exhibitors by floor space. They are: Show Technology, Techstream, Universal Lighting & Audio, EVI Audio, Jands, PA People, BOSE, Bytecraft, AWA, Production Audio Services, Osram, LSC, and AR Audio Engineering. In terms of size, the trade show hall is about twice the size of the Tennis Centre or two 747 hangers.

Another 40 or so exhibitors will be on hand in an ajoining hall as part of the Venue Management Association trade show, held at the same time.

Free trade registration gets you into both shows for the whole 3 days, Wednesday April 23 through Friday 25th - Anzac Day. Register on site and enjoy!

Entech 1997 Exhibitor rollcall

A & A AIBA Insurance Brokers	Stand No: M1
A.B.C. TV marketing	Stand No: S24
A.C. Lighting Ltd	Stand No: N21
A.R. Audio Engineering	Stand No: M17
Abbey Sound	Stand No: S3
Acoustic Technologies	Stand No: P1
Active Lighting	Stand No: X13
Alcatel Components Ltd	Stand No: V15
Altronic Distributors	Stand No: I1
Amber Technology	Stand No: J10
American DJ	Stand No: H18
Amps Unlimited - Ampower	Stand No: R5
Apogee Sound Inc.	Stand No: R13
ARX Systems Pty Ltd	Stand No: M10
Audio Telex	Stand No: J8
Audiology Pty Ltd	Stand No: O21
Australian Audio Supplies	Stand No: U24
Australian Monitor P/L	Stand No: L3
Australis Music Group	Stand No: F1
AWA Distribution	Stand No: N3
Bose Australia Inc.	Stand No: D3
Bytecraft	Stand No: A18
C.M.I.	Stand No: U14
CC's Light & Sound P/L	Stand No: W8
Chameleon	Stand No: S1
Clearlight Shows	Stand No: W19
CLS	Stand No: N5
CMC Music	Stand No: J17
Coemar De Sisti Australia	Stand No: P21
Command Systems	Stand No: S22
Connections Magazine	Stand No: A21
Crew Room/Gig Power	Stand No: V16
Digidesign/AVID Technology	Stand No: J13
Disco & Dancing	Stand No: L4
Disco World	Stand No: K3
Eastcoast Audio	Stand No: J18
Electrosonic Systems	Stand No: U19
Electric Factory	Stand No: P24
Elsta Audio and Lighting	Stand No: F18
EVI Audio	Stand No: F13
FOCUS	Stand No: O25
Gemini Lytequest Australia	Stand No: M15
Glantre Engineering	Stand No: H10
Harmonic Developments & Music Connection	Stand No: S25
Horwood Australia	Stand No: K5
Image Design Technology (IDT)	Stand No: O22
Imported Theatre Fabrics	Stand No: X14
Infonics	Stand No: U17
INLITE	Stand No: U13
Jands Electronics	Stand No: F3
L.S.C. Electronics	Stand No: P16
Laser Theatre Lighting	Stand No: O24
Lightmoves Professional Entertainment Services	Stand No: L5
Lightmoves Technologies	Stand No: I21
Magna Systems & Engineering	Stand No: J19
Major Music Wholesale	Stand No: K18
Mediavision Australia	Stand No: S6
Meyer Sound	Stand No: P13
Miller Professional Products	Stand No: U16
Moore Music	Stand No: F21
Musitronics Australia	Stand No: I5
Nightlife Music Video	Stand No: I3
Oracle Laser Productions	Stand No: U22
Osram Australia	Stand No: P10
P. Audio System Co., Ltd	Stand No: T8
Penn Fabrication	Stand No: H8
Performance Media	Stand No: R24
Philips Lighting	Stand No: M13
Premier Lighting	Stand No: T10
Production Audio Supplies P/L	Stand No: P8
Pro Light & Sound AV Dev.	Stand No: P22
Quantum Efex	Stand No: X15
Roland Corporation	Stand No: R3
Selecon	Stand No: P19
Show Structures	Stand No: S16
Show Technology	Stand No: U1
Showbiz Video/Thorn	Stand No: N1
Showcraft	Stand No: P5
Sound Magazine	Stand No: R22
Southern Cross Production Services	Stand K1
Spectrum Management Agency	Stand No: R25
Stage Line	Stand No: M21
Stage Technologies	Stand No: L1
Stage Whispers	Stand No: P19
Sylvania Lighting	Stand No: D1
Syncrotech Systems Design	Stand No: A1
System Sales & System Sound	Stand No: J15
TECHSCAPE	Stand No: A8
The P.A. People	Stand No: A3
The Resource Corp	Stand No: M10
Three Arts Services Pty Ltd	Stand No: P19
TOMCAT U.S.A., INC.	Stand No: W10
Total Fabrications, Inc.	Stand No: R13
Universal Lighting & Audio	Stand No: A13
Yamaha Music Australia	Stand No: M8

LIST CURRENT AT 9 MARCH 1997

See RADAR and the NEW 8 TRACK PD-80 on Stand J10 at ENTECH '97!



Now tape is history

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

It's not hard to see why - RADAR (Random **A**ccess **D**igital **A**udio **R**ecorder) offers all the speed and power of full random access digital recording with the familiar controls of a tape recorder.

But no tape system, analog or digital, can compete with Radar's speed and editing capabilities. You can slide any track or group of tracks against other tracks, move material to any other location, edit loop, undo and much more - all instantly! *You'll never have to wait for the tape to rewind again.*

In fact, Radar owners have reported production times up to 3 times faster than reel-to-reel tape recorders!

Radar couldn't be easier to install and use. You simply plug in your inputs, outputs and remote - and you're up and running. No mouse and no complicated screen layout with endless menus. Radar's learning curve can be measured in *minutes* - not hours or days.

A complete 24-track Radar system consists of a compact 4U cabinet, remote controller and a data back-up unit - that's it! And you can start with an 8 or 16-track system and easily upgrade as your business grows.

Literally hundreds of Radar systems are in use with leading recording artists and engineers worldwide. Radar's User List includes such names as George Michael, Brian Bennett (Shadows), Simple Minds, Pet Shop Boys, Rick Wright (Pink Floyd) and many more.

So phone or fax now to see the Otari RADAR in action - and to start making some history of your own!

OTARI

For full information on the OTARI RADAR please contact:

Amber Technology Pty Limited ACN 003 231 137

Amber TECHNOLOGY

Sydney
Tel: (02) 9975 3211
Fax: (02) 9975 3338

Melbourne
Tel: (03) 9699 1955
Fax: (03) 9699 1944

Brisbane
Tel: (07) 383 8444
Fax: (07) 383 8455

Write in Reader Service Number: 130

LETTERS *#/@%XX -?!

Kiss fan

After buying your magazine with the excellent picture of Gene on the cover I read the story. Who is Catriona Forcer and what would she know about KISS? **-Spiros Malarkaza, Marrickville NSW**

MLX Choice

I'm having troubles understanding which moving light choice I should make. We rent into clubs but also do some corporate theatre. Have you done any reviews? **-Richard Elvers, Hurstville NSW.**

**No we haven't compared them back to back. Talk to people and have a look at the Moving Light Comparison at ENTECH this month. -Ed*

Scored W's

Can anyone help me with some historical information? I have recently acquired one pair of ACT concert W bins in surprisingly good condition and at no cost. It's been a while since I heard a PA using these and I wondered what 15" woofers I should load them with; and what boxes I should put on top? It'll be a club system. Thoughts?

Michael Burton, Paddington, QLD.

**I used JBL 2225 woofers myself in these and they kicked at the time. Any high powered 15 should do, it needs a very stiff cone, preferably ribbed to resist huge air pressures. On top use either a 4560 (1 x 15") or a 'Roy' bin (2 x 12") with any decent sized compression driver and horn flair up top. A lot of fiddling is needed for good sound. -Ed*

Best boy?!?

'Love the mag, -a good mix of tech-topics. I found the Foley article very interesting and I will have fewer sleepless nights now that Connections has finally put my mind to rest (after watching countless film credits) as to what a Foley artist actually is. Mind you, I'm still not entirely familiar with all this film-credit jargon. I know this is the 90's and all that but dare I ask what (in the name of Hollywood) is a Best Boy(!) and does it have anything to do with the terms "In-betweener" and "Grip"? And, why do films with no small animals require a "Gaffer"? Perhaps other readers may be able to throw some more light (sorry) on this strange terminology.

-Terry Marter, Tech. Manager, Chaffey Theatre S.A.

Kidding who?

I've known of your editor for a dozen years or so and yet am continually astounded how he holds back what is otherwise an excellent and neccessary magazine. Witness the continual ramblings of Duncan Fry and now 'Road Warrior Felix'. Useless words on valuable paper. Where is the really useful information and news delivered with accuracy and style? There is a real need for a serious rethink at Connections. Stop the roadie drivel.

-'Mr. Audio', email.

**'Roadie drivel'. A cheap shot from someone who'se gone soft. -Ed.*

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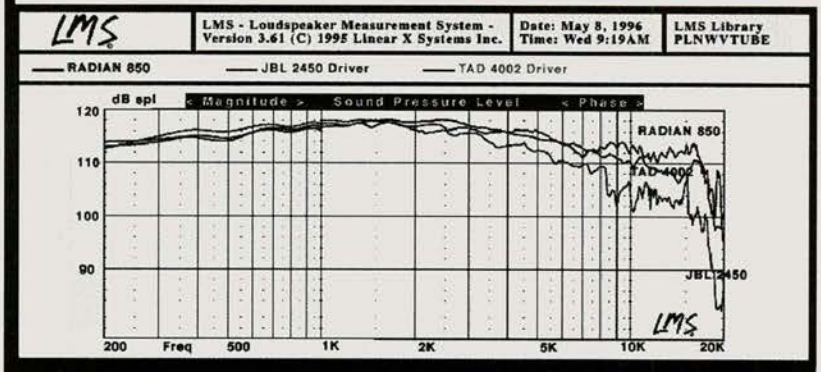
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Write in Reader Service Number: 177

Duncan Fry

Snow Job. *Part One:* **Windscreens and Whingeing**

When you're driving a long distance in a truck, you know you're going to be cramped up with two or more other people for quite some time. You need a bucketload of tolerance to keep things on a friendly basis, and one of the first things you realise is that some people are put on earth just to annoy you!

My trusty helper Chris and I had scored ourselves some gigs at the snow - a few days at Falls Creek, then Bulla, and then Jindabyne and home. These shows were usually a bit of a cruise - minimal system, one load in, four shows, one load out and drive to the next one.

Halfway to the first gig, we were cruising steadily along; Chris was driving, I was just staring out the window.

All of a sudden a semi rocketted past us from the other direction. "BANG!" - a giant rock leapt up from the road and shattered our windscreen. One minute we were doing fine, the next we were cocooned in a white fog.

He stood on the brakes and we pushed the glass pieces out with our hands so we could see where were going.

Now, I don't know how many of you have driven any distance without a windscreen, but boy is it COLD! And windy, and wet. And the higher up the mountain we went, the colder and windier and wetter it got.

By the time we reached the gig we were frozen, our teeth literally chattering with the cold. It was half an hour after arriving before I managed to get my fingers to move. I had my loading gloves on, a parka, a beanie, a scarf, and I was still cold.

The next day we managed to buy a plastic windscreen. Actually it was made of thin polycarbonate, totally clear, very strong, but brittle. We stretched it across the windscreen, wedged 3 pieces of dowelling vertically across the windscreen area, and liberally applied gaffer tape around the edges.

At the first gig we had picked up the band's stage roadie, a guy called John. All he did that first trip was whinge. About anything, but mainly about the noise the windscreen made as it flapped away in the breeze.

"Gee, can't you stop it making that noise? That noise is driving me crazy; can't you get a new windscreen?"

On and on he went in this mode, hour after hour, until we had both had a gutful of him.

"There must be something you can do about the noi...!" He didn't get any further, since my hand was clamped around his throat.

"Hey, Chris, stop the truck" I yelled. "We'll have to teach this bastard a lesson".

I opened my door, and dragged the snivelling little snot out of the truck.

"You can travel out there for a while. Maybe you'll appreciate it being warm and noisy in here".

Chris put the truck in gear and we slowly pulled away.

"Hey wait guys - I was just kidding - wait, wait." He jumped on to the running board, hanging on to the rear vision mirror with one hand, and the door handle with the other.

"Wait, stop, I'm sorry guys, please, wait...shit it's cold out here...wait, please let me in...I'm getting really cold, guys...I won't complain any more...please" He begged and pleaded for several miles, until I could see his face and hands starting to turn blue.

"What do you reckon, Chris? Let him in now?" I asked.

"We'd better before he freezes out there and we have to do his work too," replied Chris.

So, we stopped and let him back in. He didn't say much at all, just sat huddled in the middle rubbing his hands together and muttering "Bastards" through his chattering teeth!

He never travelled with us any more, though. For the rest of the snow tour he chose to travel with the band, and I can't really say that we missed him! •



Write in Reader Service Number: 149

Le Peplum - Royal De Luxe

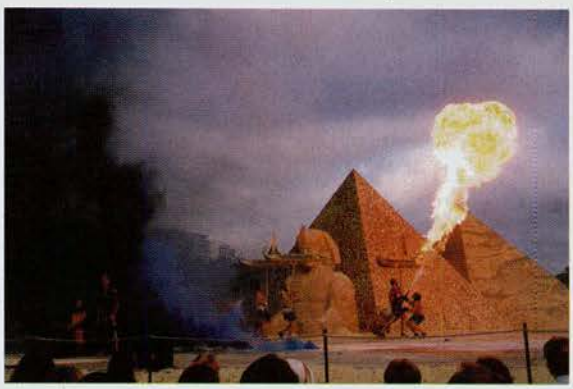
by Jacqueline Molloy



This outrageous send up of Hollywood biblical epics that follows the fortunes of a woman remarkably similar to Cleopatra, and her two mad brothers, was the hit of the Festival of Perth. A free show, it performed out-of-doors to an audience of 2,500 each performance and that doesn't include the hundreds more who watched from outside the fencing, including the few smart punters who'd brought their own ladders in order to get a better view! Against the backdrop of the Perth city skyline this melodramatic saga was a visual extravaganza. Performed late afternoon under natural light, the scenery, pyrotechnics and props were extraordinary.

Some of the props included, 140 litres of milk per performance (probably low fat judging by the slender physiques of the naked couple who bathed in it), homing pigeons, giant mechanical feet that took about a size 40 Roman sandal and a Fiat with a performer under the bonnet; his head poking through. The company brought nearly everything with them from France (except for the perishables) in three, forty foot and one twenty foot shipping container.

The performance opened with red velvet tabs in the centre of the concrete performing area being literally burned to cinders with only a frame left standing which was then deftly removed by the stage crew wearing blue dust coats. Behind the tabs was a 4 metre high sphinx flanked by pyramids. And of course the sphinx talked, its voice booming through several kilowatts of sub woofers. It also moved its head and breathed smoke at the appropriate moments! It was operated marionette-fashion by 6 to 8 ropes which were controlled by the stage crew in full view, mouthing the dialogue, which did nothing to deter from the spectacle.



As if there wasn't enough happening on stage to keep us intrigued, there was the added element of the odourama machine, an ancient looking contraption that was pushed back and forth along railway tracks in front of the performance area by two sweaty techs. At each end they would stop and adjust the outlet valves to release a new smell. The olfactory delights included horses in the stable, freshly cut grass, a damp cellar, popcorn and pizza. The scents were apparently created

(continued over page)

Theatre News

❍ **Bathurst** City council will call for tenders for the reconstruction of the City Hall into what they call a "entertainment centre". Council's preferred option is a 650-seat theatre and a ground floor hall with seating for up to 1200 people, costing around $10 million.

❍ **Does** Sir Cammeron Mackintosh really dislike the renovated Regent Theatre? Mr Mackintosh told the herald Sun, 'In my view, the Regent is no good for a theatrical show. I thought it vital to bring the stage forward so that the proscenium melded properly to the front of the circle'. According to Mr Mackintosh this would have allowed for a 65ft deep stage and an 1800 seat auditorium. As it is, he said that the stage-audience relationship was not "satisfactory".

❍ The **ANU Arts Centre** will soon have an orchestra pit and Construction is underway.

❍ **A plan** for a theatre space in one of the 'vaults' underneath the Southern approach to the Harbour Bridge has been lodged wth Sydney City Council. The proposal is for a 255-seat Aboriginal performing arts theatre and gallery. The plan is that vault 3 will be re-designed to accomodate the complex.



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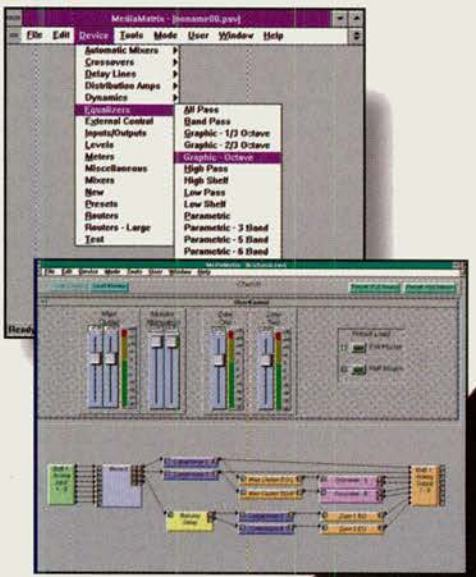
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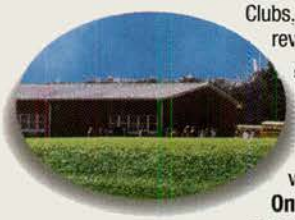
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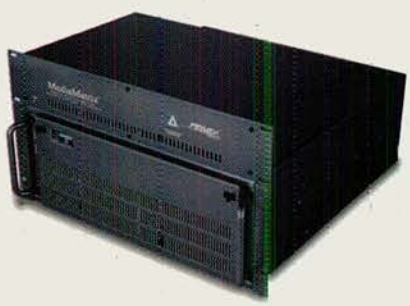
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Write in Reader Service Number: 165

Le Peplum - Royal De Luxe *(continued from previous page)*

by a perfumer using natural herbs and roots with thinners added as a solvent. Each aroma was released to coincide with the action on stage, for example the pizza odour accompanied the scenes set in ancient Rome. Subtlety was not a big issue here!

Pyrotechnics were a big part of the performance with virtually every scene involving burning or blasting. Apparently on the day of the first performance the relevant authorities decided that a theatrical pyrotechnics ticket was not adequate and that a display permit was needed. This required much bureaucratic running around on the part of the Festival, with the permit arriving only fifteen minutes before the opening performance.

The company pyrotechnician was a handy man with a flame thrower and the audience were left gasping more than once as flames burned very close to the performers. Backstage they apparently had enough fire safety equipment to cope with the towering inferno!

An astounding aspect of the scenic elements of this show was that they were all manual and mechanical. Everything was operated by the techs and the performers (the lines between were quite blurred) either by ropes or other simple mechanical devices. All of the stage machinery and props used had been distressed to look as though they did come from some ancient time.

The performance ended with a full size upright piano being shot from a giant catapult. The piano landed in spectacular fashion centre stage, shattering into numerous pieces. I wouldn't even hazard a guess at the budget for "Le Peplum", if nothing else the milk bill alone would be frightening! •

Up Country-

production for the '97 country music festival

For 25 years the Country Music Industry has gathered in Tamworth in the northern ranges district of NSW for the Country Music Festival.

Production is usually the preserve of regional firms, this year Bellingen Valley Sound and Strauss Productions handled the Town Hall events, including the Toyota Star Maker quest and many other shows.

Loading in on Monday, the lighting which included 4 Intellabeams and 8 Trackspots was rigged, comprising in house front truss and fly bars, while 2 back truss, a centre truss and 2 vertical bars were added. 83 lanterns and 4 x 4 way cyc's were used.

On Tuesday the PA went in, comprising 4 JBL AP35's, 2 AD80 subs, 2 x EV S1200 delayboxes set inside the FOH stacks for the front rows, and another 2 S1200's were used as delays up at either side of the front of the gallery.

Kevin Riddell then learnt that crawing on your stomach for 15 metres under the floor is the job the assistant gets!

The FOH mixing zone was established with a new 40ch CCA Forum console kindly loaned by Phil Webb from EVI Audio, and sundry effects and drive devices. The LX control was also positioned, a Jands Event 48.

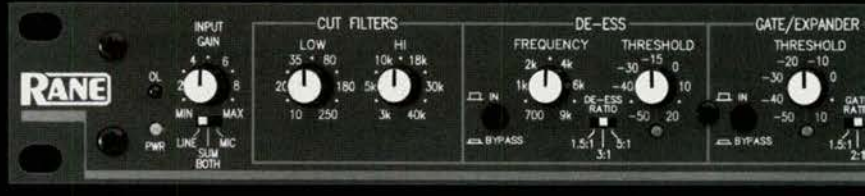
Day three the horror job was tackled, hanging 40 metres of black to dampen the acoustics. The heritage listing on the hall meant a truss frame was required, Strauss provided one running the width of the back wall and extending 10 metres down each side.

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Raising this was a horror, done with 2 x 18' winchups to take the weight of the truss while the crew, balancing on ladders, slid in the vertical support trussing. When fixed, one crew person slid along the truss tying and draping the blacks. More blacks were hung in the gallery to dampen the delays.

Then the lighting focus became more of a horror with a 20' step ladder placed on top of two bar cases to reach the front truss. (We cringe in terror. -Ed)

Of course on Wednesday evening the crew became aware that a 'pre-awards' gig had been scheduled for Thursday night, using their own production. Which arrived. Nobody connected with that event had contacted the crew, assuming they would start to load in on Thursday and thus find the Thursday night show already setup.

So just after completing the setup, the crew had to strike the FOH mix position, and stage monitors. Wouldn't that upset anyone?

Once the unexpected event had been and gone, the whole production settled down for a 12 day run.

The stage monitor system was run from an Allen & Heath GL3 24ch console, to 8 JBL wedges, one drumfill and 2 EV sidefills, with Jands and Dynacord amps.

Artists included Tommy Emmanuel, Tania Kernagan, Troy Casser-Daley and virtually the cream of the whole country music industry.

Extra support came from Noel Bourne at Techstream (GUVT) who loaned the Trackspots and I' Beams, and John Pallias at Ramsaudio who loaned a WS35A speaker for the monitor-listen.

The season ran smoothly, and a stereo mix was sent to a community broadcaster for an OB.

CREW CREDITS -

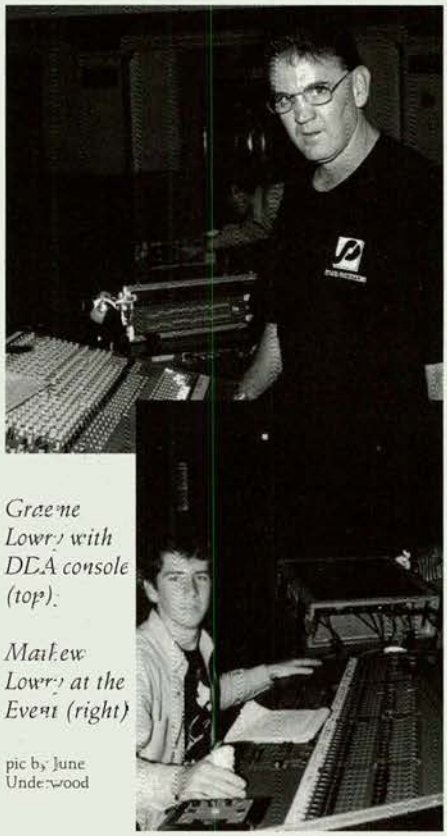
Strauss Productions: Grant Watson *(Prod. Manager, Camera);* Rob McKenzie *(Asst. Prod Manager, Camera).*

• Strauss Productions (02) 9879-1691.

Bellingen Valley Sound

Graeme Lowry *(FOH);* Mathew Lowry *(LD),* Greg Ridley *(Monitors)* Peter Lowry *(Followspot);* Kevin Riddell *(Stage Assistant);* Joe Collette *(Gofer)* and Martin Williams *(local rep.)*

• Bellingen Valley Sound (066) 551-488.



Graeme Lowry with DDA console (top).

Mathew Lowry at the Event (right)

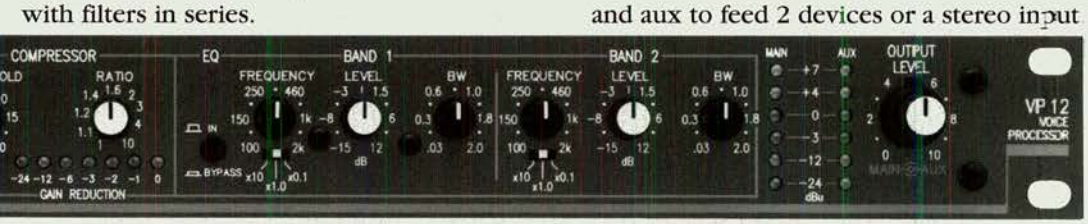
pic by June Underwood

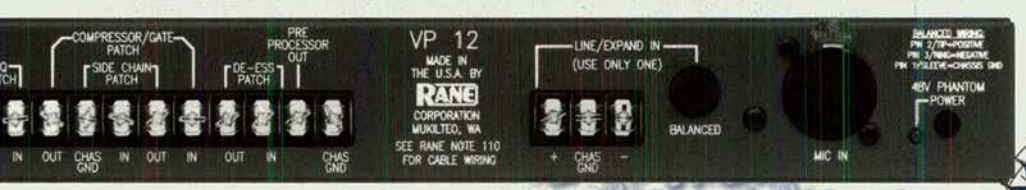
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A very British American Express



American Express Perth Crew (from left)
***Bernita Turner** (Project Coordinator);*
***Tina StJohn Stevens** (Production Manager);*
***Melanie MacDonald** (Producer)*
...and various crew behind.

I wouldn't have thought that stage diving would be on the agenda for the delegates at an American Express Convention but it happened at the recent *Japan, Pacific Asia, Australia 1997 Sales Convention*, held at Burswood Resort, Perth. The opening night dinner was held off site at Fremantle Prison (no longer a functioning gaol) for 750 delegates who showed their enthusiasm for the rock n roll band arriving on Harley Davidsons, by creating an impromptu mosh pit and indulging in a spot of stage diving! I'm sure they were inspired by the *Elvis* impersonator who was of course singing, "Jailhouse Rock."

English events company *Catalysm* won the contract for the convention and an English crew of 35 flew out to Perth a week before the three day event began. Tina St John-Stevens, the production manager, originally came out six months beforehand with key crew members to do a site survey and to source equipment. "We came for eight days and I visited local suppliers. Anyone who said to me I'll come and see you at the hotel, I wasn't interested in, I wanted to go to warehouses and see what kit they had and also to assess relationships because we'd be working as a team."

Teamwork is a theme that crops up frequently with the English crew. Many of them have worked together on two major American Express events before this one. "We had done an event in Eurodisney several years ago and that was the birth of the format that we used here and on the last convention we did in Kuala Lumpur, which was quite a challenge as the client had said to us at Eurodisney 'this is what I want for the Far East'. Not compromising on what he wanted was a challenge, as suppliers were hard to find in the Far East as were the skill levels that we needed from the local crew. It's been much easier here in Perth."

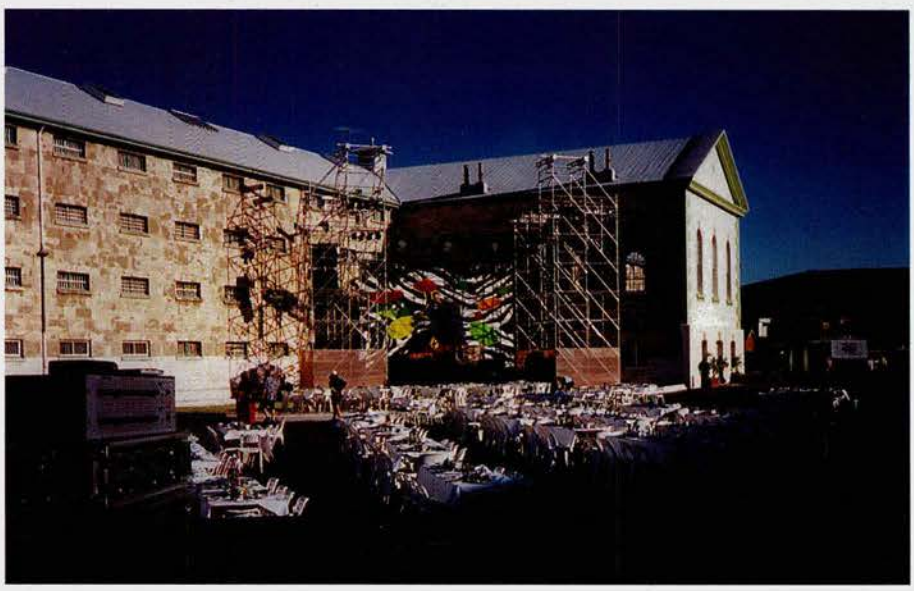
LOCAL PRODUCTION

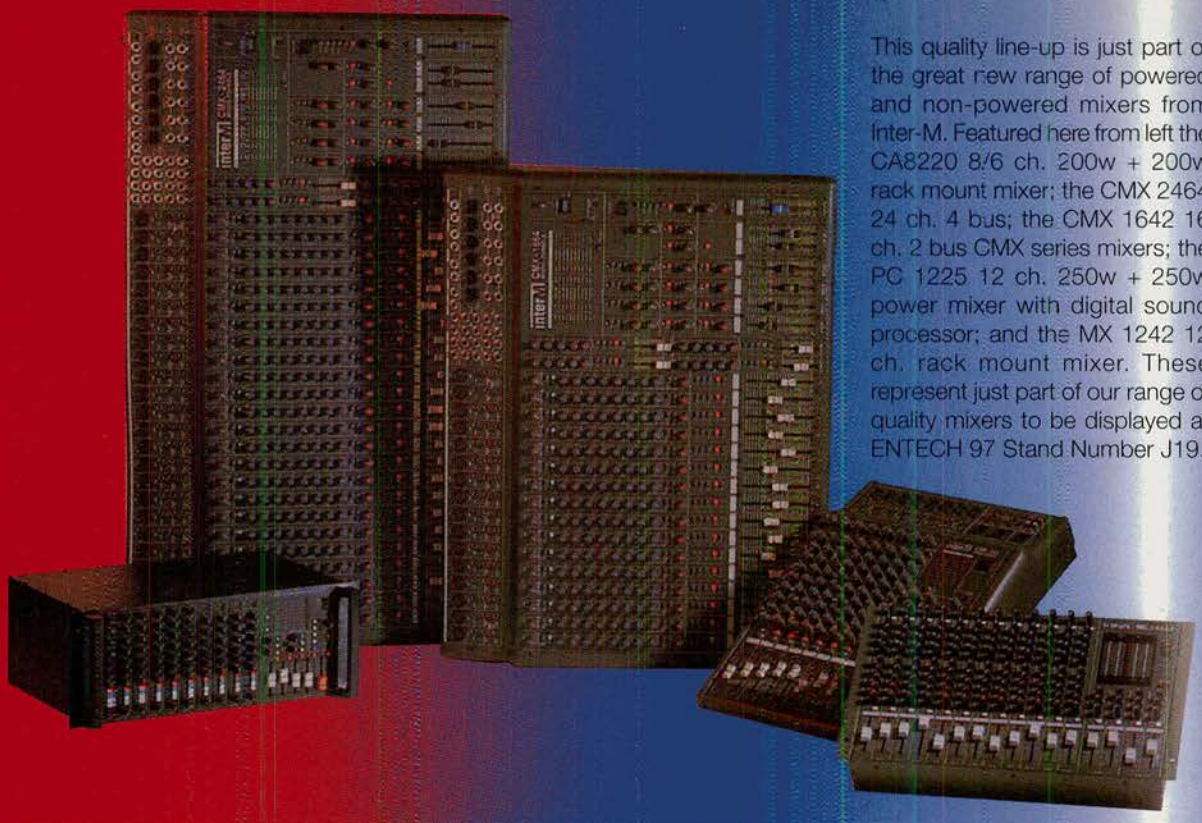
St John-Stevens aim was to use as much local equipment as possible for obvious economic reasons. *A.A.A. Production Services* were hired for sound and *Concert & Corporate Productions* for lighting. "We've been very lucky with sourcing equipment locally and only had to bring the video system and the rigging equipment." A rigging team of four were part of the English crew. "We brought our own riggers and kit for a couple of reasons, firstly they were part of the team in KL and consistency is beneficial and secondly, and this is not being unfair to the Australians, but the rigging ticket is very different here to what it is in England."

Martin Pilton the sound designer wasn't able to make it to Perth for the original site survey and had to rely on photographs. "The photographs were pretty detailed and I could see from them that the house system in the showroom at Burswood needed a bit of work. Fortunately the Burswood staff agreed as they weren't entirely satisfied with the way their new equipment purchases had been set up. I came out earlier than the rest of the team before the convention started so that I could make some design decisions about the way the equipment was set up."

Pilton did an on-the-spot redesign of the house system which involved putting in a front of house truss and turning a three cluster array system into a distributed system. He then used the inherent delays in the systems' controllers from the array

(continued over)





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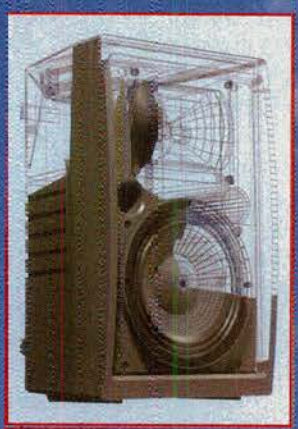
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Enclosure Material	Polypropylene



M.I. 8

Frequency Response	50Hz - 20kHz
Power Handling RMS	150W
Enclosure Material	Polypropylene
Sensitivity (1W/1M)	93dB Nominal
Impedance	8Ω SPL
Programme Power	300W

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SUB 18

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Programme Power	1000W
Sensitivity (1W/1M)	100dB SPL
Nominal Impedance	8Ω

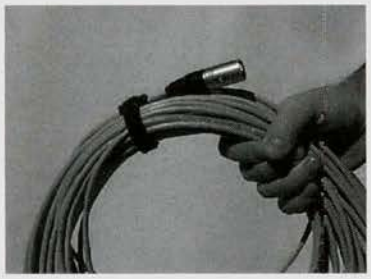
M.I. 8 $490 rrp
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SUB 18 $1300 rrp

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system to maintain the image of the system on stage.

"We wanted to make the radio mics or lectern mic or even the band vocals sound like they were coming from the stage and I believe we managed this very successfully. We also managed to flatten out all the graphics and use the controllers to equalise the system so that it went from sounding very hard and thin to giving a warm vocal sound. This left the out-front graphics for any last minute tweaks that needed doing. We ended up with a system that the Burswood staff and management seemed very pleased with."

The English crew included a radio frequency engineer, George Hogan who prior to coming out here had done internet searches to gain information about the local RF spectrum and also managed to source the RF test equipment he needed. Pilton said that while it was not common to include an RF engineer on the audio crew it was extremely worthwhile. He believes that if industrial clients are spending huge sums of money on an event they would be annoyed to know, that for the want of a couple of hundred dollars on the hire price of a radio mic, there are problems in the middle of the show.

Pilton believes that there are two ways to approach this; one is to festoon the performer in radio mics and stand by and watch the first one die because of battery problems and the second one due to an RF problem and then just maybe the third one will work. He believes that a smarter approach is to know that the equipment is well serviced and also that someone has analysed the RF spectrum of the area, safeguarding against radio mics being intercepted by taxi companies or having problems because there happens to be a GSM phone transmitter on the same frequency as the one you're using.

"The fact that we didn't have one radio mic problem on the entire show, none of our 53 walkie talkies had a problem and that we were able to reprogram the two-ways to fit our needs within the RF spectrum that we can legally use here, made having an RF engineer invaluable."

Chris Stigger, the video head of department had two and a half tons of equipment air freighted out from England and a crew of four. He had to accommodate the main room at Burswood plus two ballrooms that were also used for sessions. "In the main room I had a single screen multi-camera betacam system with three Sony M7 cameras for live pick up, one of them a hand held and used a Grass Valley Vision Mixer with distribution achieved by using 27 component-video distribution amplifiers. We flew two Barco 8100 projectors, one of them as a back up. In each of the two ballrooms a Kodak 20/50 35mm slide projector was used."

He also brought three Pearlux 2 matt white screen surfaces which he used because of their high optical gain. Stigger emphasised that he was using a component system, not a composite, in order to keep the video quality as high as possible. A video director was part of the team and Stigger says that they were basically a portable production unit and were able to do fast on-site edits. His team was also responsible for shooting archive footage. One of the highlights for the crew must surely have been the 700 or so last minute slide changes that delegates made over the three days!

Lighting Designer, Tony "Turbo" Hall came out to do the initial site tour with the set designer. "That was quite interesting because it was one of the first big shows where I was asked to do a venue recce with the set designer. I asked Belinda, the set designer, to give me some depth because most of the conferences in the UK are just done flat against a wall, and yes in the end you can make it look good, but with some depth on stage you're part way there. Belinda came up with some gorgeous 3d pieces and interesting angely shapes and it was a joy to light."

Turbo has worked with St John-Stevens so often that there was no need for a lighting design brief. She said, "Turbo gives me a design and tells me how much it will cost and if I can afford it, I'll go with it because I know that what I'll get will make me happy. I never restrict him from the start and he's never let me down."

Turbo used what was essentially the house rig in the show room which he found to be pretty extensive. "I added 24 VL5's which we got from Jands and also 12 Clay Paky HPE Golden Scans. We brought a Whole Hog 2 with us because I knew I would need a desk of that nature to do the show. I knew I would need 240 channels for the main rig and then add the VL5's and scans on top of that and that's a lot of number crunching to do but the desk was excellent."

I spoke to the crew on their final night in Australia at their farewell Bar-B-Que on the banks of the Swan River. It was a lovely setting, plenty of food and liquid refreshments watching the sun go down...further and further: until it was pitch black and everyone suddenly realised that no-one had thought about lighting. Turbo had to endure a lot of goodnatured ribbing about his lack of preparation for this, the final event of the convention.

Jacqueline Molloy

Black Sheep

Sydney based event staging and production company, Blacksheep Productions, which started as a schoolyard dream, has gone on to become a reality. ***Buck Freeman*** *speaks with 23 year old Managing Director Ben Alcott to find out what makes Blacksheep tick*

Describe Blacksheep
They're small, black, furry, bleat a lot, and New Zealanders find them very attractive. And I'm not talking about the animals! Blacksheep is a true 'production' company - we have the facilities in-house to produce and stage events for an extroardinarily wide range of clients. Our business basically divides into 4 areas: Event Production, Audio Visual Staging, Video Production - which includes both live OB and corporate work - and Special Services, which includes consulting to clients on installation sound and lighting systems. We pride ourselves on being a true 'One Stop Shop, specialising in niche markets, such as pyrotechnics, multicamera outside broadcasts, and creative production solutions.

How did Blacksheep begin?
I started Blacksheep when I was 13, in Year 8 at school. When I got to high school they had a great AV department, and I became interested in being 'behind the camera'. So, I started Blacksheep.

How did Blacksheep get a hoof - sorry, foot- in the door?
It wasn't easy trying to get a job as a 13 year old! I got a good break with Channel 10 on my 16th birthday, where I worked in transfers and program compilation. My confidence bolstered by this, I approached (the late) Dennis Braham at the Sydney Entertainment Centre, and he took a great chance and actually employed me! Blacksheep began contracting to the SEC in July 1990, and my first show was Bobby Brown. From there, we got a lot of experience in multi camera event coverages.

Was your age a problem in getting clients?
It has never really been a problem, but it certainly has created some interesting moments. We produced a touring roadshow for Qantas Holidays when I was 17, but they thought I was much older. At the first show's after party, everyone was celebrating and ordered some pretty serious drinks. When asked what I wanted, without thinking I ordered a chocolate milkshake. At that point, the National Sales Manager realised they had just presented a show to a thousand people that was directed by someone who couldn't even drive!

Where did the name 'Blacksheep' come from?
Probably the most asked question! I usually try to think of some extremely interesting story to explain it, but the truth is really quite boring. My family is very medi-

(continued over)



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Write in Reader Service Number: 195

cal - my father is a doctor, my mother is a nurse, my sister is a 'sister' - so relatives always told me that I was the 'black sheep' of my family. Not a negative thing, though! I'm proud of being a Blacksheep, and I know that my staff are too. We've had some very funny variations - black ship, black shoe, black stump, black silk (for R rated productions), black box - the list goes on. Probably the worst was when we first bought gear from Sony, and the invoice was made out to 'Black Shit Video'. When quizzed, the sales guy said "I thought it was a bit of a funny name!"



Where is Blacksheep today?

Blacksheep is based in Sydney's Ultimo, but we have a lot of work both interstate and overseas. Our video facilities include two non-linear Media 100 edit suites, as well as voiceover and studio areas. Our production and staging staff are also located here. We actually got our office space through my association with Channel 10, who were occupying it for their news and sports production areas. We have a full-time staff of 10 at the moment, and we are on the look out for 4 new people. It is Blacksheep's philosophy to encourage young talent and give young people a chance in what is usually a very hard industry to enter. We currently employ two trainees, and we are always looking for bright new talent. There is a lot of publicity about people trying to find work in the industry, but for companies like ours who are on the look out for young people - boy, it is really hard to find the right type!

What is your client base?

It varies greatly - from major corporates such as the Westfield Group, Southcorp Wines, Visa, Qantas Airways and Holidays, right through to schools - actually, we are doing a job for a primary school at the moment with 60 channels of front of house audio, pyros, Vari*lites, and a multi camera OB. Compare this to a conference we completed last week in Adelaide for 800 people, where we produced the opening ceremony, provided lights, sound, video, and effects for the plenary sessions, looked after 8 breakout rooms, did 3 outside broadcasts, and produced a compile video of the weekend. We work for any client that wants to 'stand out from the flock'!

What would be the most unusual job that you've done?

We are the production company for Warner Brothers, and their school holiday program 'Its Showtime'. We have some pretty unusual stories to tell about working with Bugs Bunny, Foghorn Leghorn, and the gang. With 'Its Showtime', which is the only contract of its kind in the world, we provide production - lights, sound, effects, and operators - for 22 shows simultaneously, twice a day, 7 weeks of the year. We do more shows in one season than a mainstream theatre show would do in a year! We once had a situation where the Warner Bros Batman damaged his back just before going on stage, so our operator had to step in at the last minute - now that's standing out from the flock!

Your worst experience on a job?

We are well known for our video compiles of conferences, and we were doing a very large conference last year at the Hyatt Coolum. We flew one of our Media 100 edit suites up, and we were putting together a 17 minute program to be played that night at the conference finale. Our hardware had been playing up, and the deadline was getting closer. While the rest of the team were setting up the AV for the night, I was in the hotel room waiting for the computer to finish rendering the video. I was on the toilet when I heard it crash again, so I rushed out, no pants on, to see what had happened. The client chose then to walk into the room, with me, pants around my ankles, kneeling in front of the computer swearing! Note that the program played and was very successful.

What are your plans for the future?

Blacksheep looks forward to moving heavily back into multi camera OB work in 1997, together with renewed focus on specialty services such as pyrotechnics. We also realise how important our suppliers are to us, so we will be planning some special recognition for them this year too. Overall, through improved staff training, we are keen to hone our customer service skills to as close to perfect as we can. Our goals are high, but with a strong team, we are set to become a Sheep Station!



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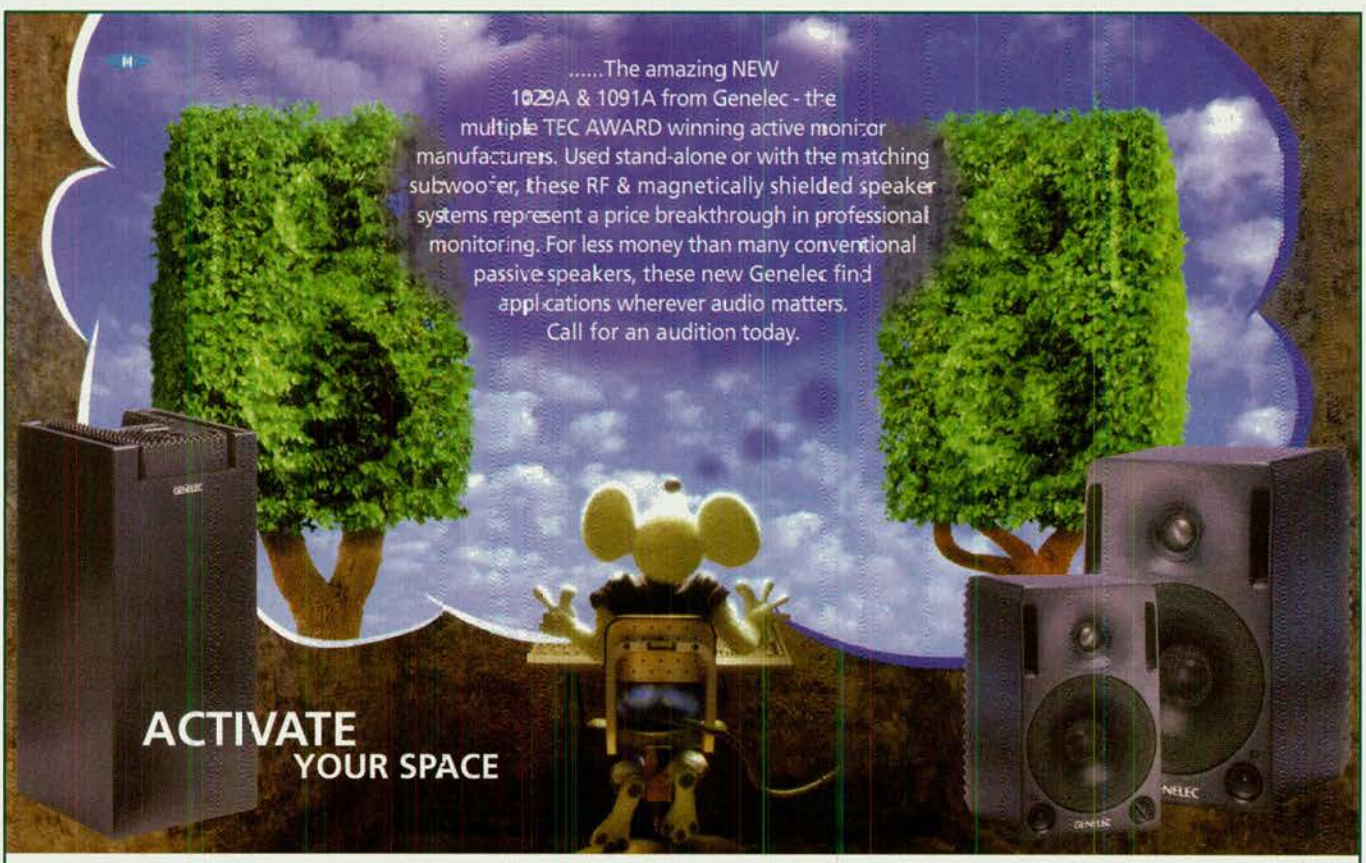
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Write in Reader Service Number: 182

BALANCED MAINS

Why you need it, How to get it

Dan Cole finds out

A local manufacturer has come up with a neat object aimed for most studio applications: the pursuit of clean power and they may in fact have the answer. Peach Audio Electronics of Coogee, Sydney design and build what they call a balanced mains transformer.

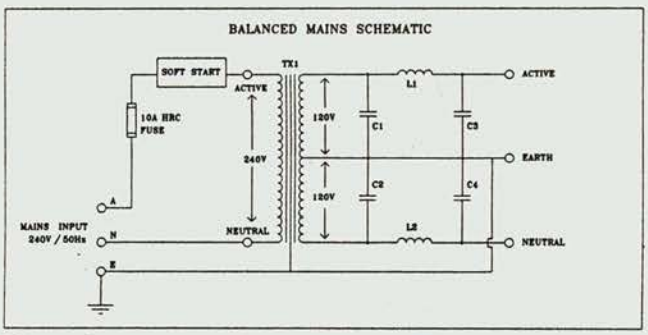
But Really, What Is It?

The Peach Balanced Studio Supply is a device designed to eliminate hums and noises in critical audio environments, such as studios. Dirty power goes in, clean power comes out yet it is not a surge protector or line filter. The power supply cancels noise through a three tiered process: the transformer stage, winding stage, and the RF stage. All are contained within or around the core of this device, a 2kW toroidal transformer.

First, noise coming up through the mains is eliminated by electrostatically shielding the primary from the secondary of the transformer. At this stage, noises are 'shunted' to earth, such as timing signals or fridge clicks etc. The next stage involves the output of the transformer; here there are two windings, each at 120v. The earth point is the centre tap or leg of each winding and is the earth point of the unit, however it is important to emphasise that this is not a floating earth but tied throughout the unit.

This is the unique feature: at the secondary stage of the transformer, top and bottom, you have 120v AC out of phase with each other. This is what is termed a symmetrically balanced power supply and is how the unit delivers 'clean' mains to any piece of equipment in the 'loop'.

The third stage includes heavy RF filtering between each 120v line and to earth with thermal protection if more power is drawn than available. This is the circuity stage of the unit through inductors and capacitors. Although 'three stages' all are based around the transformer which does most 'power cleaning' with RF filtering attached to the transformers output stage. The unit will output the same voltage coming in, whether it be 230v or 256v or whatever so in this case it is not a stabiliser instead it has been designed as a transparent unit.



Theory

The Peach Balanced Studio Power Supply works on the same principle as a balanced microphone in that it 'nulls' all the reactive currents which are 'thrown out' onto the earthing plane by equipment. It's the same concept as audio balancing where you have balanced signal output but is instead applied to mains power where it is 120v out of phase with the other, nulled at one earth point.

All equipment in a studio produces noise which ultimately ends up on the earth and in a worse case scenario onto tape, and all equipment is linked to this 'earth'.

Usually in a normal unbalanced system 240v mains come into studio equipment transformers via the active line and are then returned through the neutral line. In this unit output mains is sent out of phase so there is no return except on your earth. Reactive and inductive currents are then eliminated, or 'cancelled out', if you like.

There are two Peach units available, a 1kW model aimed at the HiFi sector (which is creating interest) and the 2kW unit referred to here which has a capacity of 8.3amps. A larger custom unit can also be ordered. For this reason it is important to sit down and calculate how many amps are actually being used in your studio. The 2kW unit would probably suffice for a home studio set-up however if there are large multi-tracks or high power monitoring systems/amps an extra unit may be required as some power amplifiers can pull 6 amps alone.

Results

As referred to above, balanced power will eliminate all earth loops such as hums that may occur when various pieces of equipment are linked together. Once clean power enters the studio it becomes straightforward to then isolate any further problem noises but the main advantage is the quality of sound produced as a result. According to one owner there is a marked difference in the quality of sound

(continued over)

PRO TALK!

Relative Level

What is Relative Level (what the hell does this mean!?) How are recording levels handled in the studio with the diversification of recording and processing practices and formats? Dynamics verses volume?

• **Greg Hopping** from **Nu-Town** (NSW) says: 'Maximum level to tape is the essence of all great recording. Not only does the voice or instrument sound better but also minimises noise levels. Consistent levels can be achieved using compression however in the case of vocals and some instruments, good mic technique is most important. Wherever possible it is better to record direct to tape and then effect or compress the signal upon return. It is important to make sure that your masters are as loud or louder than other mastered releases of the genre you are working in.

This ensures full impact for your production on both vinyl and CD, but be careful as 0dB on one machine may be plus or minus up to 5dB on another for example, Tascam & Sony etc. I have never been able to figure out why 0dB is not universal!'

• From **Wombat Rd. Studio** (VIC) is **Barrie Clissold's** contribution: 'Relative level seems to mean less these days than in the past. Most pro-audio equipment is designed to operate at an electrical or signal level of +4dB but these days much equipment is aimed at home or project studios, usually operating at -10dB or 0dB and many units have switchable input and output levels. 'When recording to analogue tape we aligned our Tascam 16-track and our 2-track machines to suit Ampex 499 tape which is designed to cope with higher signal levels. The 499 is

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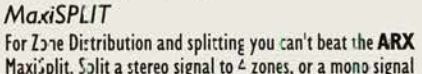


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Write in Reader Service Number: 124

amazing stuff as it is recommended that "0" recording level be increased 4dB or so but you can still record 5 or even 8 dB above the recommended flux density and receive all the detail with virtually no discernible distortion on playback. We tend to push the levels pretty hard on things like drums and other percussive sounds, yet on highly articulate tracks such as vocals or acoustic guitars you are better off keeping the levels around the recommended 0dB for accurate sound reproduction.

'We usually do our own mastering to DAT or CD-R and hence when using digital formats either ADAT or Hard Disk we tend to record with at least 6 dB or more up our sleeve. There is no advantage in pushing digital devices any harder and if you do, you risk digital overload which is disastrous.

• **Ike** from **Darling Harbour Studio's** (NSW) response to our queries. Of Relative Level: 'Relative to a pure sound at maximum level'. On how you might maintain consistent levels to tape: 'Consistent level using room sound and a little compression.' Regarding the session master tape, how 'hot' is it and what format? Ike says, '2" 24 track hot, to maximise playback levels to mixdown.'

Are you in contact with mastering facilities?

'Yes Turtlerock (ie Rick O'Neil.)' In your opinion what is the current trend in Relative Levels? 'Hot and pure signals to tape always' Any other points? 'Creativity and listening to the environment you reusing is always a view to achieving artist potential!'

PRO TALK! RELATIVE LEVEL

• **Greg Dixon** from **Aphek Studio** (NSW) contributes: 'My assistant Doug says he doesn't record hot because the tape stretches (joke). Whether to compress to tape or not depends on the style of music and what sound is required. For rock-type sounds — where you don't require a lot of dynamics, I compress kick, snare, toms, bass and vocals to tape. For a jazz band I would compress almost nothing — the dynamics are important. Level to tape also depends on the sound you are after; if running an analogue multitrack you an run things into the red to give them more edge and grit if required. Most things I record peak over 0 dB; it's a case of using your ears and knowing your gear! The trend in mastering still seems to be to get things as loud as possible. Doug's other advice for maintaining relative level is to use a builders square.'

• **Marshall Cullen** from **Damien Gerards** (NSW) adds: 'Relative level in analog is the level that the tape machine and the tape 'talk' to each other. It is expressed in decibels (ie +9, +3, 0, -3) but is commonly referred to as reference level and expressed in nanowebers [nWB] (ie, 185, 250, 320, 410, 520). This is the measure of flux or gauss onto oxide particles on the tape. For digital, relative level is set and decided by the manufacturer and the user simply sets the input metering at a 'safe' level to avoid "overs", usually around -12 on a DAT.

'We run Ampex 499 at the maximum recommended level of 520 [nWB] on the 2" and 320 [nWB] on the 1/2". (The smaller head blocks are not capable of generating consistent gauss at higher levels.) We found that other pro- analog studios such as 301, Festival, Megaphon were also using 520 nW on 499 too. Most good engineers will request tape machines set-up to this standard.

'The advent of 499 and other high level tapes (such as BASF 900) have helped analogue hold its own against digital and if you are still using the 456 formula you can't run so high and will need noise reduction to keep tape hiss down.

For mastering we deal with both Festival and 301 Mastering who master to the Sony 1630 U-matic format, still the only proper master tape for CD because it can be verified and error checked accurately, unlike DAT and CD-R. Both facilities prefer 1/2" analogue 2-track 499 to master from and, if necessary, will run the DAT master through an analog machine while mastering to add analog warmth if suitable to the project.

'The trend to "slam" the final chain to CD — to squeeze the loudest possible levels, does seem to be waning (thank God) as dynamics are essential to the overall program; U2s recent CDs are an excellent example; they are a little quieter than a lot of their contemporaries but the quality is far greater and usually easier to listen to.'

• **C'est Ca A/V's Norman McCourt** (VIC) contributes: 'Perhaps you mean the transfer from an analogue source to digital and the line up involved which, for music, tends to have stabilised thus: at mix down, 0dB on the VUs of the desk should probably translate to -12dB on the digital master machine — pretty well tried and tested for 10 years plus. Recording digital to multitrack: 0dB on channel V.U.s of desk should translate to -19dB or -17dB of the digital machine. However rules are made to be broken. Good luck!'

• **Neil Gray** from **True Form Music Services** (VIC) says: 'As far as multitracking is concerned I am now using digital and although tape noise is no longer a concern, I still like to keep the level up to overcome any noise introduced by the desk but not to the point of risking digital distortion.

When mixing to DAT some years back I was still using an 'analogue mentality' and pushing hard at '0' but as most things are sent out to be mastered (and as DAT has no shortage of headroom), I'm not as critical. Why blow a good pass at a mix because of one over-zealous snare hit. It still bothers me that in an age when we are working towards a format with more control over dynamic range (CD) that a lot of mastering houses tend to sacrifice dynamics in the music for overall volume, stating that your CD must be as loud as everybody else's. If I want music louder I'll turn it up and I'm sure radio stations still use more than their fair share of compression.

(continued over)

Balanced Power

produced by the studio: Bottom-end frequencies sound lower, panning sounds become more acute and in some cases high frequency response improves. These certainly are subjective remarks yet the physics are in place to make a difference.

As a rule of thumb, studio equipment will run more efficiently if there is clean power available. All equipment is affected by dubious power and this can manifest in under performance or in the case of some digital equipment internal clocking can be effected, especially the quartz crystal which determines the sampling frequency for incoming audio. Unstable power can cause "jitter" which may cause this clock to alternate the sampling frequency slightly from say, the regular 44.1kHz. Small variances in sampling rates can become audible especially in the high frequency range if the internal filters or clocking cannot cope with noisy or unstable power.

A Few Extra Points

• Earth linkage detectors, or safety switches found on a number of units have to be used after the power unit. Any external earth link detectors would have to sit on the output of this unit.

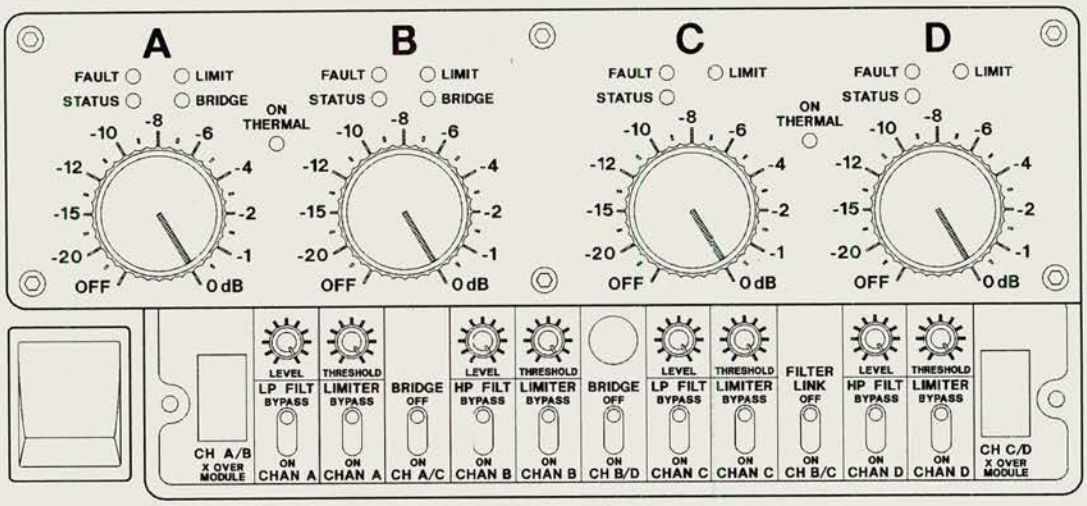
• Because the power supply has such a large transformer there is a 'soft-start' feature designed to avoid overloads or mains 'in-rush'

• The unit is designed not to radiate RF by utilising toroidal transformers.

Power and mains supply is always underestimated link in the audio chain and can become crucial regardless of the level of studio level or application. The Balanced Power Transformer appeal certainly is its high voltage capacity and 'transparency' in a mains line chain.

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Write in Reader Service Number: 127

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Getting back to the question of Relative Level, I feel that overall equalisation of the program and the placement of sounds within that program are more important to the perception of loudness than level meters hitting '0' and staying there.'

PRO TALK! RELATIVE LEVEL

• **Dave Tozer** from **Crystal Clear Studios** (NSW) said: 'Maintaining consistency to tape on a full, drum mic-up is difficult, you are basically at the mercy of the drummer, however by using compressors over the kick and snare you can at least maintain some consistency and avoid clipping by the "limiting" of "smoothing". The compressor is essential in trying to record consistently to tape whether it's vocals, sax, guitar or bass. They all need to be "controlled" (to some extent) to maintain a consistent dynamic range and avoid unwanted highs or clipping of levels going to tape. I prefer to go 'hot' to tape but not allowing it to distort. The rough rule is: the higher the level to tape the lower the signal to noise; the stronger the signal to tape the better it is for mixing. A strong signal will avoid the use of the desk channel gain to boost level which can often add desk noise to the mix.'

Audio Level Variance: Thoughts from a Replicator

As a replication and audio practitioner **Andrew Host** from **CD Makers** is in a unique postion to comment on the general state of mastering levels: he should know, he receives a wide range of master tapes.

'I mix audio, some of which is destined for TV, some for radio, and some for CD.' He says, 'The problem is working out where to set 0 dB reference level. Some people have said that 0 dB tone on a VU meter should be at -12 dB on a peak program meter — I nearly always find that doesn't leave enough headroom.

When Sony brought out the PCM501 digital encoders they suggested that 0 dB should be at -15 dB PPM. Now, with Digital Betacam being a standard in video production these machines mark 0dB VU at -20 dB PPM!. Engineers who are used to mixing hot are finding that video production houses are complaining that levels are way too high yet on the other hand, DATs of jingles used for TV (therefore at reference level -20 dB) are being supplied for CD mastering, with sometimes up to 10 dB of headroom. That's less than half the volume that a CD should be (using fewer than 14 of the 16 bits available)! Of course, these DATs can't be transferred directly to CD and must be gained using a digital mixer or workstation.

Short of insisting that everyone do two mixes, (one as hot as possible, and the other with reference level at -20), I can't imagine what the solution could be.'

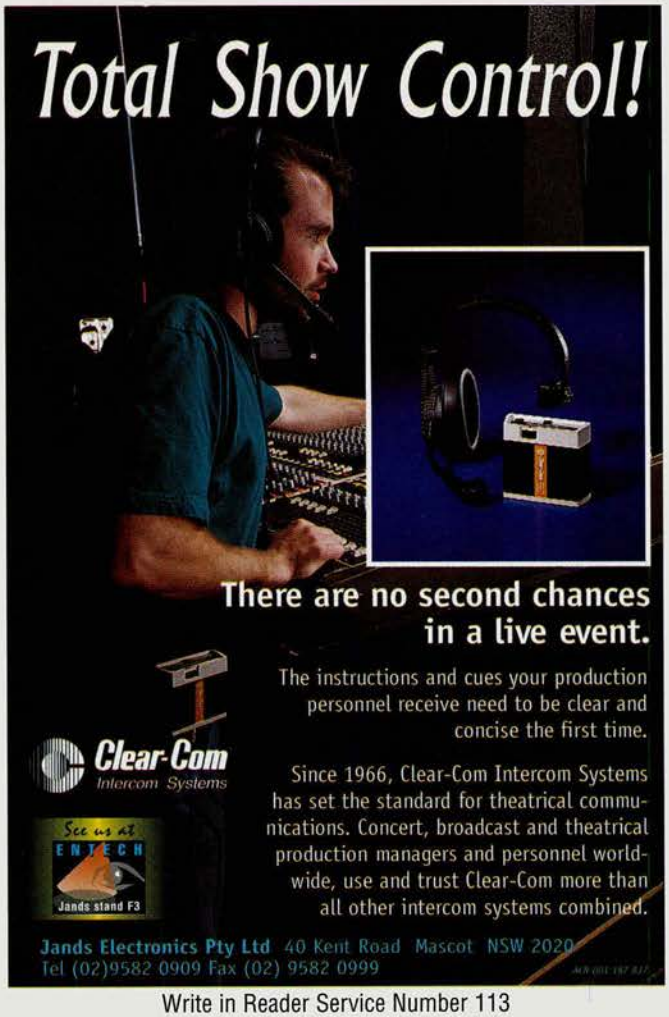
Mr Host also provided the following definitions gleaned from the Shure Brothers web site:

Volume Unit, or VU meters show the average sound level, closely corresponding to the level sensing mechanism of the human ear. However, it doesn't give an accurate indication of peak signal levels.

Peak Program Meters, or PPM show all the peaks but don't give an indication of apparent loudness. The ballistic differences are: It takes 300 milliseconds for a VU meter to stabilise, but only 10 milliseconds for a PPM. Not all meters labelled VU or PPM necessarily meet the required standard.

Check out the site yourself at: **http://www.shure.com/appmeter.html**

• **CD Makers** at Tiger, T (02) 9922 4700
email: a-host@geocities.com



Write in Reader Service Number 113



Philmsound (from page 12)

can't wait for the next magazine to come out. "I love where it's all going," he says. "It's just getting more and more exciting. It is a bit scary because it's almost to the point where the hardware and software replaces some of the skills I spent 30 years learning. But that's evolution, I suppose."

Judd says with some pride, "This room was set up as a sound designer's ideal workshop, from a designing, editing and laying point of view. You can bend and manipulate sound in here better than any other place in this country, if not possibly the world. You can do almost anything, including being able to monitor in 6 track surround. This room was used by the sound designer on *Idiot Box* to come up with a lot of the concepts. He could try out his ideas, before he got into the mixing theatre, which is too expensive to experiment in.

"This room is a new concept. I've never been one to follow trends, I always set them. This is a mixing room for TV, but not for film. But it's a good place to prepare for a film mix, to do a lot of the nitty gritty dirty work, like cleaning up dialogue. Or experimenting with positioning things left to right, or multiple layers. A few years ago, sound editors could only lay up and listen to one sound at a time. Now you make sound effects using ten elements to make one big sound. When good sounds happen, it's usually a combination of a whole lot of things together. In a place like this, people can experiment and fine tune. When you get to the mixing theatre, you're more focused, and can spend the time getting on with the creative balance."

> *When good sounds happen, it's usually a combination of a whole lot of things together.*

Judd has a DBX sub harmonic synthesiser, which makes lots of good bass. He has Orban parametric equalisers. "I've had this for years and years. I always used to take them with me when I was a freelance mixer, because most of the places didn't have enough outboard gear."

He has a Cat43, Dolby background noise reduction system, designed for film. "It's been a helpful tool, to reduce traffic noise, and things like that."

The speakers are Alesis, but what really interests Judd is his software. "Most of the gear," he says, pointing to his computer, "is all hiding in here. Here is a compressor, but it's a multifunctional one with a library of things I can call up that are already built into it. I can store settings, and do a massive amount of things with it.

"Now I upgrade my tools by buying software, instead of a big box. It goes in as a (ProTools) plug-in. Here is a fully automated mixer. I like being able to see the visual representation of the sounds. That is a great tool."

He calls up intelligent noise reduction. "You sample in the background noise you have to deal with. It analyses the frequencies of that noise, and then you fit an appropriate noise reduction curve to it."

There are digital limiters. "The digital gear works so much better, in value for money. And third party manufacturers are supplying all different bits of plug in. It's great, because it's upgradable." He shows me part of the menu. Band pass filters, comb filters, delays, equalisers, doppler effect, pitch changes, delay lines, a full phase meter spectrum analyser, reverb, and much more.

There is a tool for fitting post sync dialogue which can stretch or compress dialogue without changing pitch. "That is diminishing the skills of many dialogue editors who have learnt over their entire life.

"These things used to be separate boxes, which cost thousands of dollars, until recently. This is where the rules have changed because you can't see all the equipment anymore. You can just keep expanding and expanding. I've spent a small fortune on this place. And I try and keep up."

6 channel digital

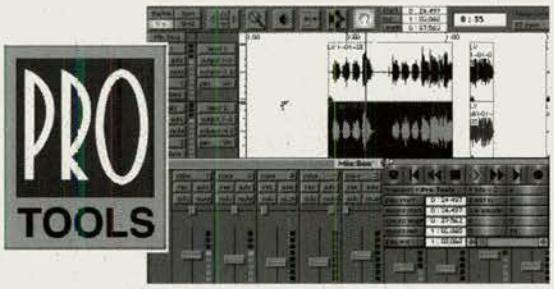
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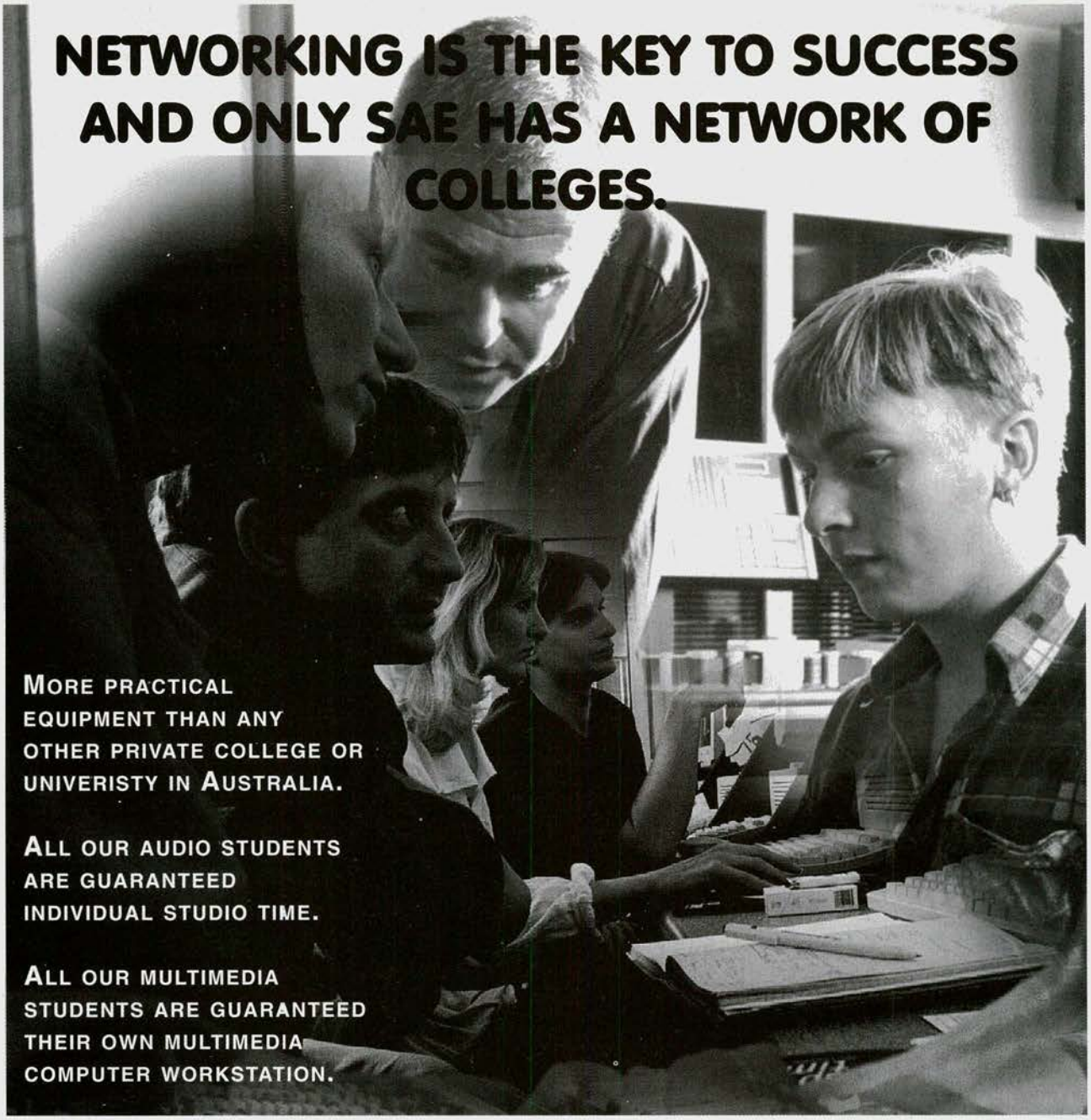
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Write in Reader Service Number: 141

Philmsound (from previous page)

as Dolby Stereo did. Three forms of digital formats are out at the moment. Dolby SRD, a 6 channel format. DTS, 6 channel, and SDDS, the 8 channel format.

Within the 6 channels, 3 are behind the screen, as in left, centre, right. Then there's left surrounds (rear), and right surrounds (rear), which are two separate channels, and finally the 6th is the subwoofer output.

This is all digital quality, so there is full bandwidth, and full dynamic range available, all in discreet channels. "Dolby Stereo, in its 4 channel mode, is not discreet, by any means, because it's coming off two channels of optical, off the film," Judd says.

"That optical channel, carrying the Dolby Stereo, is a system that was designed in the 1890's. It's being pushed to the limit to even reproduce four channels of sound to the quality it does these days. So digital was a great step forward, to be able to deliver sound power and quality. And *Idiot Box* has got a lot of that power, a lot of individual movement amongst those speakers, and making use of the system.

"Mixing for 6 channels adds difficulties. First, there are more tracks, obviously, so there is a 30% increase in the amount of sound needed to fill the speakers. So we need more time to lay tracks, and to mix them. Then there is more pressure to get everything right. You can't hide anything, when you've got full range.

"The old days of mono optical tracks only had a top end response of 8 kHz. A bit of hiss and noise, and background problems would get masked pretty well, just by sandwiching everything together, coming out of one speaker source. You could get away with a lot. Now you can't. If you have a single bird chirping on a right speaker all by itself, and it has the slightest bit of background noise that cuts in and out, you hear it. It has to be pristine, and worked on much more."

In the old days of mono optical tracks a bit of hiss and noise, and background problems would get masked pretty well, just by sandwiching everything together, coming out of one speaker source. You could get away with a lot. Now you can't

Sound track

"Most people, even in the film industry, don't understand what goes into making a sound track, and how complex it really is. Nobody ever notices a lot of my best work, and that's how it should be. The sound track should be telling a story, washing over and enhancing the image. You've got more emotional pull than the image a lot of the time. And you can leave the screen. The image stops at the edge of the screen, whereas sound goes beyond it, and can surround the audience. Plus you're dealing with two senses, hearing and touch. Because you can *feel* sound, when you get into moving a lot of air, vibrating and rattling."

A scene in *Fearless* shows the problems and detail the sound team has to deal with. A man is walking across a highway. "From the sound effects point of view, forgettting the dialogue and everything else, you've got cars whizzing, coming through the frame, with lots of cuts, very quickly. So you can't just take sync sound. All the car whizzes have to be manufactured, that's maybe 200 cars. And you need the sounds of different makes of cars, not just the same one. Then from a mixing point of view, they all have to be panned. *The Navigator* had another huge highway scene. You have to be very deft, and fast on the board. It's hours and hours of mixing just getting those cars right.

"Action movies are a nightmare for sound. In battle sequences, every single gun shot and explosion has to be individually laid up, and mixed. It's very fiddly, lots of hours spent doing one sequence."

Way back then

Judd started in radio, then moved into film when he was 19, on the *Skippy* series. That was the good old days, when there was no training or film school. You got a job, and learned how to do everything as you went along. Equipment was limited, and basic. They had just released the Nagra 4, long shotgun mics were a new concept. Most gear was made either for the music or broadcast, rather than film. "Most people use DAT recorders now. They may use Nagras as backup, or as doorstops," Judd laughs. "At the time I bought my first Nagra 4, it was about six months pay."

On *Skippy*, Judd was doing the studio end of transfers, he was the maintenance man, the second unit sound recordist, the standby boom swinger. Even the camera and editing department used to ask him to fix their equipment. "I'd say Sure!, get a screwdriver, and pull it apart. You had to learn as you went, and make all the rules up as you went along. So I'm lucky, because I've worked in every single department and film sound that you can do. I've got that broad knowledge of it all."

From *Skippy*, Judd went onto Artransa, and sound mixing. His first feature film, a few months later was *The Adventures of Barry McKenzie*. "Sound then, compared to today, was so much simpler. Everything was mono, you didn't have the complexities of tracks, nor the technical demands of 4 channel and 6 channel digital sound. The Barry McKenzie film had a total of 6 tracks. By today's standards, that's ludicrous. Now you're lucky if you get less than 106 tracks. The whole industry has grown enormously, and I've grown with it."

In those days, there were only two feature film mixers, Judd and Peter Fenton. Judd moved on to Atlab, where he ran the sound department. He did commercials, documentaries, sound recording, optical sound transfers, purchases, price structuring. He went freelance, and mixed *Priscilla, Green Card, Dead Poets Society, Strictly Ballroom, The Navigator, Dead Calm,* and many more. Last year, he did *Idiot Box*, on 6 track digital. The sound track is rumoured to be amazing, and brashly dynamic.

-Madeline Murray

KISS MUSIC KICKS

As the local and international recording industry should know by now, KISS MUSIC Recording Studios have taken over the former Platinum Studios in Chapel Street, South Yarra, Melbourne and are open (well and truly) for business.

The same studios, now KISS, have been a premier music recording and mixing facility for a range of successful Australian and international recording artists over the years from *Tears for Fears* back in the eighties to *Crowded House* in the nineties.

'For over two decades, Platinum Studios was clearly one of the finest studios in Australia,' said Paul Kosky, KISS MUSIC General Manager and Senior Producer/Engineer. He continues, 'It is our intention to continue the success and that's why KISS MUSIC has redesigned the studios and upgraded its recording equipment: we feel it's important to keep up with forever changing music recording needs.'

Some of the changes that KISS MUSIC have implemented all position the studio for the future, with some tasteful additions,

'The original glass live room has been re-shaped, lined from floor to ceiling with coloured concrete complemented by

(continued over)

BASF National Tracking Guide

New South Wales

ARTIST	PRODUCER	ENGINEER	PROJECT
A#Sharp Jeff Cripps (02) 9534 4440. 24 Track 1"			
Brad Fury	Jeff Cripps	Jeff Cripps	CD
John NG	John NG	Jeff Cripps	Christian CD
Cho-Cho-Cha Boogie	Band	Jeff Cripps	Demo
Heroes From Heaven	Jeff Cripps	Jeff Cripps	CD Tracking
Aphek Studio Greg Dixon (02) 9876 8170. 16 Tracks 1" analogue			
Conspiracy Theory	Greg Dixon/Doug Williams	Greg Dixon	Album
Soul Revival	Stuart Crawshaw	Greg Dixon	Album
Robin McInnes	Greg Dixon/Chris West	Greg Dixon	Demo
Cyan Brass	Avra	Grag Dixon	Demos
Charing Cross Studio David Sykes (02) 9387 8362. Quality Analogue - Neve/Studer			
Ben Nightingale	Greg Wales	Greg Wales	Abum Track & Mix
Hummer	Jordan Bach/Band	Jordan Bach/Craig Beck	Album Track & Mix
Spoon	Wayne Connelly	Wayne Connelly	Album Track & Mix
Dirtbone	Peter Jones/Band	Peter Jones	Album Track & Mix
Fur	Rob Younger	Lachlin McGoo	Album Track & Mix
Sidewinder	Paul McKercher	Paul McKercher	
Crystal Clear Studios Dave Tozer (02) 9684 1152. 24 Tk. Dig. Adats, 32 Ch. (66input) Console			
Atlantic Slide	Dave Tozer/Band	Dave Tozer	Demos
Helen & The Groove Doctor	Dave Tozer/Band	Dave Tozer	Demos
Superfly	Dave Tozer/Band	Dave Tozer	Demos
Zimsutton	Dave Tozer/Band	Dave Tozer	EP
Damian Commane	Dave Tozer/Damian	Dave Tozer	Demos
7" Singles	Dave Tozer/Band	Dave Tozer	Demos
Cloud Studios Parris Macleod (043) 532 429. 24 Track Automated 2". 32 Track Digital			
The Screeming Jets	Steve James	Steve James/Parris Macleod	Album
Damien Gerard Studios Contact Marshall (02) 9660-8776. 2" 24 Trk.,1/2" 16, 32 Trk.			
Peabody	Bruno	Russel Pilling	EP
Molly Rasher	Keith	Russel Pilling	EP
Jim Reece	Colin Wilson	Marshall Cullen	Ambient Album
Liquid	Steve	Russel Pilling	EP
Spilt Milk	Marty/Matt	Konrad	EP
Drawback	Scott	Scott/Kirstyn	EP
Darling Harbour Studios Ike (02) 9211 1474. 24 Track MCI 40 Channel Desk			
Gilligan	Band	Adam McQillan	Demo FBI Radio
DC10	Band	Sucka Fish	Single
Jason	Band	Sucka Fish	2 Tracks Compilation Album
Gods Little Project	Matt	Sucka Fish	EP
The Max Factor	Band	Sucka Fish	Demos
David Hinds Recording Studios David Hinds (065) 811 235. 8 16 Tracks Tascam DA-88 & Yamaha OZR Console			
Balance	David & Lyn Hinds	David & Lyn Hinds	Album Tracks
Festival Mastering Cathering Knapman (02) 9395 8070 Sonic Solutions			
Shield	Dave Smith/Leith Pinney	William Owden	Edit Single
Sherbet	Garth Porter/Sherbert	William Owden	Re-Mastering Album
Silverchair	Paul Mac	William Owden	"Freak" Remix
Dumpster		William Owden	EP
Renaissance Players	Guy Dickerson	William Owden	3-CD Set
Peabody		William Owden	EP
Festival Studio Catherine Knapman (02) 9395 8070. MCI or Studer Analogue or Mitsubishi Digital Multi-Track			
Mental as Anything	Band/Mark Thomas	Mark Thomas	Album Recording
Joe Couler	Ray Martin Show	Matt Lovell	Ch 9/Ray Martin TV Interview
Robyn Archer	Paul Grabowski	Mark Thomas	Tracking
Col Joye		Matt Lovell	Tape Transfers
JMF Sound Studio Fran Esther (02) 9790 4097 . 24 Track, Digital Mastering, one off CD & Rehersal			
Mr James	Band	Meli/Esther	CD Album
Black Label	Band	Gandiaga/Esther	CD Tracks
Marius	Ralf Esther	Ralf Esther	CD Album
Megaphon & Airmotion Studios Guy Dickerson (02) 9550 6576. 24 Track Analogue, Lock To Picture			
Wendy Matthews	Glenn Skinner	Tony Espie	Album
Stevie Wishart	Chris Abrahams	Shane Fahey	Album
Floyd Vincent		Guy Dickerson	Album
Trapazoid	Creative Vibes	Fraser Stuart	Album
Mirage Gerry Nixon (02) 9211 3915 Mixdown Studio			
Kulcha	Matt O'Conor	Karim Siai	Album Mix
Zena Bengeman	Russel Dunlop	Hyunsun Park	Album Record
Powderfinger	Tim Whiton	Tim Whiton	Live Mix (Opera House)
McDonalds	John Gillaro	Gerry Nixon	Commercials
Greg Johnson	Jeremy Allom	Jeremy Allom	Album Mix
Billy Thorpe	Billy Thorpe	Greg Clark	Album Mix
Nu-town Greg Hopping (02) 3516 3306. 16 Track Analogue, 16 Track Digital			
Ultra Love Machine	Greg Hopping/Darra	Mark Worrall	Single
Faith	Greg Hopping/Darra	Mark Worrall	Single
Shield	Greg Hopping/Kyle Nevin	Mark Worrall	Single
Atlas	Greg Hopping	Mark Worrall	Single
Tina Harrod	Kyle Nevin/Greg Hopping	Mark Worrall	Single
Gold Rush	Paul Buckman	Mark Worrall	Album
Paradise Studios Jason Lea (02) 9357 1599. Custom Mixer, 24 Track Studer A800, Valve Outboard			
Soul Kitchen	Brad Grimes	Mike Stavron	EP
Soundtrack	Michael Hegerty	Brendan Moy	ARL Theme
Outback Adventures	Garth Porter	Ted Howard	TV Series
Mitchell Shadlow	Colin Watson	Ted Howard	Tracking
Halpin & Kaley	Brian White	Jason Lea	Re-Mix
The Wash	Band/Stavron	Mike Stavron	Mixing
Powerhouse Studios Doug Henderson (02) 9318 1220. 32 Input Neve Console 24 Trk.Studer A800			
Big Electric Cat	Band	Russell Pilling	CD Album
PSI-Kore	Band	Gavin Dutfield	Album CD
Munk	L.Berger & D.Henderson	Doug Henderson	CD Single
Pounderhound	Band	Russell Pilling	CD Album
Candlewood	Band	Doug Henderson	CD Album
Spinifex	Band	Shane Hale	CD EP
Q Recording Studios Gordon (02) 9212 4851 234 Track, Pro-Tool etc			
Monday Night Football	SWANEE	Richard Muecke	Ch9 Ad
Sidewinder	Paul McKercher	Paul/Dave Trump	Single Album
Finiscad	Tim Whitton	Tim Whitton	Album
Aunt Jennifers Tigers	Rick O'Neill	Rick O'Neill	EP
Native Fear	Band	Warwick Buzacott	EP
Dumpster	Grant	Dave Trump	EP
R & R Recordings Robert Zimola (02) 9672 4494. 16 Track 1" Format			
Kerrie MC	Mike Kerrin	Robert Zimola	Album for CJJM
David Cazalet		Robert Zimola	Compilation Album
Rockinghorse Recording Studios Grant Hilton (066) 884 131. 32 Track Neve, 48 U Series			
Grinspoon	Phil McKellar	Assisting Greg Courtney	Album
The Mavis's	Kalju Tonuma	Will Burston	Album
Dr DJ	Keith Williams	Keith Williams	Demos
Diana Ahnaio	Keith Williams	Keith Williams	Album
Sony Music Studios Ross Ahern (02) 9332 0320. 24 Track/Pro Tools			
Lodestar	Tim Whitten	Tim Whitten	Album
Human Nature	Paul Begaud	Simon Tonx	CD Tracks
Mojo Watson	Mojo Watson	Tod Deeley	CD Tracks
Little Yak	Simon Tonx	Simon Tonx	CD Tracks
Hughie Murray	Paul Gray	Simon Tonx	CD Tracks
NRG	Steve Suiter	Simon Tonx	CD Tracks
Sound Level Studios John Soane (02) 9552 3200. 16 Track Digital/Live to Dat			
Def FX	Def FX	Jason Blackwell	Demos
Darren Fenton	Darren Fenton		Demos/Dubbing
Leisure Society	Jackie Wood	Jorden Brebach	Live to Dat Demo
Stacy Testro Int.	John Soane	John Soane	Voice Over Sampler CD
Paul Verma	Paul Verma	John Soane	Drum Demo
Rusty Romeos	Tim Flemming	John David	Retrocompilation CD Demo
Soundwarp Meredith Brooks (02) 9905 7144. Mastering			
Bernie Lynch	Bernie Lynch	Meredith Brooks	Paris Fashion Show '97
The Wash	Michael Stavron/Band	Meredith Brooks	
CD EP			
Wounded Not Dead	Guy Newton	Meredith Brooks	CD Album
Killing the Ritual	Pablo Fernandez	Meredith Brooks	CD EP
Carlo	Carlo/Merideth	Meredith Brooks	Soundtrack
Testament	Michael Cullin	Meredith Brooks	CD EP
Studios 301 Fiona Simpson (02) 9211 7301. X880, Studer A800, SSL 64 Ch, G-Series			
Grinspoon	Philip McKellar	Philip McKellar	Vocal Overdub for Album
Silverchair	Nick Launay	Nick Launay	Re-mixes
Sidewinder	Paul McKercher	Paul McKercher	Mixes
Woolly Mammoth Mark Paisley (02) 9557 2721. 16/24 Track Digital, Quality Affordable Recordings			
Mockingbird	Mockingbird	N.Sanning/M.Paisley	Album
Oyster Circus	Band/N.Sanning	N.Sanning/J.Green	Demos
Quick & The Dead	Band	N.Sanning	Single
Not for You	Band	N.Sanning	Single
Barry Meston	B.Meston	N.Sanning	Demos
Up Productions Chris McCusker. (063) 373 572			
The Robinson Bros	Chris McCusker	Chris McCusker	4 Track Ed
Velvet Sound Recording Studios Dave McCunn (02) 9283 5968			
SPDFGH	Band	Darren Atkinson	Tracking
Theme Park	"The Gift"	Tony Wall	Tracking
Cactus Child	Band/Craig	Craig Porteils	Re-Mixes
Aural Fix	Band	Frank Kerestedshjian	Mixing
Cola	Band	Tony Wall	Mixing
Andy 500	Band	Tony Wall	Mixing

Queensland

ARTIST	PRODUCER	ENGINEER	PROJECT
Digital Paradise Ian Peters (07) 5527 0722 . 32 Track Digital			
Dr Gerry Flynn	Gerry Flynn	Ian Peters	Self Hypnosis & Relaxation Tapes
Ruth Gurner	Ruth Gurner/Ian	Ian Peters	Ozzie Theme Show
Lee Conway	Lee Conway	Ian Peters	Jingles for Radio
Various	Mike Taylor	Ian Peters	Amway Motivational Tapes
Maggie Britton	Maggie Britton	Ian Peters	Demos
Cinema	Cinema/Ian Peters	Ian Peters	6 Song Demo CD
OPM Studios Daniel Seymour (07) 3374 1668. 8, 16, 24 Tk. Digital Recording			
Purple Avengers	Daniel/Band	Daniel Seymour	Album
Hekawis	Daniel	Daniel Seymour	Album
Detox	Daniel	Daniel Seymour	Demos
Nutmeg	Tony Childs	Tony Childs	Demos
Brad Horwood	Daniel	Daniel Seymour	Album
Kundelini	Daniel/Band	Daniel	Demo
Prodigious Audio Richard or Mark (07) 5571 1400. Digital Tape & H.D. Analogue & Digital Mixers			
Untouchables	Mark Munro/Band	Mark Munro	Album
Tivoli	Richard/Client	Mark Munro	Theatre Prod
DJ Obey	Mark/Obey	Mark Munro	Re-Mixes
Video Production	T.W.M.	Mark Munro	Voice Over
Video Production	T.W.M.	Mark Munro	Music Tracks
Video Production	T.W.M.	Mark Munro	Mix to Picture
Suite 16 Murray Lions (07) 3369 9733. 24Track 2 ", 8trk digitals & P.Tools			
Aim 4 More	Garry Smith	David Champion	Album
Miles from Nowhere	Boi	David Champion	EP
Kirfue	Kirfue	David/Leon Prescott	EP
Dan Vogler	Dan Vogler	David/Julian Lynch	Album
Ross Lovell	Ross Lovell	Julian Lynch	Album
Vandersound Studios Eric Vandersande (07) 5546 8100. 24 Trk. ADAT/XT, HDR, 02R, CD-R			
Jacob	Eric Vandersande	Eric Vandersande	Album Mix & Master CDR
Grain	Eric/Band	Eric Vandersande	Album Mix
Scott Patterson	Eric Vandersande	Eric Vandersande	Album Tracking
Bay FM	Eric/Chris Benton	Eric/Chris Benton	Radio Special
Not the Messiah	Eric/Andrew Hines	Andrew Hines	Remix
Marylin Smallwood	Eric/Marylin	Marylin Smallwood	Demo

BASF YOUR MUSIC IS SAFE WITH US


Chess Winters, MD of Kiss

movable walls, enabling you to adjust it's unique live reflections to your desire. It is the first of it's kind in the world. In the main recording space a parquetry stage has been built and we now have four separate and unique recording areas in the one room, designed with live recording in mind.

'Aesthetically we have used artificial fur fabrics, raw steel metals, the occasional distorted mirror and an elaborate coloured lighting system throughout.' he says.

According to Mr Kosky the control room has new acoustic treatment including new Quested monitoring (supported by concrete pillars) which are powered by 2200 watts of Amcron amplifiers.

'We have done extensive rewiring and new 'wing like' FX racks glide out of the side back walls, giving you easy access and the feeling of space.'

Other goodies added to the facility include a Fairlight MFX 3 - 24 track hard disk workstation in the dedicated post room. This makes for versatile recording options alongside 48 tracks of Sony digital and 48 tracks of 2" analogue. Recording power is complemented by an upgraded and modified SSL console and a diverse array of Fx/signal processors and valve and specialist mics.

Paul Kosky outlined the idea behind some of the redesigns and equipment upgrades.

'We have one of the most powerful music recording facilities in the world, combining a Sony 48 track digital tape machine with a Fairlight MFX3 hard disk recorder mixed with a modified SSL Board and a G-Series computer. That means you can edit, stretch and manipulate anything at any time digitally while on separate tracks.

'Our Otari and Studer analogue tape machines with 46 tracks of Dolby SR are also available for those wishing to remain in the analogue domain. The studios have gone through major renovations both aesthetically and sonically for instance, our new concrete live room with moving walls is awesome along with the rewired and redesigned control room.'

Another key person at KISS is Chess Winters, Managing Director of the Kiss Corporation and she is interested in the prospect of combining other aspects of the Kiss Corporation with the new music studios. She further elaborates the point,

'Our fully equipped broadcast TV production suites with high end Silicon Graphics digital technology can also shoot, edit and create special effects for video clips.' She said.

Other staff include Andy Baldwin who is part of a full-time technical support and engineering team. Paul Kosky continues,

'Andy is a former engineer at Metropolis Audio and has joined the production team at KISS as the in-house engineer. He has a professional and relaxed approach to working with both artists and producers which has made Andy one of the hottest engineers in Australia.'

• KISS MUSIC
Recording Studios,
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BASF National Tracking Guide

South Australia

ARTIST	PRODUCER	ENGINEER	PROJECT
Agro Fish Studios Andrew Bayfield (08) 8223 7211. 24 Track Video Sync, Hard disk recording, midi & Computer Mixdown			
The Music Shop	Wilson Maine	Andrew Bayfield	Television Show for Children
Omegatrends	Rob Pippan	Andrew Bayfield	Anthem for National Convention
Derek Charles	Derek Charles	Andrew/Steve Fieldhouse	Demo
"the fridge" Nigel Sweeting (08) 8231 3588. 16 Track Digital, full Automation			
Don Morrisson	Don Morrisson	Nigel Sweeting	CD
Lump Sucker	Band/Beak	Nigel Sweeting	CD
Akhtar	Akhtar/Beak	Nigel Sweeting	CD Remix
John Reynolds Recording (Nick Love Productions) Nick Love (08) 8410 3044 Trk.Dig.Recordings			
Adult Teys (Former Zep Boys)	Ray Axisa	Nick Love/Eddi Sikorski	CD Single
Stolen Waters	Band/Nick Love	Louis Pavayioton/Nick	CD Single
Captain Pyjama	Band/Louis Pavayioton	Louis/Nick	CD Album
Ken Doll Elloit	Nick Love/George Arab	Nick Love	CD Album
Krystapinzch	Eddie Sikorski	Eddie Sikorski	CD Album
White Colour Carousele	Eddie/Nick	Eddie/Nick	CD Album
Mixmasters Productions Mick Wordley (018) 822 986			
Borderers	Jim Patterson	Mick Wordley	Album Mix
Steve Boyd & The Preachers	Kerryn Tolhurst	Mick Worldley	Album Mix
Midget	Matt Maddock/Steve Foster	Matt/Steve	Album Tracking
Runt	Band	Steve Fieldhouse	EP
Loaded Zilla	Band	Evan James	Album Mix
Greg Baker	Greg Baker	Steve Fieldhouse	Album
The ATD Master Suite Al Sankauskas (08) 8212 7111. Digital/Analogue Mastering Suite/Facility			
Colcannon	Mark Kraus	Al Sankauskas	CD Mastering
Kroak	Frank Parini	Al Sankauskas	CD Mastering
Backbeat	Andrew Clermont	Al Sankauskas	CD Mastering
Boss Rhind	Gary	Al Sankauskas	CD Mastering
Miss Otis Regrets	Ross Mayne	Al Sankauskas	CD Mastering
Max	Max Fredericks	Al Sankauskas	CD Mastering

Victoria

ARTIST	PRODUCER	ENGINEER	PROJECT
Apollo Sound Studios Ernie (03) 9354 9058 24-Track Analogue			
Spine of God	Marylin Mason	Ernie	Re-mixes
H-Block	Ernie/Band	Ernie	Album Record/Mix
Vicious Circle	Ernie/Band	Ernie	Split 7" Record/Mix
Tuff Muff	Ernie	Ernie	Tracks for R'N'R High Compilation
Snubrocket	Ernie/Band	Ernie	Pre Prod
Wallscape Paperlounge	Ernie/Band	Ernie	Mix Album Tracks
Back Beach Recordings Mark Rachelle (059) 886 948			
Alchemist	R.Norton	R.Norton/Rachelle	Remixes
Bellicose	Rachelle	Rachelle	Single
Vauxdvihl	Rachelle/Band	Rachelle	EP
Lone Wolf	Band	Rachelle	Re-mix
Big Beat/Equinox Studios John "Shadow" Toth (03) 9898 5815. 16 Tk. Analog, 8 Digital 32 Channel Auto			
Sinker	Band	JohnToth/Dave Borgeest	Demo
C.O.D.	Band/Toth	Ben Williams	C.D. Mastering
Dave Close	Toth/Borgeest	Dave Borgeest	Demo
Abominator	Band/Big Beat	Toth/Williams/Boorgeest	Demo
Stainless Steve	Steve	Ben Williams	Demo
Simon Johnson	Simon	Ben Williams	Demo
C'est Ca A/V Services Norman James (03) 9419 1506. 24 Track Digital			
Gillian	Norman Jones	Genn Coath	Album Tracks
Various	Girl Zone Records	Genn Coath	Girl Zone 3 Album
W.O.O.F.	Norman Jones	N.Jones/D.Dale	Movie Soundtrack

ARTIST	PRODUCER	ENGINEER	PROJECT
Crystal Mastering John Ruberto (03) 9326 2318 CD Mastering			
Even	Band	John Ruberto	Mastering EP
Humbug	Chris Dickie/Band	Joseph Carra	Mastering EP
Gorazd	Band	Joseph Carra	Mastering Album
Claymen	Band	John Ruberto	Mastering
Oscarlima	Band	John Ruberto	Mastering
Various	Gary McKenzie	John Ruberto	Compilation CD
Edensound Productions Martin Pullan (03) 9429 6199, 0418 545 948. Mastering, Digital Editing			
Burst	Band/Michael Letho	Martin Pullan	Single
Celtic City Sons	Band/Graeme Fraser	Martin Pullan	Album
Creature Seed	Simon Segal	Martin Pullan	Single
Horsehead	Band	Martin Pullan	Single
Tom Fitzgerald	Tom Fitzgerald	Martin Pullan	Moomba River Spectacular
Youth Alive	Steve Smith	Martin Pullan	Single
Fortissimo Andy/Sarah (03) 9699 5811. 24 Track 2" Analogue Automation			
Penelope Swales	Penelope Swales	Siri Metsar	Album
Vika & Linda Bull	Graham Lee	Andy Parsons	Compilation Album
Copping Music	Chris Copping	Adam Quaife	Advertising
Carbine	Caroline/John Watson	John Watson	Demos
Jim Keays	Jim Keays	Adam Quaife	Brisbane Lions Theme
Lano & Woodley	Mal Webb	Siiri Metsar	T.V. Theme
Kiss Music Recording Studios Paul Kosky (03) 9827 1500. SSL Console, 48 Trk. Digital			
Paul Kelly	'Evil' Graeme Lee	Simon Polinski	Single
Dirty 3/Dave Graney	Dave/Band	Andy Baldwyn	Single
Tex Perkins	'Evil' Graeme Lee	Simon Polinski	Single
Yothu Yindi	Lamar Louder	Lamar	Remix
T.I.S.M.	Band	Lawrence Maddy	Single
Quarter to Nine	Andy Baldwyn	Andy Balwyn	Single
Newmarket Studios Ben Hurt (03) 9329 2877. 24 Track			
The Killjoys		Craig Pilkington	Mixing New Album
Volition		Ben Hurt	Debut CD Album
Biscuit		Ben Hurt	Album
Alex Burn & Nick Charles		Ben Hurt	
Jade Hurley		Ben Hurt	CD Mastering
Little Murders		Ben Hurt	CD Mastering
S.A.E. Technology College Michael Pollard (03) 9534 4403. 24 Trk 2" Pro Tools, Digital Editing			
Up Sandwich	Michael	Michael Pollard	"Live" Demo
Seed Studios David Warner/Tim Johnston (03) 9682 8488. 24 Track			
The Waifs	Band	Tim Johnston	Singles
The Distillers	Tim Armstrong	Tim Johnston	Singles
Hard Road	Kieren Tolhurst	Tim Johnston	EP
Horsehead	Ken McKenzie	Tim Johnston	Demos
Rock'n'Roll Babes	Linda Jaivin	Gordon Wood	Album
Orson Wells	Band	Tim Johnston	Demos
Sing Sing Phil or Kay (03) 9428 4622 SSL, Neve 24/48 Track Dig. & Analogue			
Wendy Matthews	Glen Skinner	Glen & Tony Espie	Album Mix
Debra Byrne		Ross Cockle	Album Mix
Nick Cave & The Bad Seeds	Flood	Flood	Album Mix
Midnight Oil	Lachlan McGoo/Band	Lachlan McGoo	Album
Jimmy Barnes	Charles Fisher	Julian Mendleson	Single
Mick Harvey		Tony Coohen	Album Mix

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ARTIST	PRODUCER	ENGINEER	PROJECT
Sound Around Trevor.J.Cronin (03) 9531 3891.Mobile Sound Studio. 2 New Sure Beta Microphones			
Radio Birdman	Michael Letho	T.Cronin	Live Recordings
Truck	Michael Letho	T.Cronin	Live CD
Mirth	Michael Letho	T.Cronin	Live CD
Groundswell	Michael Letho	T.Cronin	Live CD
Trigger	Michael Letho	T.Cronin	Live CD
Snowblind	Michael Letho	T.Cronin	Live CD
Augie March	Michael Letho	T.Crionin	Live CD
Studio 52 Paul Higgins (03) 9417 7707. Studio A - 32 Tk. Studio B Adat 16 Tk			
Geoff Achison	Trevor Carter	Trevor Carter	Track for CD
Dutch Tilders	Barry Hills	Trevor Carter	Track for CD
Andy Cowan	Barry Hills	Trevor Carter	Track for CD
Midnight Special	Barry Hills	Trevor Carter	Track for CD
Scott Michaelson	Wil Conyers	Trevor Carter	Demo for English Label
Supremacy	Trevor Carter	Trevor Carter	Album in Production
Troy Horse Micky Levis (02) 9319 1799. 24 Track/Tactile Console			
78 Saarb	Dan Griffin	Dan Griffin	EP
The Wiggles	Chris Brooks	Chris Brooks	Soundtrack
Tex Perkins	FBI Radio	Colin Wright	Mixing LIve Gig
Kinder Schmerzen	Band	Colin Wright	EP
Sugarkane	Edwin Collins	Mike Stavrou	EP
Small Handgun	Boogs Stinger	Slash Gash Maria	Concept Album
Wombat Road Studio Barrie Clissold (03) 5145 4204. 16 Tk. Digital, 16 Tk. Analogue			
Mamatoto	Group	Barrie Clissold	Demo Tracks
Swollen Seeds	Band	Barrie Clissold	Demo Tracks
R.Froomes	R.Froomes	Barrie Clissold	Poetry Reading
Tim Borella	T.Borella	Barrie Clissold	Demo Tracks
Flesh Puppets	S.Riley/Band	Barrie Clissold	Demo Tape
Big Head Little Body	B.Baker	Barrie Clissold	Demo Tracks

Western Australia

Planet Studios John Villani (09) 382 2211. 48 Track Dash-32 Pro Dig. 24 Track An.			
Kim McCarthy	Vance Burrows	Les WIlliams	Album-Mix
Craig Hardie	C.H.Q.L.W.	Les Williams	Album-Tracking
Oz-Connection	John/Band	John Villani	Album-Tracking
Pee-Jay	John/Peter J	John Villani	Album-Tracking
Kanjio-Choshi	Kimio Mizutani	Matsumoto/Villani	Album
Sonny Morgan	Sonny Morgan	John Villani	Album-Mix
Poons Head Rob/Sam/Bush (09) 339 4791. 48 Track Recording			
Spank	Rob Grant	Rob Grant/Stuart McLaughlan	EP
Hoii Polloii	Rob Grant	Rob Grant	EP
Bolster	Rob Grant	Rob Grant	LP
Iron Youth	Rob Grant/Band	Rob Grant	LP
John Barnard	John Barnard	Rob Grant	Mastering
Flashing Tablet	Rob Grant/Band	Rob Grant	Mastering
Witzend Recording Studio Alan Dawson (09) 331 1818. 16 Track Automated			
Woodcave	Alan Dawson/Band	Alan Dawson	Album
Erik Christensen	Eric/Alan	Alan Dawson	Sound Track
Heads We're Dancing	Alan Dawson	Alan Dawson	Album
Christen Thompson	Jeff Carol/Alan	Alan Dawson	Demo

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CROSSOVERS, SYSTEM CONTROLLERS

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Horwood Australia P/L (02) 9585 1011
TX-312B stereo 2-way or mono 3-way; balanced in/out; 12 dB per octave; ground lift switch. $732.
TX-324B stereo 2-way or mono 3-way; balanced in/out; 24 dB per octave; ground lift switch; output mutes; limiters on outputs. $1006.
TX-424B stereo 3-way or mono 4-way/5-way; balanced in/out; 24 dB per octave; ground lift; output mutes; limiters on outputs. $1647.
TX-524B stereo 4-way; balanced in/out; 24 dB per octave; ground lift; output mutes; limiters on outputs. $2104.

dbx
Jands Electronics (02) 9582 0909
dbx 223 Stereo 2 way / Mono 3 way crossover featuring 24dB/octave Linkwitz-Riley filters, balanced inputs and outputs, 40Hz high pass filter, phase reverse switches and a summed subwoofer output. Internal power supply, 1RU. $645.
dbx 234 Stereo 3 way / Mono 4 way crossover featuring 24dB/octave Linkwitz-Riley filters, balanced inputs and outputs, 40Hz high pass filter, phase reverse switches and a summed subwoofer output. Internal power supply, 1RU. $795

ASHLY AUDIO INC.
Production Audio Services (03) 9415 1585
XR-1001 stereo 2-way/mono 3-way 24dB per octave electronic crossover. XLR in/out, adjustable crossover frequency and input/output frequency. All in 1RU. $995.
XR-2001 stereo 3-way/mono 3-way 24dB per octave electronic crossover. XLR in/out, adjustable crossover frequency and input/output frequency. All in 2RU. $1450.
XR-4001 stereo 4-way 24dB per octave electronic crossover. XLR in/out, adjustable crossover frequency and input/output frequency. All in 2RU. $1735.

RANE
Jands Electronics (02) 9582 0909
Rane MOJO MX22 Stereo 2 way or Mono 3 way 24dB per Oct crossover featuring an extra output which can be either full
range or a subwoofer feed crossed at 100 Hz allowing stereo 3 way (with a mono subwoofer). Stereo ganged channels for precise alignment. 1RU. $795.00
Rane MOJO MX23 Stereo 3 way or Mono 5 way 24dB per Oct crossover featuring an extra output which can be either full
range or a subwoofer feed crossed at 100 Hz allowing stereo 4 way (with a mono subwoofer). Stereo ganged channels for precise alignment. 1RU. $995.
Rane AC22B Stereo 2 way or Mono 3 way 24dB per Oct crossover. Features include transducer alignment delay for time alignment of speaker components and fully balanced inputs and outputs on XLR connectors. 1RU. Also available in stereo 3 way (Rane AC23B) $995.
Rane RPM26 2 in, 6 out programmable installation system controller w/ EQ, delay, xover and limiting with Windows (RS232) and contact closure control. A very configurable unit that can be used in a number of differing scenarios. Balanced in/out on Euroblok connectors (supplied).1RU. $5,995.

JBL
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JBL ASC24M Stereo 2 way 48dB per Oct crossover featuring CD horn EQ, system EQ to suit JBL Array series loudspeakers and limiters on all bands. Balanced XLR inputs and outputs. 1RU. $4,995.
JBL DSC280 2 in, 8 out Programmable Digital System controller with 24dB per Oct crossover, system and transducer delay, Equalisation and limiting functions. Balanced XLR inputs and outputs. Comes pre-installed with settings for a number of JBL loudspeaker systems, as well as providing user presets. 2RU. $10,995.

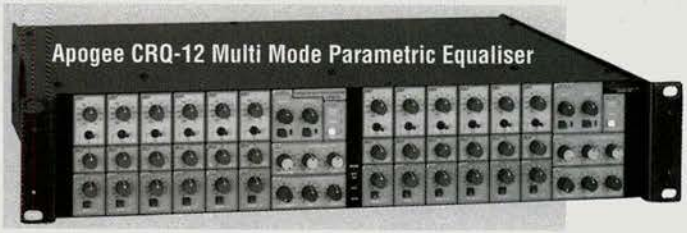
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MX800i signal processor to be used with EAW loudspeakers. Triamp and subwoofer (4-way), dual channel, range muting, single level LED's. Specify configuration. $6895.
MX8000i network signal processor to be used with EAW loudspeakers. RS232 control, 4-way, dual channel, with limiting, 6 bands of parametric EQ and delay. Specify configuration. $6895.

PEAVEY
Audio Telex Communications (02) 9647 1411
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Musiclink (03) 9429 9299
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CLOUD
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FENDER
Fender Australia (02) 9666 5077
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PCN 4 1RU, 3 way stereo, 4 or 5 way stereo active crossover, variable crossover frequencies, balanced ip + o/p 24 dB Linkwitz Riley filters. 5 year Warranty. $1099. $1299.



ELECTRO VOICE
EVI Audio (02) 9648 3455
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EX 24 Four way mono/two way stereo crossover. Balanced in and out on XLR's. Variable crossover points on front panel rotary. Fixed crossover slopes at 24db. $1299.
DX 34 Four way mono/two way stereo digital system controller. Balanced in and out on XLR's. Full function programmable controller with EQ/Phase/Delay. Comes complete with EV box programs on board. Password security. $2569.
DN 800 Four way stereo crossover. Can also be set up to operate four Bi-amped sends. Frequency's can be determined via plug in cards and can be set as either Linkwitz Reilly or Butterworth with variable slopes. Unit also has on board limiters, phase, level and mute. All inputs and outputs are balanced on XLR's. $3999.

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EQ231 Dual Channel 31-Band Graphic EQ: Unique combination of Gyrators and Inductors as to maximise dynamics performance and Signal to Noise Performance. Long Throw Faders. High Pass Filters. Balanced Ins and Outs. 3RU. $3,250.
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Q2031B stereo 31-band graphic; phone jacks or XLR balanced connectors; variable + - 12/+ - 6 dB range; HPF on each channel; EQ bypass. $1099.
YDG 2030 20-bit digital graphic; 2-channel 30-band w/switchable gain; 20 Hz to 20 kHz response; HPF and LPF on each channel (plus 4 notch filter) PC control. $2595.

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All fader movements, pan and mixer parameters can be controlled and automated by MIDI.

Comprehensive cut, copy, paste, exchange, insert, erase and scrub preview for fast non-destructive editing.

Large music friendly transport controls including locator, marker and tempo map options

Data Stream...

8 Physical Tracks x 8 Virtual Tracks (Total 64 tracks). Sample Rates of 48kHz, 44.1kHz and 32kHz. R-DAC A/D 16 bit Bit Stream D/A 16 Bit 8 times oversampling. Typical recording time is 35.6 minutes (all 8 tracks) on a 540MB HD at 44.1kHz. (Non-destructive).

Digital Mixer with 14 channels, 2 AUX, 2 Master, 8 Recording Buss, 2 -point digital EQ (High + Low) or 3 point digital EQ configuration with only 8 channels. 4 Analogue and 4 Digital inputs (SPDIF), 2 Analogue outputs, 1 Digital Output, 24 bit internal processing (EQ, Fader, etc).

Internal IDE interface for 2.5inch HD as well as SCSI I/O for external recording or storage to MO, Iomega Zip or Syquest drives, Back-Up to audio DAT in only 1.5 times actual recording time. Full synchronisation to MIDI Time Code and MIDI Machine Control as either Master or Slave.

Optional Effects Expansion Board (£349) incorporating 100 patches of Stereo Compression/Limiter, Reverb, Delay, Chorus, Pitch Shifter, RSS 3D, Vocoder, Rotary, Gated Reverb, Multi Tap Delay, etc... (20 different algorithms in total).

For further information on the Roland VS-880 DIGITAL STUDIO WORKSTATION contact Roland Corporation Australia 38 Campbell Avenue, Dee Why 2099 Telephone: 02-9982-8266

Roland

NEW V-Xpanded version now available
See it first at ENTECH - Stand Number R3

Write in Reader Service Number: 159

BUYERS GUIDE

CROSSOVERS • EQ's • LIMITERS • GATES • OTHERS

earth lift. $1098.
Q301-B 1/3 octave; balanced in/out; short throw dual 30-band; low cut; 6 or 12 dB cut and boost; earth lift, also available in long throw. $1098.
Q602-B 1/3 octave; balanced in/out; short throw dual 30-band; low cut; 6 or 12 dB cut and boost; earth lift, also available in long throw. $1830.
Q541-B 4 channel, five band; 63, 250, 1K, 4K and 16K frequencies; all connections are RCA jacks; made for studio use - especially home studios. $1006.

SAMSON
The Electric Factory (03) 9480 5988
E30 dual 15 band EQ. XLR balanced I/O, low noise circuitry, By pass switch, internal power supply. $599.
E62 dual 31 band EQ. XLR balanced I/O, low noise circuitry, By pass switch, internal power supply. $799.

TL AUDIO
The Electric Factory (03) 9480 5988
CLASSIC EQ-1 2 channels of 4 band valve EQ, balanced mic and lines, +48v phantom power, front panel Aux input, bypass switch. $2895.
CLASSIC EQ-2 4 band valve parametric EQ, variable filters, mic amps, +48v phantom power, dual mono or stereo linked modes. $4095.
INIDIGO-2011 2 channel, 4 band valve equaliser. Variable input gain, two channels x 4 bands equalisation, front panel AUX input, EQ by pass switch, peak LED metering. $1899. Also available with similar features in Non-Valve CRIMSON series for $1299.
INIDIGO-2012 2 channel parametric valve equaliser. Variable input gain, 'mono mode' allows 4 band operation, divide/multiply by 10 frequency switching, EQ by pass switch, peak LED metering. $1899. Also available with similar features in Non-Valve CRIMSON series for $1299.

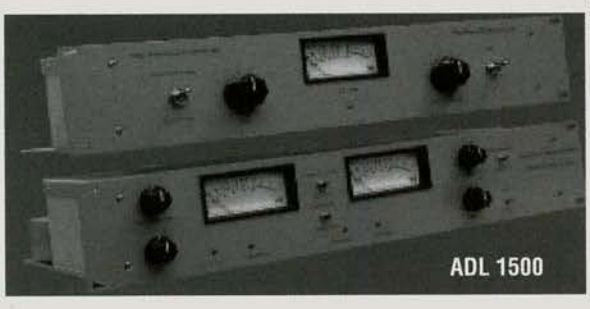
XTA ELECTRONICS
Production Audio Services (03) 9415 1585
DP202 2 input/2 output format digital equaliser with dual 8 band parametric equalisation, variable high and lowpass filters, dual limiters and delay option available. 1RU. $4595.
GQ600 2 channel/stereo 30 band graphic EQ with long throw faders, sweepable high pass filter, XLR & Klippon connectors provided, gain control HF trim pots, 3RU. $3960.
DP200 2 input/4 output digital EQ/processor. Includes 3 crossover modes, 4 x 8 bands of parametric, delay, high/low pass filters, 4 output limiters and digital level controls. $5895.

RANE
Jands Electronics (02) 9582 0909
Rane MOJO MQ302. Stereo 1/3 Oct Constand Q Graphic EQ featuring
stereo faders to control both channels from the one fader with +/- 12dB cut and boost. Balanced XLR & 6.5mm inputs and outputs. 1RU. $995.
Rane ME60 Dual 1/3 Oct Constant Q Graphic EQ with +/- 12dB
cut/boost. Balanced XLR & 6.5mm inputs and outputs. 2RU. $ 1,595.
Rane GE60 Dual 1/3 Oct Constant Q Interpolating Graphic EQ. Features
include long throw faders with +/- 12dB boost/cut. Balanced XLR, 6.5mm and screw terminal inputs and outputs. 3RU. $2,795.
Rane RPE228 Programmable Dual 1/3 Oct Constrand Q Graphic +/- 10dB. A dumb front panel EQ that can be controlled via contact closures or via Windows control software. Multiple units can be cascaded under the one control package . Balanced inputs and outputs via Euroblok connectors (supplied). 1RU. $ 3,695.

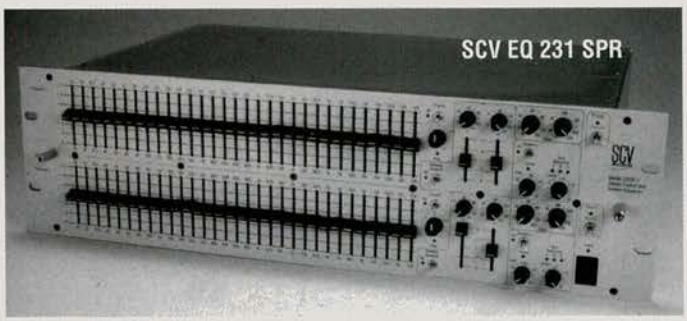
dbx
Jands Electronics (02) 9582 0909
dbx 20 Series The 20 Series of equalisers from dbx feature constant Q filter topology, and the new Type III noise reduction that eliminates virtually all noise produced from boosting and cutting filters. Also included is dbx's PeakStop Plus limiting circuit, giving you a fully fledged peak program limiter within the unit. Metering includes output and gain reduction bar graphs. Available in mono 1/3 octave, stereo 1/3 octave and stereo 2/3 octave (15 band). $1795 (stereo 1/3 octave).
dbx 30 Series Dual 1/3 Octave Constant Q Graphic Equaliser with features such as +/- 6 or +/-12dB switchable ranges, balanced XLR, 6.5mm and barrier strip inputs and outputs, and long throw faders for precise control. A world class EQ at an affordable price. 3RU. $2,995.
dbx 242 Features 3 bands of fully parametric peak/dip and 2 bands of frequency selective shelving EQ. Switchable shelf slope (6/12dB per oct). Up to 16dB boost / cut at any bandwidth setting plus over 40dB of cut at narrowest bandwidth setting (1/20th octave). Balanced input (6.5mm), clip indicator, 1RU. $795.

TC ELECTRONICS
Amber Technology (02) 9975 1211
1128 fully programmable 28 band EQ/Spectrum Analyser, +/-12 or 16dB cut and boost, 100 presets, auto feedback "search and destroy". optional 6032 remote controller, BAL XLR in/out, 1U high. $5595.
1140 mono 4 band parametric EQ with +/-20dB cut and boost, 20dB pre-amp for low level signals, dynamic range > 116dB, balanced XLR in/out, 1U high. $1595.
2240 stereo 4 band parametric EQ, +/- 20dB cut and boost, 20dB pre-amp for low level signals, dynamic range > 116 dB, balanced XLR in/out, 2U high. $2595.

ROLAND
Roland Corporation (02) 9982 8266
EQ-131 1 rack unit 31 band EQ with balanced in/out. Frequency response 20 Hz to 40 kHz +0/-2dB separate range, LCF and EQ controls for each channel, peak LED indicators and Bypass switch. $469.
EQ-215 1 rack unit dual 15 band EQ with balanced in/out. Frequency response 20 Hz to 40 kHz +0/-2dB. Total harmonic distortion 0.008% or less. Residual noise level -97dBm or less. Separate range, LCF and EQ controls for each channel. $495.



EQ-231 2 rack unit dual 31 band EQ with balanced in/out. Frequency response 20 Hz to 40 kHz +0/-2dB (controls flat). Channel separation 70dB or greater. Bypass, peak and range indicators. Residual noise level -92dBm or less. Separate range, LCF and EQ controls for each channel. $795.



BIAMP SYSTEMS
Production Audio Services (03) 9415 1585
EQ 282M digital control dual 28 band 1/3 octave graphic EQ with 4 memories. Adjustable via infra red remote, wall mount remote and/or computer, 1RU. $2795.
EQ 281M same as above but single channel version. $1925.

SUMMIT AUDIO
Sound Devices (02) 9283 2077
EQF-100 vacuum tube EQ in 2 unit rack with 4 bands of 7 switch selectable frequencies. Balanced input and outputs. $5995.
EQP-200A vacuum tube program EQ in 2 unit rack with 2 independent channels and balanced input/outputs. $5195.

SYMETRIX
Audio Telex Communications (02) 9647 1411
531E 31 constant Q band 1/3 octave graphic EQ. High quality alternative to other brands. 0.002% THD and a S/N ratio of 94dB. Gold plated XLR's with servo balanced output and internal p/s. 2 channel version available. $1219.
551E 5 band parametric EQ, up to 12dB boost and 20dB cut with an adjustable bandwidth from 0.05 to 2 octaves. Frequency range from 10Hz to 20kHz. Direct coupled inputs and outputs with servo balanced outputs. $1032.

ASHLY AUDIO INC.
Production Audio Services (03) 9415 1585
GQX 3102 dual 31 band 1/3 octave EQ. Adjustable high pass filter, LED level meters, 4RU. Also available single 31 band and dual 15 band. $2495.
MQX 2310 dual 31 band 1/3 octave EQ. Based on the GQX series, the MQX features adjustable gain, high pass filter, switchable range, 2RU. Also available single 31 band and dual 15 band. $1995.
PQX 572 dual 7 band Parametric EQ. Features full 20Hz-20kHz range on all filters. Adjustable frequency and level on each band, master level controls. 2RU. Mono version available. $1695.

SABINE
Audio Telex Communications (02) 9647 1411
RealQ digital real time dual channel adaptive EQ. Constantly monitors sound and maintains your specified EQ curve regardless of changes in audience size, temperature and room acoustics. $4280.

PEAVEY
Audio Telex Communications (02) 9647 1411
CEQ280A MIDI controllable graphic EQ with balanced and unbalanced i/o's. 28 bands on 1/3 octave ISO centres. Includes RTA, feedback detector and automatic room equalisation with inbuilt pink noise generator. $1195.

CALREC
Synchrotech Systems (02) 9417 5088
Calrec RQQ 220 twin mono equalisers and filters, 2 separate balanced mono line input/output channels with sophisticated 4 band parametric EQ and 2 band filters. $4500.

ELECTRO VOICE
EVI Audio (02) 9648 3455
EQ 215 dual 15 band equaliser. Balanced in/out on XLR's. Cut and boost of 6/12 db switchable plus bypass. Single rack unit. $839.
EQ 131 single 31 band equaliser. Balanced in/out on XLR's. Cut and boost of 6/12 db switchable plus bypass. Single rack unit. $839.
EQ 231 dual 31 band equaliser. Balanced in/out on XLR's. Cut and boost of 6/12 db switchable plus bypass. Two rack unit. $1259.

KLARK TEKNIK
EVI Audio (02) 9648 3455
DN 360 dual 31 band equaliser. Cut and boost of 6/12 db switchable plus bypass. Three rack units. Transformer balancing option available. $4869.

APOGEE SOUND INC
ESA Audio (03) 9562 4605
CRQ-12A a 'Multi-Mode' parametric equaliser with 3 distinct configurations. Each parametric band filter is fully adjustable throughout the entire audio frequency range, utilising a 3 position range switch. Every band also includes an in/out switch with a corresponding LED indicator. Boost and cut controls provide a range of -20 to +15dB. $6842.
DG-4023 a compact minimum phase transversal filter system. Uses non-resonant circuits to produce equalisation corrections without introducing extraneous response ripple or unnecessary transient ringing as with convential equalisers. $2937.

LIMITERS

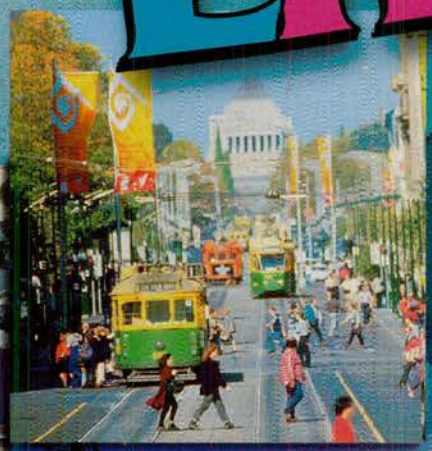
FURMAN
Horwood Australia P/L (02) 9585 1011
C-132B side chain input; de-ess function; threshold LED indicator; ground lift; balanced in/out; single channel unit; low distortion VCA. $750.
LC-6B stereo limiter-compressor-gate; side chain input; ground lift; stereo link switch. $1235.

ANTHONY DeMARIA LABS
ABK Audio Engineering 015 381 584
ADL1500 Stereo Compressor/Limiter Stereo Electro-Optical compressor using the same elements as the famed Teletronix LA-2A. Fully tube and transformer circuitry. $5090 Also available - mono version - ADL1000 ($2965).

EMPERICAL LABS
ABK Audio Engineering 015 381 584
Distressor Mono Compressor New, One-of-a-kind Features. Programmable analog distortion/warmth. Three audio modes provide user pro-

>>>continued other side of pull out ENTECH GUIDE!

EnTech





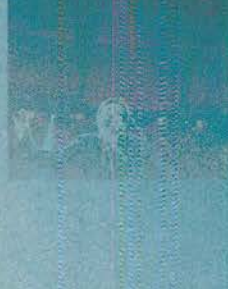


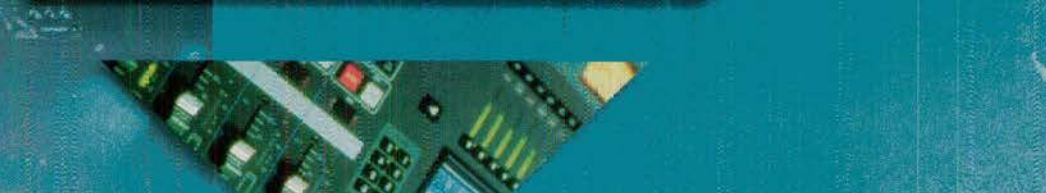




















1997 Visitor's Guide

The 1997 Entertainment Technology Trade Show and Convention

Melbourne's NEW Exhibition Centre, April 23-25

~Guide to Exhibits~

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The new Shure UHF Wireless delivers everything you'd expect from a premium-quality UHF system — and more.

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WELCOME TO ENTECH 1997!



Hello and welcome to ENTECH '97, the third annual, wholistic entertainment industry trade show and conference.

Connections Publishing, the promoters of ENTECH, hope to deliver to you, our audience, a comprehensive overview of the professional entertainment industry as it is today.

As the years progress we have endeavoured to expand the various industry genres represented and exhibited at ENTECH. 1997 as in previous years has proven that the industry as a whole wants a complete experience.

Niche is out, practicality is in.

The **TRADE SHOW** exhibitor wants one annual event in which to display their wares for budgetary reasons. The visitor wants one event to pencil into his/her diary to allow for travel time, expense budgeting, the planning of future purchases and to plan the opportunity of networking with peers, colleagues and suppliers.

The **CONFERENCE** portion of ENTECH has once again been compiled with love and care by a dynamic team, overseen by Connections Magazine Editor, Julius Grafton. Each year I watch Julius go through the thought processes, establishing a comprehensive educational package, in all genres, for you the visitor. This year as in others he has achieved his goal. Please see the enclosed program for full details of what we consider our best educational package ever.

The **SOCIAL** activities throughout ENTECH 1997 allow for a great deal of networking. MIX with the designers, engineers, product specialists, distributors and manufacturers at the 1997 Annual ENTECH Awards Dinner on Thursday night (April 24) and/or NETWORK your heart out at the ENTECH Social Night at Bobby McGee's on Wednesday (April 23) from 6.30pm to 9.00pm. All activities are detailed within the guide pages.

This year is not only our first ENTECH promotion in Melbourne but also our first in the magnificent Melbourne Exhibition Centre (MEC). The facilities of the MEC surpass those of previous years allowing for quick access to the seminar and conference areas. Professional convention rooms can be viewed from the main trade show floor, while the conference auditorium is merely feet away.

So here you have it - ENTECH 1997!

Once again, welcome. I hope ENTECH 1997 is the enriching experience for you, that we have anticipated and worked towards. I hope to meet you, at one of our events at least.

But for now, on with the show - this is it!

Caroline Grafton

FAST INDEX

In the MIDDLE you will find the GREY pages, a pull-out section which contains the full support programme. In there you will find detailed escriptions and schedules for-

- all the **Conferences,**
- **Seminars,**
- **Social Events,**
- and **Product Clinics** at ENTECH.

In the following pages you will find a map, floor plan, alphabetical exhibitors list and an editorial entry for exhibitors signed up before the end of February. Late exhibitors will be listed on a loose insert available at the show.

You can find even more info at our website: browse **www.conpub.com.au**

WHAT IS ENTECH?

Entertainment Technology encompasses everything that goes into making a show or in delivering entertainment. We draw the line at raw musical instruments - however music technology does come under the 'ENTECH' banner.

Some of the parts which make this whole are: LIVE SOUND, PROFESSIONAL AUDIO, LIGHTING, EFFECTS, STAGING, VIDEO, VISION, AUDIO-VISUAL, MUSIC TECHNOLOGY, CONTRACTING, INSTALLATION, STUDIO AUDIO ~ the list goes on! It's here...

ENTECH is as much about technology and smart applications as it is about traditional techniques. You'll find over 100 exhibitors displaying at least 3,000 products here. Enjoy!

FAST FACTS

CONFERENCES START
Tues APRIL 22 9am

EXHIBITION HALLS OPEN:
Wed. APRIL 23 10am - 6pm
Thur. APRIL 24 10am - 6pm
Fri. APRIL 25 10am - 6pm
(Friday is the ANZAC Day public holiday)

ENTECH VENUE 1997:
The NEW Melbourne Exhibition Centre,
Number one Clarendon Street.

AWARDS DINNER: PLAZA BALLROOM
Thursday evening APRIL 24. Bookings in advance; freecall 1-800-635-514 or buy tickets at ENTECH.

ORGANISERS CONTACT DETAILS:
+61 (0) 2 9876-3530; fax 9876-5715
or freecall 1-800-635-514

TRAVEL & HOTEL BOOKINGS:
Call Stage & Screen Travel,
1-800-670-354 or FAX +61 2 9233-3261

TRADE ENTER FREE

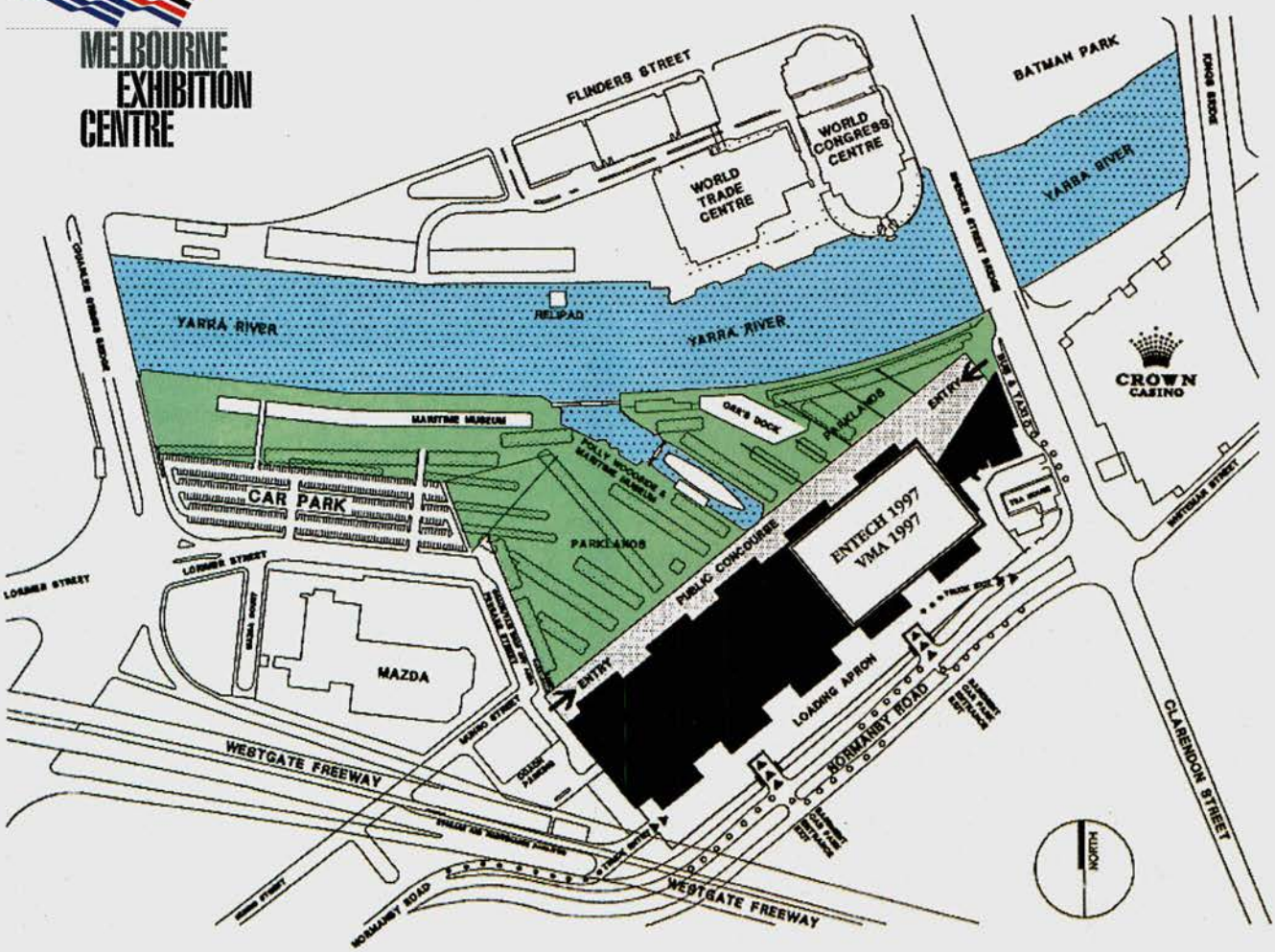
ENTECH is a Trade Exhibition where exhibitors seek to display their services and technologies. Trade registration can be done before APRIL 18th or AT the show. Just walk up, registration forms will be available at the entrance. You will then be entered into the system by our contractor, InfoSalons, and issued with a Visitors Pass. It gets you onto the trade show floor at no cost.

IF you do not consider yourself TRADE, you may come on Friday April 25th (public holiday) and pay $10 for public entry.

ENTECH is held every April. Next year it is in SYDNEY, April 23 > 25th.

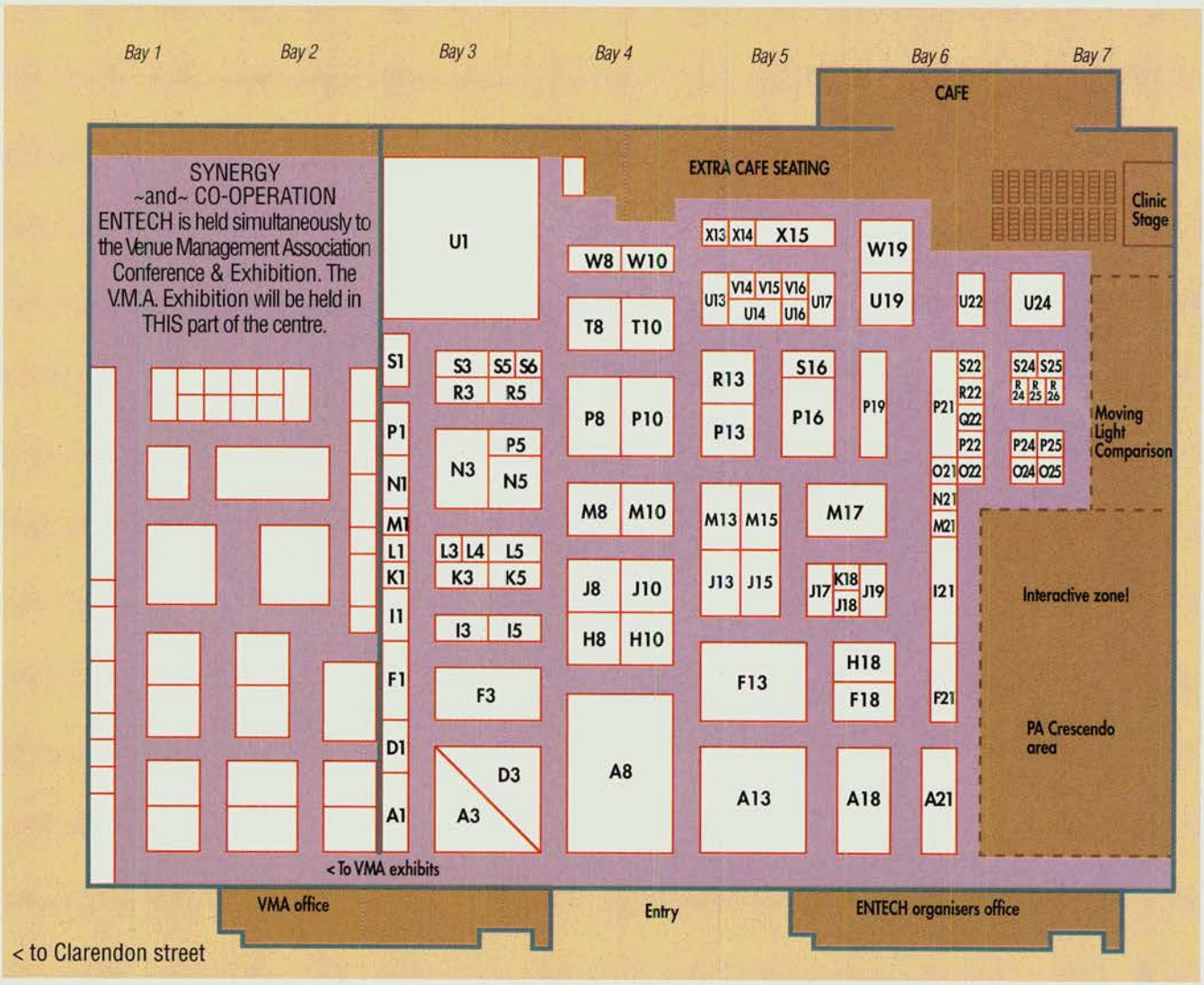
1998: SYDNEY
1999: MELBOURNE
2000: SYDNEY
2001: MELBOURNE

MELBOURNE EXHIBITION CENTRE



EXHIBITOR LIST

A & A AIBA Insurance Brokers	Stand No: M1
A.C. Lighting Ltd	Stand No: N21
A.R. Audio Engineering	Stand No: M17
Abbey Sound	Stand No: S3
Acoustic Technologies	Stand No: P1
Active Lighting	Stand No: X13
Alcatel Components Ltd	Stand No: V15
Altronic Distributors	Stand No: I1
Amber Technology	Stand No: J10
American DJ	Stand No: H18
Amps Unlimited - Ampower	Stand No: R5
Apogee Sound Inc.	Stand No: R13
ARX Systems Pty Ltd	Stand No: M10
Audio Telex	Stand No: J8
Audiology Pty Ltd	Stand No: O21
Australian Audio Supplies	Stand No: U24
Australian Monitor P/L	Stand No: L3
Australis Music Group	Stand No: F1
AWA Distribution	Stand No: N3
Bose Australia Inc.	Stand No: D3
Bytecraft	Stand No: A18
C.M.I.	Stand No: U14
CC's Light & Sound P/L	Stand No: W8
Chameleon	Stand No: S1
Clearlight Shows	Stand No: W19
CLS	Stand No: N5
CMC Music	Stand No: J17
Coemar De Sisti Australia	Stand No: P21
Connections Magazine	Stand No: A21
Crew Room/Gig Power	Stand No: V16
Digidesign/AVID Technology	Stand No: J13
Disco & Dancing	Stand No: L4
Disco World	Stand No: K3
Eastcoast Audio	Stand No: J18
Electrosonic Systems	Stand No: U19
Electric Factory	Stand No: P24
Elsta Audio and Lighting	Stand No: F18
EVI Audio	Stand No: F13
FOCUS	Stand No: O25
Gemini Lytequest Australia	Stand No: M15
Glantre Engineering	Stand No: H10
Horwood Australia	Stand No: K5
Image Design Technology (IDT)	Stand No: O22
Imported Theatre Fabrics	Stand No: X14
Infonics	Stand No: U17
INLITE	Stand No: U13
Jands Electronics	Stand No: F3
L.S.C. Electronics	Stand No: P16
Laser Theatre Lighting	Stand No: O24
Lightmoves Professional Entertainment Services	Stand No: L5
Lightmoves Technologies	Stand No: I21
Magna Systems & Engineering	Stand No: J19
Major Music Wholesale	Stand No: K18
Mediavision Australia	Stand No: S6
Meyer Sound	Stand No: P13
Miller Professional Products	Stand No: U16
Moore Music	Stand No: F21
Musitronics Australia	Stand No: I5
Nightlife Music Video	Stand No: I3
Oracle Laser Productions	Stand No: U22
Osram Australia	Stand No: P10
P. Audio System Co., Ltd	Stand No: T8
Penn Fabrication	Stand No: H8
Performance Media	Stand No: R24
Philips Lighting	Stand No: M13
Premier Lighting	Stand No: T10
Production Audio Supplies P/L	Stand No: P8
Quantum Efex	Stand No: X15
Roland Corporation	Stand No: R3
Selecon	Stand No: P19
Show Structures	Stand No: S16
Show Technology	Stand No: U1
Showbiz Video/Thorn	Stand No: N1
Showcraft	Stand No: P5
Sound Magazine	Stand No: R22
Southern Cross Production Services	Stand K1
Spectrum Management Agency	Stand No: R25
Stage Line	Stand No: M21
Stage Technologies	Stand No: L1
Stage Whispers	Stand No: P19
Sylvania Lighting	Stand No: D1
Syncrotech Systems Design	Stand No: A1
System Sales & System Sound	Stand No: J15
TECHSCAPE	Stand No: A8
The P.A. People	Stand No: A3
The Resource Corp	Stand No: M10
Three Arts Services Pty Ltd	Stand No: P19
TOMCAT U.S.A., INC.	Stand No: W10
Total Fabrications, Inc.	Stand No: R13
Universal Lighting & Audio	Stand No: A13
Yamaha Music Australia	Stand No: M8

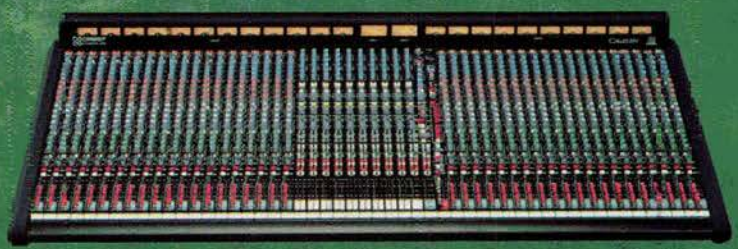


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PRODUCTION AUDIO SERVICES PTY LTD

Sydney: Suite 406, 220 Pacific Hwy., Crows Nest, NSW 2065 Ph: (02) 9954 5100 Fax: (02) 9954 4927

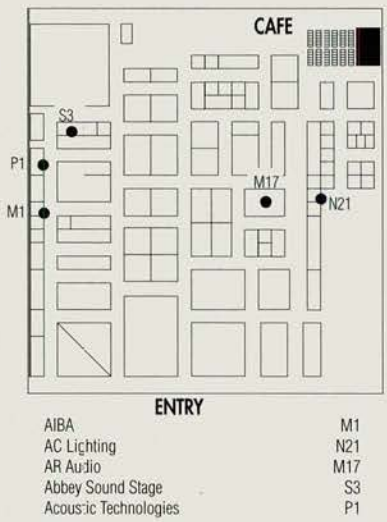
Melbourne: 6-8 Elizabeth St., Richmond, VIC. 3121 Ph: (03) 9415 1565 Fax: (03) 9415 1595

SEE US AT ENTECH STAND P8

GUIDE TO EXHIBITS

A & A AIBA Insurance Brokers
Address: Level 9, 52 Alfred Street, MILSONS POINT NSW 2026 (PO Box 1809, NORTH SYDNEY NSW 2059)
Tel: (02) 9923 1066 Fax: (02) 9929 4584
Stand No: M1
Full range of entertainment and music industry insurance products including - • Commercial Insurance package for audio visual businesses • Property Cover for sound and lighting systems, musical instruments, staging equipment, theatrical goods such as sets, props and costumes, and film equipment such as photographic and video equipment • Liability Insurance for music and entertainment industry including special events, concerts • New product - Commercial and Heavy Motor Insurance designed specifically for owner-drivers of sound and lighting systems. Attendance on stand: Ken Killen, Ian Stack, Rebecca Jones.

A.C. Lighting Ltd
Address: Unit 3, Spearmast Industrial Park, Lane End Road, Sands, High Wycombe, Bucks HP12 4JG UK
Tel: +44 (0) 1494 446000 Fax: +44 (0) 1494 461024
E-mail: sales@aclighting.com
Stand No: N21
A.C. Lighting is probably the largest wholesale stockist of specialist lighting equipment in the world. A truly international supplier, the company boasts a same day global despatch service from an unparalleled stock holding from many manufacturers. In addition to the wholesale supply business, A.C. Lighting has established a worldwide dealer network to distribute and service a range of top professional lighting products on an exclusive basis including: Wholehog II - Ultimate integrated lighting control system; Jands Hog - Wholehog software on Jands hardware; WYSIWYG - Lighting visualisation software; Jands - Lighting control range for all applications; Chroma-Q - Incredible value DMX colour changer (worldwide); Vision - Theatre luminaires (worldwide); Vision Light Enhancer - Safe, portable light enhancing haze machine (worldwide); Power Lock - Safe, single pole, high load electrical connector (outside US); Procolor - Lighting filters (worldwide); Strong - Xenon followspots (Europe); Datasafe - Flame proof DMX and colour changer cable.



A.R. Audio Engineering
Address: 558 Darling Street, BALMAIN NSW 2041
Tel: (02) 9810 5300 Fax: (02) 9810 5355
Stand No: M17
Featuring professional audio products for live and installed sound applications: QSC Audio, including the newest and most powerful in the PowerLight range, PL8.0 (4000 w/ch. at 2Ω); Martin Audio, with the Live! award winning W8C Concert mid/high and the WSX 7" Folded Horn Sub Woofer; Allen & Heath featuring the GL4000, a very comprehensive large format mixer and the ground-breaking DR128 Digital Mix Processor; Marantz Professional, with the new no hassle CD Recorder, the CDR620; Focusrite's new GREEN Series Dual Compressor and Channel Strip and the new BLUE Series Mastering System; ATC introduce their SCM PRO



Series with the SCM150 and SCM20A PRO revolutionary active 2-way aircraft alloy construction Reference Monitor.

Abbey Sound
Address: 5 Heversham Drive, SEAFORD VIC 3198
Tel: (03) 9786 4211 Fax: (03) 9786 4710
Stand No: S3
At Abbey Sound we are fanatical about sound and how to achieve high quality sound on a tight budget. This is possible through careful selection of components and not skimping in important areas. At ENTECH we are releasing our two new Subwoofers, ASB12 and ASB15, 300w and 120w respectively. We believe the performance of these subwoofers is unbelievable, considering their small size. Along with new mono power amplifiers for these speakers, we will be releasing a brand new powered Foldback Wedge AF12P and our own mixers. If you're looking for a new compact PA system with huge bottom end you can fit in a car, call at our stand and talk to Ross or Petros, we look forward to meeting you.

Acoustic Technologies
Address: 8-10 Staple Street, SEVENTEEN MILE ROCKS QLD 4073
Tel: (07) 3376 4122 Fax: (07) 3376 5793
Stand No: P1
People on stand: Harry Lloyd-Williams, Richard Faint, Paul Lister, John Taylor, Mick James. Acoustic Technologies will

Connections
$25 SUB!
One year, 11 issues, $25! Stand A21 - at the front

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DUAL FUNCTIONALITY PLUS LIVE RECORDING *versatility*





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- Matrix to Aux link
- 4 Band full sweep EQ with 'Q' switching
- Sys-link Expandability and Expander Modules
- 4 Stereo Input Channels with Width Control

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at a price you can afford

ALLEN & HEATH

AR AUDIO ENGINEERING

AR Audio Engineering Pty. Limited
558 Darling Street Balmain, NSW, 2041
Telephone: (02) 9810 5300 Facsimile: (02) 9810 5355

be releasing a whole new range of speaker systems and amplification. Mick James, Acoustic Technologies dealer on the Gold Coast will be on the stand for one day to share with prospective dealers the success he has had with Acoustic Technologies products. ENTECH is also when we debut our website.

Acoustisearch
Address: 21-29 Railway Avenue, HUNTINGDALE VIC 3166
Tel: (03) 9568 4022 Fax: (03) 9568 4667
Stand No: S5
Hear what's really going down in your room - Hear the full advantage of digital media with Bag End Speakers full time alignment, and revolutionary ELF extended low frequency system, flat to 8Hz. Harrison no compromise audio mixing consoles for sonic quality and optimum ease in any type of facility. Acoustic design, measurement and treatment - fixed, modular and/or transportable, will ensure your room is not colouring your sound. Jensen Transformers for high quality audio performance and audio and video isolation. New: Video Isolator removes hum bars from your video images, no worries.

Active Lighting
Address: 1-7 Queens Avenue, HAWTHORN VIC 3122
Tel: (03) 9819 6912 Fax: (03) 9819 6008
Stand No: X13
Active Lighting is again on the move due to rapid expansion of our hire/production department. As of 1st April 1997 we will be located at 1-7 Queens Avenue Hawthorn which is just down the road from our current premises. Our stand will demonstrate some of our latest hire/production acquisitions. Come along and have a chat to our production/hire staff who will be only too pleased to assist in any way they can.

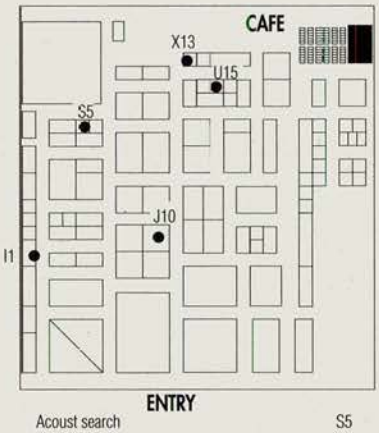
ADJ *see* Show Technology

Alcatel Components Ltd
Address: 248 Wickham Road, MOORABBIN VIC 3189
Tel: (03) 9555 1566 Fax: (03) 9553 3801
Stand No: V15

Alcatel Components' primary focus is on connectors. The Company is a major designer and manufacturer of advanced connectors for audio applications. It is committed to providing innovative solutions to meet the changing requirements of both domestic and overseas markets. The new generation of Alcatel advanced cable connectors featuring the unique Australian designed and patented "Jaws" Cable Retention System for both insulation displacement (IDC) and standard solder versions will be the feature product on display. New products will include the "Z"



Series Panel Mount Connectors and the Easy-In Line Series of attenuators and RFI Filters. Stand staffed by: Stephen Richards, Sales Representative; Branko Bosnjak, Sales Engineer; Robert Durling, Project Engineer.



Acoust search	S5
Active Lighting	X13
Alcatel	U15
Altronic Distributors	I1
Amber Technology	J10

Altronic Distributors
Address: 11/810 Princes Highway, SPRINGVALE VIC 3171
Tel: (03) 9574 0065 Fax: (03) 9574 0075
Stand No: I1
Altronic Distributors P/L, manufacturers of "REDBACK" Public Address equipment, are a national supplier of background music systems. Products include: 100v Line 250/125 watt Mixer & Booster amplifiers, NEW Mi-Pro 200mHz wireless microphones, 19" rack frames and accessories, 100v Line ceiling speakers, sound spheres, P.A. test equipment and associated accessories.

Amber Technology
Address: Unit B, 5 Skyline Place, FRENCHS FOREST NSW 2086 Tel: (02) 9975 1211 Fax: (02) 9975 1368
Stand No: J10
Amber Technology will demonstrate a comprehensive range of professional audio and A/V equipment from such leading manufacturers as Otari, TC Electronic, Neumann, Crestron, Neutrik, Electrohome, Dynaudio Acoustics and Canare. New products will include: Otari DP-80 MO Disk Recorder - With the latest 3.5" 640MB MO Disk technology, the DP-80 offers professional 8-track digital recording with outstanding audio performance, simple operation, advanced editing and realistic pricing. TC Electronic "FINALIZER" - Complete low-cost digital mastering package for the Project Studio market: 5-Band 24-Bit EQ, multi-band compressor/limiter/expander, normaliser, de-esser and more... Electrohome "VistaPro" DLP Projector - Making its Australian debut at ENTECH, the VistaPro features the revolutionary 3-chip Digital Light Processing (DLP) technology from TI. Dynaudio Acoustics Active Studio Monitors - The BM6A and BM15A are the brand new active nearfield monitors from Dynaudio Acoustics which will have their Australian premiere at ENTECH.

Connections
BOOK SALE
Our ENTECH specials return! Stand A21 - at the front

LARGE-FORMAT CONSOLES ■ LOADED CHANNEL STRIPS ■ MUTE GROUPS ■ AND MORE

Now shipping: The world's best large-format console value. Mackie's SR40•8 for live sound and sound recording.

Never before has so much been so affordable. Using the automated manufacturing processes and design expertise that established our 8•Bus and SR Series, we've created a no-compromise, 40x8x3 large-format live sound console that's equally suited for sound recording.

- **Center-mounted Master section** includes fader link L/R switch, center master fader, center solo + LED, L&R/L-R master level faders, L&R solo switches + LED indicators
- **Independent L/R/Center bus assignment**
- **On-board snapshot group muting** with external computer control capabilities
- **12x4 matrix mixer** w/Center, L & R input controls, matrix mute button + LED, matrix master level control, and matrix solo + LED
- **40 (or 56) mono channel strips** with Mackie's renowned high-headroom/low noise discrete mic preamps, polarity switches & sweepable 30-800Hz Low Cut (high pass) filters at 12dB/octave
- **4 extra stereo line channel strips** for aux returns, which include: 4-band equalization with 12kHz Hi shelving EQ, 3.5kHz Hi Mid EQ, 800Hz Lo Mid EQ and 80Hz Lo shelving EQ, plus 150Hz fixed Low Cut (high pass) filter at 18dB/octave, Low Cut In/Out switch, other features same as mono channels
- **8 Submix section bus strips** each feature 100mm log-taper faders, "Air" EQ controls, center & L-R assign switches, pan controls, mute & solo switches with LEDs
- **Flip switch** for stage monitor applications: Exchanges the master control of any selected aux send with the corresponding subgroup fader, routing the aux send to the sub insert jacks, slide master fader, "Air" EQ, and balanced output connectors
- **UltraMute section** has 99 mute groups and 99 snapshot capability, mute select switch + LED indicators, Store/Preview/Snapshot/Clear/Do It switches + LEDs, 10-unit snapshot indicator, group indicator, Mode/Up/Down switches



- **Talkback section** includes talkback mic input (phantom powered), assign switches for Matrices A-B-C-D/Aux 1-4/Aux 5-8/Ext./L-R, talkback level control, solo level control, program level control, talk button, recessed phones jack (there's one on the rear panel, too), and 400 Hz/pink noise source with separate level control (uses talkback routing switches)
- **All inputs & outputs fully balanced** (except RCA tape inputs & outputs)
- **Each channel** has rear panel XLR mic & TRS line in jacks, insert with separate send & return (balanced), & direct out
- **Built-in Clear-Com™ compatible interface:** ties the SR40•8 into any Clear-Com party-line intercom system, with ground isolation, ignore switch, call button + LED, and a trick or two that even Clear-Com doesn't have
- **Rear panel** includes RS232 data port & MIDI In and Out jacks, as well as an exhaustive list of balanced inputs, outputs, throughputs and shotputs
- **External 400-watt power supply** with redundant power capability
- **4-pin XLR lamp sockets and dimmer**

SR40•8 – $17,995
SR56•8 – $TBA

- **Australian suggested retail prices!**

ON DISPLAY AT ENTECH
STAND U24

MACKIE DESIGNS' SR40•8 DESIGN PATENT PENDING.
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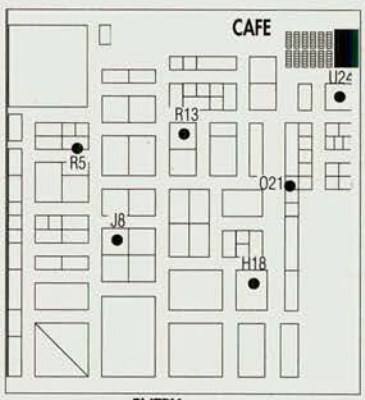
For more information, please contact:
Australian Audio Supplies ■ PO Box 183 ■ Ourimbah ■ NSW 2258
Tel (043) 291 711 ■ Fax (043) 291 747

Australian Audio SUPPLIES

American DJ
Company Name: American DJ Supply Pty Ltd (Australia)
Address: 629 Parramatta Road, LEICHHARDT NSW 2040
Tel: 1800 643 111
Stand No: H18

American DJ in the United States is a world market leader of professional lighting and audio products. American DJ is being launched in Australia at ENTECH 97 as part of an international promotional campaign, featuring a wide variety of marketing materials, point-of-sale goods and a 54 page full colour catalogue. Their expanding product range consists of beacons, bubble machines, chasers, dimmers, fog machines, helicopters, intelligent, theatrical and strobe lighting, lasers, light stands, mirror balls, mixers, pinspots, touch panels and accessories. American DJ have recently branched into serious audio with a Pro DJ range of mixers. American DJ's huge buying power means very competitive prices, and they strive to make products with four distinct advantages - quality, affordability, reliability and performance. Who said it could only happen in America! Company principles : Rick Chisholm - Managing Director, Australian office; Charles Davies - President, American office. New release/special feature products: Include the American DJ DMX Intelligent Extreme, Arcbeam 150, full range of mixers, Mini Gem, disco effects, world renowned Fog Hog and accessories.

Amps Unlimited - Ampower
Address: 6 Adrian Road, CAMPBELLFIELD VIC 3061
Tel: (03) 9357 8580 Fax: (03) 9357 8572
Stand No: R5
Stand staff: Les Goding, David Benge, Bob Middleton, Nick Libertone. Philips representative: Bryan Nokes. Amps Unlimited will be exhibiting several new products including the recently released "ES" series power amplifiers. Further additions to the range include "Installer Series" 100 volt line and "Venue Series" speakers. Featured and demonstrated on the stand will be the new Ampower computerised digital background music system, a computer controlled alternative to using conventional record, tape and compact disc systems. Also featured will be the Night Club/DJ System with 1000 track capacity. Further new products in the extensive Philips range will also be on display.



American DJ	H18
Amps Unlimited / Ampower	R5
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Apogee Sound Inc.
Address: 1150 Industrial Avenue, PETALUMA CA 94952 USA Tel: +1 (707) 778 8887 Fax: +1 (707) 778 6923
Stand No: R13
Apogee Sound will introduce several new products at ENTECH - and demo Apogee's unique AmpNetx Amplifier Control Software and the D-1 Digital Loudspeaker Controller. New products include the powerful, lightweight and affordable AE-7 Concert Loudspeaker and AE-7SB Subwoofer, the MA Series Modular Multi-Channel amplifier for hotels, office buildings and theme parks, and the ACS (Apogee Contractor Series) SAT-3 speaker. AmpNetx software allows Apogee power amplifiers to be remotely monitored and controlled from a PC. The D-1 contains processing information for all Apogee speakers, digital delay, limiter, noise gate and parametric EQ-and can be PC controlled.

ARX Systems Pty Ltd
Address: 33 Advantage Road, HIGHETT VIC 3122
Phone (03) 9555 7859 Fax (03) 9555 6747
Stand No: M10
ARX will be displaying their complete range of solutions for the Pro Audio professional at Entech – amplifiers, speaker systems, signal processing, equalizers – the lot.



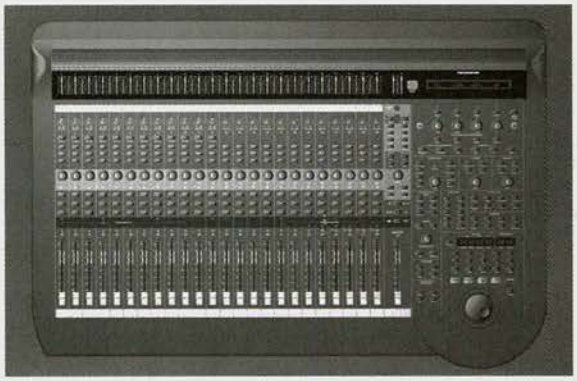
Working hard on the stand will be directors Colin Park, David Park, and Duncan Fry. Featured products will include the AFW-1 Anti-Feedback Workstation, the Ambience 1 and 5 installation series speakers, and some new signal processing surprises. The ARX www.arx.com.au site will be up and running for those who'd like to trawl around online. ARX will be exhibiting in conjunction with our Victorian Rep. the Resource Corporation

Audio Telex
Address: 149 Beaconsfield Street, SILVERWATER NSW 2128
Tel: (02) 9647 1411 Fax: (02) 9748 2537
Stand No: J8
Audio Telex Communications P/L are a leading supplier of pro audio, broadcast and sound reinforcement products. Their head office is located in Sydney including their factory where a range of equipment is manufactured. Branch offices exist in Melbourne, Brisbane, Perth and Auckland, New Zealand. Brands imported and distributed include Peavey AA including the revolutionary MediaMatrix system, Symetrix, Telex, Sabine, Chiayo, Oxmoor, Auditel, Switchcraft and more! Many new and exciting products will debut at ENTECH and a visit to our stand is well advised to all friends of Audio Telex. Staff at ENTECH includes Peter Holland, Terry Partridge, James Ritter and regional representatives.

Audiology Pty Ltd
Address: 1/1A Pritchard Place, PEAKHURST NSW 2210
(PO Box 300, Hurstville NSW 2220)
Tel: (02) 9584 0033 Fax: (02) 9584 0154
Stand No: O21
Authorised importer and distributor of the Mach range of speaker systems from Denmark. Mach is the sister company to Martin Lighting and is totally dedicated to professional product. There are four ranges of cabinets to choose from, Road Series for the pro user, Installation Series for permanent installations, Background Series for smaller applications and the new Terminator Series. A cost effective high quality range for the semi pro user. Pricing ranges from $399 RRP to $4499 RRP. On the stand will be Hans Madsen, Managing Director of Mach Systems Denmark.

Australian Audio Supplies
Address: PO Box 183, OURIMBAH NSW 2258
Tel: (043) 291 711 Fax: (043) 291 747
Stand No: U24
Australian Audio Supplies distributes some of the world's leading brands of professional audio equipment, including Mackie Designs, CAD Hafler, PreSonus, Spectral and Omnirax. Established in 1987 Australian Audio Supplies has carved a niche in the market place with value for money, high quality products. Their priority has been to provide the end user with as much information as possible as highlighted by their information packed catalogue which you can pick up from their stand. New releases for ENTECH 1997 from Mackie Designs: The Digital 8 Bus; the HR824

(continued over page)



High Resolution Active Studio Monitor; the SR40.8 Large Format Center Master Section Console; the new SR40.8 and SR56.8 mixers; The M1400 FR Series Power Amplifier. Other new releases include the CAD95 and CAD90 microphones from CAD, the ACP2 and Blue Max Compressor Limiters from PreSonus, the complete range of custom designed studio furniture from Omnirax and the new StudioTracks XP hard disk recording and editing software for Spectral's Audio Prisma.

Australian Monitor P/L
Address: 29 Hope Street, ERMINGTON NSW 2115
Tel: (02) 9874 9355 Fax: (02) 9874 9366
Stand No: L3
Australian Monitor is an Australian owned and operated design manufacturing facility specialising in quality, high powered amplification and speaker systems for studio, broadcast and professional sound reinforcement industries. Now in its 10th year of operation, Australian Monitors growing product range has been accepted by the international market place where over 70% of its products are exported to over 45 countries on all major continents. Many of its designs have stood the test of time and have won the respect and admiration of its competitors. On display will be its full range of amplifiers and a selection of speaker products. New Products to be displayed: 1) The AM3002 - New high power brute, at over 4,000 watts. 2) Opal S1-a and S2-a Monitors 3) Pyramid - A new compact and cost effective amplifier and speaker system. Company principals: Stuart McLean - Operations Manager (on stand), Lionel Krupp - Financial Controller (Director), Angela Kabeck - Sales Support (on stand), Hymie Meyerson - Export Consultant, Brett Stapleton - Service

Australis Music Group
Address: 88 Bourke Road (PO Box 601), ALEXANDRIA NSW 2015
Tel: (02) 9698 4444 Fax: (02) 9698 4545
Stand No: F1
Australis music will be displaying a range of great products from AKAI and Peavey. The highlights of the show will be the NEW AKAI MPC2000, AKAI DD8, PC MESA, Peavey SRC4034 mixer, CS800S power amp, Impulse speakers and the T9000 tube mic. The MPC2000 is a sampler, sequencer and drum machine in one. The NEW AKAI DD8 is an 8 track Digital dubber on hard disk or MO drive and is a plug and play replacement for the DA88. Also we will be displaying a range of Peavey DTH speakers, Peavey power amps and equalisers, Peavey mics the AKAI DD1500 Digital Audio Recorder/editor, Akai samplers and hard disk recorders.

AWA Distribution
Address: 175-179 James Ruse Drive, ROSEHILL NSW 2142
Tel: (02) 9898 7666 Fax: (02) 9898 1135

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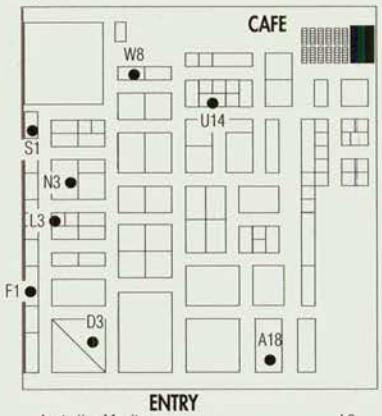
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PHONE AUDIO TELEX COMMUNICATIONS ON:
SYD: 02 9647 1411 MELB: 03 9562 8566
BRIS: 07 3852 1312 PERTH: 09 356 2761

Stand No: N3
AWA is pleased to present: • New Denon Pro CD player and MiniDisc recorder/player • New range of AKG mics for live sound • New speaker boxes from TOA, as well as • Denon's range of Disco equipment, and • Music amplifiers from AWA Jeil. Alistair Dewar and Paul Turner will have information on all these products and many more on the AWA stand.

Bose Australia Inc.
Address: 1 Sorrell Street, PARRAMATTA NSW 2150
Tel: (02) 9204 6111 Fax: (02) 9204 6122
Stand No: D3
Bose Australia will display the range of "Pro Style®" portable systems, Freespace® business music systems and Panaray® Long Throw loudspeakers for stadium sound. Crown products will include MA, CT and the Power Tech range of amplifiers. Highlighted will be the new K2 amp. A full range of Crown IQ products will also be on display. Bose Personnel: Des Williamson, Dom Waters, Brian Chilcott, Shane Spinks, Peter James, Steve Hart.



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Australis Music Group	F1
AWA Distribution	N3
Bose Austral a	D3
Bytecraft	A18
C.M.I.	U14
CC's Light & Sound	W8
Chameleon	S1

Bytecraft
Address: 23-27 Fonceca Street, MORDIALLOC VIC 3195
Tel: (03) 9587 2555 Fax: (03) 9580 7690
Stand No: A18
Bytecraft is a privately owned Australian company specialising in the design and manufacture of advanced lighting and stage automation systems for professional theatre, television and other entertainment applications. New product on display include the new Strand 520 control desk with Genius Plus Version 2.0 software and the Pirouette Automated Lantern. Feature products include the range of Bytecraft professional dimmers and motion controllers, Strand Lighting theatre and television lighting, Limelight followspot, Wybron Scrollers and MDG foggers. Staff on the stand will include Stephen Found, Ted Fregon, Durham Ritchie, David Storie, Patrick Bravard and John Drummond Montgomery. Srand Lighting will be represented by Phillip Lehmann.

C.M.I.
Address: Unit 3, 13-21 Thomas Street, YARRAVILLE VIC 3013
Tel: (03) 9315 2244 Fax: (03) 9315 2115
Stand No: U14
CMI is the Australian distributor of Digitech and DOD. Part of the Harman group, DOD design and manufacture processors from their plant in Salt Lake City, Utah, USA. At the recent winter NAMM show, CMI's MD, Drago Troykovic received an award for Asia/Pacific distributor of the year. Marc Cooper from DOD/Digitech will be at CMI's stand this year. New products include: DOD - New range of "Constant EQ" graphic equalisers (outstanding value); Digitech VCS-1 - Dual vacuum-tube dynamics processor with full featured compression, de-essing, noise gating and peak limiting; Digitech VTP-1 - 2 channel tube pre-amp digital output conversion; Eminence - Selection of drivers from this top value speaker manufacturer from Kentucky, USA; Proline-Monroe Design - High performance cabinets designed in Australia by Canberra's Stuart Monroe.

CC's Light & Sound P/L
Address: 538 City Road, SOUTH MELBOURNE VIC 3205
Tel: (03) 9690 3999 Fax: (03) 9690 3988
Stand No: W8
Commencing operations in 1989, CC's Light & Sound has established itself as a specialist supplier of P.A. and lighting equipment. CC's Light & Sound's second-hand catalogue, now in its 9th year of publication, is a valuable resource for customers Australia-wide to purchase quality second-hand equipment. Second-hand equipment is backed by our unconditional money-back guarantee. Stop by the stand to pick up the special ENTECH edition catalogue. As well as second-hand equipment, CC's Light & Sound supply a wide range of new products from leading manufacturers. These include JBL, Martin, Prolite, Jands, Australian Monitor, Soundcraft, AKG and Shure. CC's Light & Sound is the incumbent MARTIN DEALER OF THE YEAR. Our stand will feature Martin intelligent lighting together with the cost effective Martin 3032 PC control system. Personnel at ENTECH: Roger Clapton - Managing Director; Rick Baker - Director; John Dignam - Sales Manager; David Strahan; Jim McMillan. Products to be Exhibited: *Bargains galore!! Crazy prices on selected lighting and audio products for ENTECH only!!*

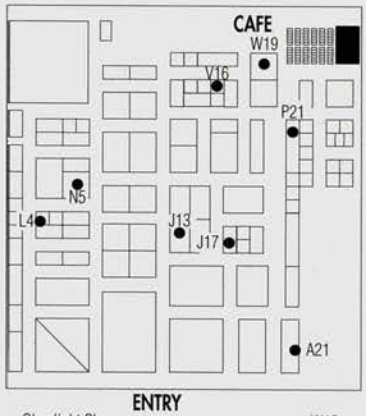
Chameleon
Address: 7/41-45 Bourke Road (PO Box 206), ALEXANDRIA NSW 2015
Tel: (02) 9310 5222 Fax: (02) 9310 5511
Stand No: S1
The Chameleon Group is one of Australia's leading professional lighting companies. With experienced staff, a diverse equipment inventory and in-house manufacturing facilities, we provide systems for events ranging from school plays to arena concerts. The Chameleon Group incorporates a Manufacturing and Sales arm, Advanced Lighting Equipment (ALE), which manufactures trussing, stands, clamps, lighting electronics, a wide array of custom items and designs,

Active lighting Pty. Ltd.
1-7 Queens Avenue Hawthorn 3122 Victoria Australia
Telephone:(613) 9819 6912 Facsimile:(613) 9819 6008
Production, design & hire for concerts, corporate theatre, danceparties & special events
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Colorset colour scroller systems
Moving light systems (large & small)
ACT/CONN/001

distributes Altman Stage Lighting and White Light equipment and is able to produce all rigging requirements. Some of these key personnel will be present at Entech '97: Tony Davies - Managing Director, Michael Tanner - Sales & Marketing, Robert Nicholls - Hire Manager, Andrew Kellemen - Maintenance Manager, Chris Curran - Hire Assistant, Ian Yensch - Factory Manager (Production), Bruce Sakey - Stores, Simon Lazareff - ALE Production Manager, Sacha Gulliver - Sales Secretary, Graham Walker - Senior Systems Engineer, Scott Bason - Senior Account Manager, Penny Kemp - Administration Manager, Geoff Kelly, Crispin Rock - Production Managers. New/Feature Products: Chameleon, as Australian distributor of Altman Stage Lighting products, will be showcasing the new T.V/Film luminaire range and Shakespeare profile ranges, along with Whitelight's new Wave FX.

Clay Paky *see* Show Technology

Clearlight Shows
Address: 9 Horscroft Place (PO Box 395), MOORABBIN VIC 3189
Tel: (03) 9553 1188 Fax: (03) 9553 4401
Stand No: W19
Since being founded in 1978 we have been servicing the rapidly developing Australian lighting industry. Our company provides cutting edge technology to the television, theatre and presentation industries and has pioneered High End Systems' products into the Australian market. Our production department combines technical expertise with practical application, delivering cost effective designs to meet our client's brief. Our hire department has a diverse range of products to service all aspects of lighting from display to theatre and theatrical effects having agencies for most of the world's leading lighting products. Our sales department can deal where others can not.



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CLS	N5
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Coemar DeSisti Australia	P21
Connections Magazine	A21
Crew Room / Gig Power	V16
Digidesign/AVID Technology	J13
Disco & Dancing Magazine	L4

CLS
Company Name: Concert Lighting Systems
Address: 282 Normanby Road, PORT MELBOURNE VIC 3207
Tel: (03) 9646 8444 Fax: (03) 9646 8555
Stand No: N5
Trevor Lloyd - Managing Director; Anna Angelico-Bakker - Business Manager; Sharyn McKee - Sales Manager; Leigh Greig - Head Electrician/Production Manager; Marie Franze - Hire and Production Co-ordinator; Christine Wille - Sales and Administration. Concert Lighting Systems specialises in hire and production, manufacturing, rigging and sales. Our staff will be able to assist you with enquiries on all aspects of lighting whether it be purchasing luminaires or planning your next corporate, theatrical or festive event. We have a vast array of lighting and rigging equipment to suit small to large scale events. Our purpose is to provide high quality lighting equipment for entertainment, exhibitions and displays. We provide excellent service to all our customers. Our company's success is built on loyalty, good teamwork, pride in our professional image and our competitive nature. Concert Lighting Systems is introducing to ENTECH 97: • Folding Tri Truss; • Great Australian Market - Moving Light Gobos - compatible with High End products, and • GelFile - a database of technical and visual information about colour filters.

CMC Music
Address: 33/9 Powells Road, BROOKVALE NSW 2100
Tel: (02) 9905 2511 Fax: (02) 9905 0189
Stand No: J17
CMC Music are the exclusive distributors for PHONIC professional audio products, AZDEN wireless microphone systems, as well as ERNIE BALL, high quality US made microphone and speaker leads. CMC will feature exciting new products from PHONIC such as their new range of power amplifiers, contractor power amplifiers, powered mixers and unpowered mixers, all at very competitive prices and high quality. AZDEN have just released their fantastic new UHF wireless microphone systems. Available with Lavalier microphone or hand held microphone, they offer 63 usable channels! Pat Bonham, Manag-

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As industry leaders for the past 20 years we have specialised in providing high quality equipment for entertainment, exhibitions and displays throughout Australasia.

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• GE Lighting • Philips • Osram • Rosco • Lee • Socapex • Camlok
• Nashua • Litecraft • CLS Truss, Stands and Clamps.

Tel: (61-3) 9646 8444 Fax: (61-3) 9646 8555
282 Normanby Rd Port Melbourne Vic 3207

ing Director and Bill Riley, Sales, will be on Stand J17 to answer any questions you may have.

Coemar De Sisti Australia Pty. Ltd.
Address: 36A Clements Avenue, BUNDOORA VIC 3083
Tel: +61 3 9467 8666 Fax: +61 3 9467 8667
Stand No: P21
Coemar De Sisti Australia Pty Ltd is the regional office of the giant Italian manufacturers Coemar Spa. and De Sisti Srl. Coemar are well-known worldwide as manufacturers of both intelligent, effects, and theatrical lighting. Coemar have recently introduced new additions to their flagship NAT range in the form of the MM (Moving Mirror Technology). NAT's featured on recent world tours for Michael Jackson and Neil Diamond, and at the Atlanta Olympics. De Sisti manufacture world-class film & television luminaires. Their products are innovative to the extreme and feature in the major television studios worldwide. They are the choice of professionals. CDA provide a direct factory presence in the Australasian region, offering Australia's only complete factory service for lighting professionals. Service is our hallmark.

Connections Magazine
Address: PO Box 439, Epping NSW 2121 Australia
Tel: (02) 9876-3530, Fax (02) 9876-5715
Stand A21
Connections Magazine is the trade journal for the entertainment technology industry, with editorial sections monthly dedicated to audio production, audio visual and stage lighting. Come by our stand and give us your views on our coverage, now in its 5th year. Also we have an unbeatable array of books and technical publications on sale. Audio, lighting, video, staging and more - including software and the MIX test CD. Come browse, and check out our unbeatable show specials - and T-Shirts! Meet Connections writers on the stand - Cat Forcer, Dan Cole, Julius Grafton, Howard Jones, Jacqueline Molloy, Mandy Jones and others can be found lounging without intent here! Other times log on to website: www.conpub.com.au

Crew Room/Gig Power
Address: 421 Graham Street, PORT MELBOURNE VIC 3207
Tel: (03) 9646 8184 Fax: (03) 9645 4166
Stand No: V16
The Crew Room and Gig Power provide a valuable back up service to the entertainment industry. From casual crewing to velcro to batteries, the goods and services available are never ending Too numerous to mention here, call into the stand for a chat and find out how they can help you.

Digidesign/AVID Technology
Address: Level 1, 166 Epping Road, LANE COVE NSW 2066
Tel: (02) 9937 1800 Fax: (02) 9937 1888
Stand No: J13
Digidesign & AVID are the world leaders in non-linear audio and video editing. The Pro Tools system consists of a combination of Digidesign hardware and software running on a Macintosh computer. This combination provides audio and musical possibilities that exceed any equivalent product - or combination of products - on the marketplace. Pro Tools is the musician, composer, and producer's ultimate dream - the "studio in a box" that provides recording, mixing, editing and mastering capabilities all on the desktop. The hardware that you choose to use with Pro Tools software may vary according to needs and budget. The functionality of Pro Tools software will also vary depending on which Digidesign hardware you choose or whether you opt to rely only on the Macintosh CPU's processing power (Pro Tools PowerMix). Avid MCXpress is the only Macintosh/NT digital video production tool in its price range that delivers the powerful editing, finishing tools and broadcast-quality images you need to turn your creative vision into profits. If you're an independent producer doing corporate communication or multimedia projects, it's the one tool you can't afford to do without.

Disco & Dancing Magazine
Company Name: MIELLE SRL
Address: Via Mario Donati No. 6, MILANO ITALY 20146
Tel: +39 2 4771 0636
Stand No: L4
MIELLE SRL is the publishing house of Disco & Dancing, the most authoritative Italian Magazine dedicated to trends and technology in discotheques, night time entertainment, live concerts and professional shows. MIELLE SRL also published the "Spellacolo gell Architettura" book guide for knowing the best Italian architect designers of discos. Linea

ENTECH WISH TO THANK THE 1997 AWARDS SPONSORS!

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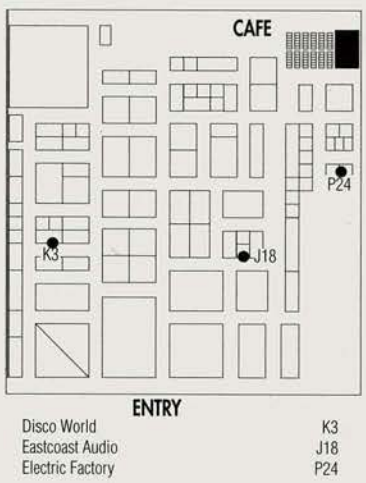
QANTAS

STAGE & SCREEN

Mielle is the publishing house of the Guide to Club suppliers, valuable connections between companies and entrepreneurs; the annual provides a sort of "Yellow Pages" when it's easy to find the company with address and phone numbers that you're interested in.

Disco World
Address: Factory 20, Cave Hill Industrial Gardens,
Cave Hill Road, LILYDALE VIC 3140
Tel: (03) 9735 0588 Fax: (03) 9739 5441
Stand No: K3
Disco World will be displaying: Dynamite par cans, helicopters, pinspots, mirror balls, smoke fluids; Ryger (UK) intelligent lighting, effects controllers, stage controllers, powered controllers, dimmer and switch packs; Stanton





Disco World K3
Eastcoast Audio J18
Electric Factory P24

Cartridge line *(pictured above)*, Headphone line, Styli; Smoke Effects Co. (UK) complete range of smoke machines - Gremlin, Predator, Terminator. Our international guest is Michael Hellier, Managing Director of Smoke Effects Co. (UK).

Eastcoast Audio
Address: PO Box 2333, RICHMOND SOUTH VIC 3121
Tel: (03) 9428 9797 Fax: (03) 9427 9898
Stand No: J18
Eastcoast Audio, the Melbourne based distributor of Aphex signal processing equipment, will be showing the full range of Aphex products, from the budget priced range to the full professional series, and it is hoped that this will include the new digital FM processor, which has been designed for professional broadcasters. Products featured in the budget priced series include the now famous Aural Exciter and the Stereo Tube mic pre-amplifier with the Tubessence® circuitry now used in many Aphex products. Robert Bontschek and Tony Conroy will be on hand to provide assistance during the show.

Electric Factory
188 Plenty Road, Preston VIC 3072
Tel (03) 9480-5988, fax (03) 9484-6708
Stand number: P24
Representing: Celestion, Samson Audio, Samson Wireless, TL Audio, Alesis, Ensoniq, Emagic.
Present: David Bray, Ray Kimber, David Field, Kevin Blackley.
New for ENTECH- Celestion Road series speaker cabinets, TL Audio Crimson Series, Ensoniq DP Pro, Emagic Audiowerk

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Wish to congratulate all Entech Award nominees & recipients for their vital contribution to our vibrant industry.

More professionals use Pro Tools than all other workstations combined.
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www.digidesign.com

lectrosonic Systems
Address: 37-43 Carnarvon Street, SILVERWATER NSW 2128
Tel: (02) 9714 0400 Fax: (02) 9748 4391
Stand No: U19
Electrosonic Systems are the exclusive distributors for Celco, Electrosonic, Wolf and Ibero-Shon and have recently taken on the exclusive distribution of the Maris Ensing Ltd range of DMX and show control products. The stand display will feature various products from these manufacturers, including the following: The new and much acclaimed Celco Ventura 1000 lighting control desk; The Electrosonic 2xView low cost, free standing videowall display; The Maris Pico, probably the smallest DMX lighting desk in the world!; The Celco M9, providing videowall control from a lighting control desk; Digital sound stores from both the Electrosonic and Maris and many other products.

Elektralite *see* Show Technology

Elsta Audio and Lighting Company
Name: Entertainment Lighting & Sound Technologies Aust
Address: 629 Parramatta Road, LEICHHARDT NSW 2040 Tel: (02) 9568 2100 Fax: (02) 9568 2300
Stand No: F18
ELSTA specialises in manufacturing, importing, exporting and distributing professional lighting and audio. Whilst one year young the history of the principals can be traced back to the early eighties. Elsta offers a truly complete audio and lighting portfolio, with product lines from Light Emotion, F.A.L. *(pictured)*, Tenlux, Ecen, Lorantz, Lite Puter, OMP, Botex, Laser Showsystems, ESP, Gecko and Meteor, covering the needs of mobile disc jockeys, nightclubs, bands, stage and theatre. As new technology advances Elsta will continue to supply product excellence, economical, quality solutions and technical support. New/special feature products: Include Laser ShowSystems Starbeam 5 (worldwide release); New ESP Technology CDD025 Dual CD Player, mixers and ESP CLUB audio system; new ECEN Wireless Mic's; Botex DMX high powered 512 remote controlled strobe and laser; the FAL 2000, official launch of the FAL 1000 intelligent scanner; Gecko lamp range.

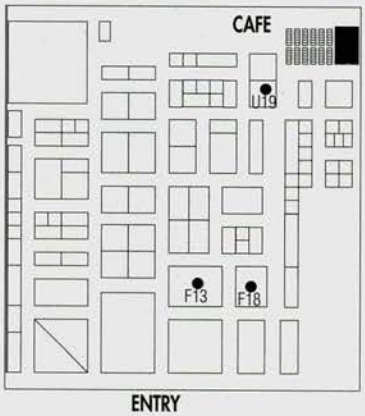


Special guests: Dave Miller - President, Gecko USA; Banley Cheung - Marketing Director, Botex Hong Kong; Michial Barabasz - Managing Director, Lorantz Australia; and Jerry Wyatt, Laser Showsystems Miami USA. Elsta's general manager Andrew Boyden will also be present.

EVI Audio
(Formerly Mark IV Audio Australia)
Address: Unit 24, Slough Business Park, Slough Road, SILVERWATER NSW 2128
Tel: (02) 9648 3455 Fax: (02) 9648 5585
Stand No: F13



A huge range of ALL new product to be shown. New from Vega - Wireless Systems including U2020 Frequency Agile System & R672 High-End UHF System New from Electro-Voice - Next generation of DELTAMAX, S-Series range of professional entry level speaker systems, SX200a powered version of the popular SX200, KW Series new range of lightweight amplifiers, various new ranges of music and stereo microphones. New from DDA - CS8 & CS12 mixing consoles. New from Altec Lansing - DTS200, DTS94, DTS99 full range speaker systems, new 7000 Series IT amplifiers. New from University Sound - Easy Mount ceiling speaker systems. Merlin - New Product! Computer controlled signal processing range. AMSYS - Computer design system. Also on display - Midas XL4 mixing console. EVI Audio delegates attending: Ian Johnstone, National Sales Manager; Phill Webb, Pro Audio Products Manager; Michael Doherty, Contracting Products Manager; Francesca Peskops, Marketing & Promotions; Allan McIlvride, EVI Audio Melbourne.



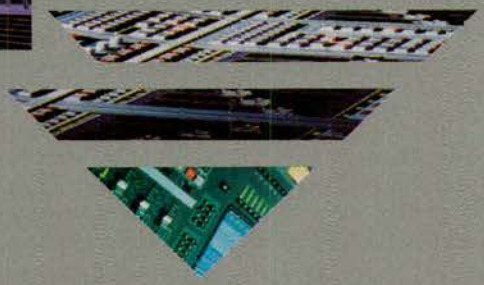
Electrosonic Systems	U19
Elsta Audio & Lighting Company	F18
EVI Audio (formerly Mark IV Audio)	F13

Connections
$25 SUB!
One year, 11 issues, $25! Stand A21 - at the front

Conference, Seminar & Support Programme

EnTech





Entertainment Technology comes alive ~ with Seminars, Conferences, Product Clinics, Training Sessions, Product Comparisons. The ENTECH Awards and MUCH more!

Conferences commence Tues APRIL 22nd

Trade Show & full programme:

Wednesday APRIL 23, 10am - 6pm

Thursday APRIL 24, 10am - 6pm

Friday APRIL 25, 10am - 6pm daily

See thousands of products at the new Melbourne Exhibition Centre

EnTech

ENTERTAINMENT TECHNOLOGY ON SHOW

OUR SUPERB VENUE!



The venue is crucial for ENTECH. For without it, there would be no show. Melbourne Exhibition Centre was opened just last year to critical acclaim. As trade show organisers we particularly like the Ambience, or VIBE. It's got a theme throughout which helps to break down the enormity of the space. And enormous it is!

MELBOURNE EXHIBITION CENTRE

For ENTECH 1997 we occupy 7,500^{m2}, while the VMA 97 trade show occupies 3,000^{m2}. The two shows are together at the Clarendon street end of the complex, nearest to the new Casino and the bridge across the Yarra to town. Town is just *THERE*, a short walk. In many ways the Melbourne Exhibition Centre is better placed in relation to hotels and the city than the Sydney centre where we run ENTECH each 'other' year

As a visitor to ENTECH you'll benefit from easy parking, great public transport links, and plenty of extra space. Because as usual we have given over a high percentage of our floor space towards extra seating (in the cafe zone) and meeting places for you.

ENTECH is a 'business class' trade show, with more room, the best possible facilities and presentation, and a serious commitment from us, the organisers.

ENTECH is held every April. Next year it is in SYDNEY, April 23 > 25th.

1998: SYDNEY
1999: MELBOURNE
2000: SYDNEY
2001: MELBOURNE



Welcome!

Each ENTECH seems to acquire a bigger support programme. Our view is that the EXHIBITS are the primary reason to attend ~ so the support programme shouldn't get in the way.

This year it doesn't, the two major conferences - DVD Technology; and Technical TRAINING are held the day before the exhibits. Then the RETAILER conference is held on the first day ending three hours before the exhibits close. Timing is everything.

Seminars number 24 this year and they are organised into streams so they don't conflict. There are plenty of gaps for trade show floor browsing.

New are the Product Clinics, which we hope are popular because a number of exhibitors are going to great lengths to pack a lot of info into one half hour presentation. These are FREE, because they occur on the floor, up near the CAFE.

Our product evaluations step up this year with the large format moving lights (1200w & over) lined up and running side by side in the Interactive Zone. The idea is you can look, compare spec's and even listen to the devices, for even motor noise is an issue.

The PA Crescendo happens at 6pm when the trade show ends. Move quickly over the 'zone, as Security will sweep the rest of the floor. There is no way the Crescendo could run any other time, for the conduct of business - which is WHY we go to trade shows in the first place - could not happen!

Finally, we hope to have you attend the ENTECH AWARDS this year, where you will enjoy even better food and entertainment than last year, and see an expanded and enhanced awards presentation, made possible by our many sponsors!



Julius Grafton
Support Programme Organiser

INDEX TO EVENTS!

SEMINARS: Full details on page 8

CORPORATE A/V $12 each

- **F1.** Automated Audio Visual Controls for Installations and Live Events. **10am, Wed 23rd.**
- **F2.** ISDN Video Conferencing. **11.30am, Wed 23rd.**
- **F3.** Live Broadcast Techniques in Corporate Events. **1.00pm, Wed. 23rd.**
- **F4.** Venue Etiquette - minimising conflict between AV staff and Venues. **2.30pm, Wed. 23rd.**
- **F5.** Computer Graphics on-screen. **9.30am, Thurs 24th.**
- **F6.** Supplying Industry Services to Corporate Events. **11.00am, Thursday 24th.**

LIGHTING $12 each

- **L1.** Themed Environments, slide show and discussion. **4.00pm Wed 23rd.**
- **L2.** Director of Photography Roger Lanser ACS discusses film lighting. **12.00 m/d Thurs. 24th.**
- **L3.** DMX and beyond. **1.30pm Thursday 24th.**
- **L4.** Patrick Woodroffe (LD: Rolling Stones, Musicals, Ballet, Industrials. Our special guest) **3.00pm Thur. 24th**
- **L5.** Meet the LD's - our famous panel session returns. **4.30pm Thurs. 24th.** *Coffee afterwards.
- **L6.** PC based lx control. **10.00am Friday 25th.**
- **L7.** TV Lighting today. **11.30am Friday 25th.**
- **L8.** Future directions in Dimming Technology. **1.00pm Friday 25th.**

PRO AUDIO $12 each

- **A1.** Professional Record Production in Australia. Panel discussion. **4.00pm Wed 23rd.**
- **A2.** Project Studio Acoustics on a budget. **12.30pm Thurs. 24th.**
- **A3.** Music & audio production for desktop video. **2pm Thur. 24th**
- **A4.** Audio Contracting trends **3.30pm Thursday 24th.**
- **A5.** Audio Integration in the Installation. **5.00pm Thur 24th.**
- **A6.** Non Linear audio shootout! **10.00am Fri April 25th.**
- **A7.** PA design & implementation. **11.30am Frid. April 25th.**
- **A8.** Audio on the Internet. How? **1.00pm Friday 25th April.**

STAGING $12 each

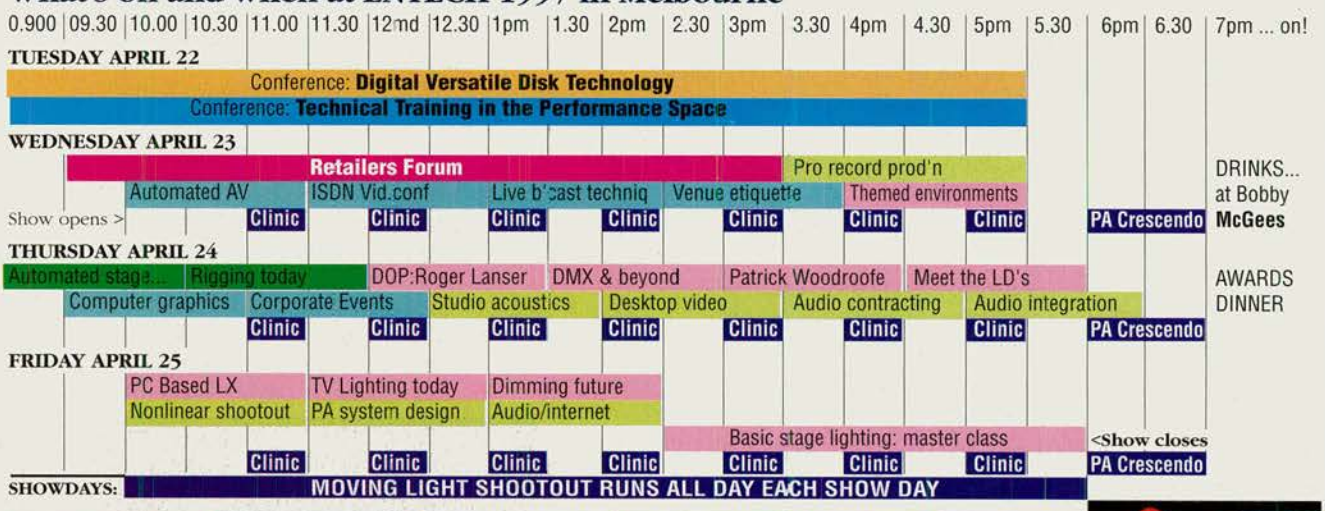
- **S1.** Stage Machinery Control Systems and the Future. **9.00am Thursday 24th.**
- **S2.** Rigging : trends and issues. **10.30am Thursday 24th**

FAST FACTS

CONFERENCES START
Tues APRIL 22 9am
EXHIBITION HALLS:
Wed. APRIL 23 10am - 6pm
Thur. APRIL 24 10am - 6pm
Fri. APRIL 25 10am - 6pm
Melbourne Exhibition Centre, Clarendon Street.
AWARDS: PLAZA BALLROOM Thursday APRIL 24 ORGANISERS: +61 (0) 2 9876-3530; fax 9876-5715 TRAVEL & HOTELS: 1-800-670-354 or FAX +61 2 9233-3261

YOUR DAILY PLANNER

What's on and when at ENTECH 1997 in Melbourne



LIGHTING | FOCUS A/V | PRO AUDIO | STAGING | FREE After entry

Exhibits open: 10am - 6pm Wed 23, Thurs 24 & Friday 25 April (Anzac Day holiday)

intercity gearhouse ENTECH AV SPONSORS

MORE INDEX NEXT PAGE>



VMA 1997 Convention

These are individual sessions held as part of the Venue Management Association convention. It is held alongside ENTECH 1997 at the same time. You can attend any one of these, they cost $50 each. *As an alternative* you can buy full VMA registration for $580 including additional VMA social events and VMA membership.

Wednesday April 23

Forum series one, 11.30pm - 12.30pm

1. CEOs Forum ~ Mr Brian Beattie, (CEO Victoria Racing Club) - Limited to CEOs or Acting CEOs

2. How Safe Is Your Venue? ~ Mr Max Croxford (Building Control Commission)

3. Ticketing - Bar Code/Swipe Card/Computer Chip ~ Ms Maria O'Connor (Ticketmaster Bass)

4. The Future - Education & Training Opportunities for Venue Manager Personnel ~ Mr Anthony Duffy (Ops Mgr Syd. Aquatic & Athletics Centre)

Plenary Session 1, 2.00pm - 3.15pm
What Makes A Leader? ~ Prof. Geoffrey Blainey

Concurrent Sessions series one 3.30pm - 5.00pm

Session A - Building Technology inc. Waste Management and Analysis, Recycling, Collection Methods, Maintenance Management, Electronics and Air Conditioning~ Mr Don Wilkinson (Fletcher Constructions)

Session B - Dealing with Boards/Directors/Trusts/Management Committees ~ Ms Sue Calwell (Chairperson WCCM)

Session C - Economies of Scale/Bottom Lines and Budget ~ Mr Ross Wilson (M.D. Tabcorp Holdings)

Session D - Emergency Management ~ Mr Barry Dean (Senior Education Officer AEMI Mt. Macedon)

Thursday April 24

Forums series two 8.30am - 10.00am

1.Running A Major Event ~ Ms Judith Griggs & Dr John Lill (Discuss the Grand Prix and AFL Grand Final)

2. Sydney Olympics - Preparation and Planning ~ Mr Laurie Jackson (Manager Facility Operations SOCOG)

3. Dealing with Promoters and Tenants ~ Mr Frank Roach (Tourven, U.S.)

4. A Commitment to Customer Service, The Single Most Important Message Your Venue Can Give ~ Mr Colin Sanders (CEO RAS NSW)

Plenary Session two 11.15am - 12 noon
Tourism - What Does It Mean To Our Industry? ~ Mr Bob Annells (CEO Tourism Victoria)

Concurrent Sessions two 2.30pm - 3.30pm
Session A - Merchandising - In House or Outsourced? ~Mr Fred Gaffney (Chair Gaffney Intern'l Licensing)

Session B - Equal Opportunity Act - What You Must Know ~ Ms Jackie Boughton (VECCI)

Session C - Human Resource Issues, including Personal Development, Delegation, Training and Recruitment ~ Ms Kerry Daly (Spotless Services)

Session D - Venue Security ~ Justin Reschke (Chubb Security)

Friday April 25

Plenary Session three 8.30am - 10.15am
Venue Management Next Century ~ Frank Roach (Tourven, U.S.)

Venue Workshop Groups 10.45am - 11.45am

**Programme subject to ammendment*

FOR A COMPLETE VMA CONFERENCE PROGRAMME CALL ENTECH ON 1-800-635-514

INDEX TO EVENTS!

CONFERENCES (See right)

• **Tuesday April 22nd** (the day PRIOR to exhibits) **TECHNICAL TRAINING.** All day, cost $175 incl lunch.

• **Tuesday April 22nd** (the day PRIOR to exhibits) **DVD: the Technology.** All day, cost $175 incl lunch.

• **Wednesday April 23rd** (during first day of exhibits) **RETAILER CONFERENCE.** 5 hours, $67 incl lunch.

BASIC STAGE LIGHTING MASTERCLASS (see page 10) 3 hours

•Presented by Chris Paterson. 2.15pm - 5.15pm, Friday 25th in the Auditorium. $25 (students $12)

PRODUCT CLINICS

FREE, HOURLY ON THE TRADE SHOW FLOOR

Wed 23rd April
10.30am Mark of the Unicorn (Moore Music)
11.30am Studio/Live microphones (Audio-Technica)
12.30pm ShowCAD show automation (CDA)
1.30pm SMAART/control (JBL)
2.30pm HOT Technology (JEM)
3.30pm MediaMatrix (Audio Telex)
4.30pm Roland audio reality
5.30pm EV/Vega radio microphones

Thursday 24th April
10.30am Mark of the Unicorn (Moore Music)
11.30am Wireless (Audio-Technica)
12.30pm CAD & visualisation for the LD (CDA)
1.30pm In Ear Monitoring (Shure)
2.30pm What is WYSIWYG? (AC Lighting)
3.30pm Symetrix audio processors (Audio Telex)
4.30pm Roland audio reality
5.30pm EV cabled microphones

Fri 25th April
10.30am Mark of the Unicorn (Moore Music)
11.30am Installed sound (Audio-Technica)
12.30pm Goldline: service not boxes! (CDA)
1.30pm Power processing, Nexsus (CREST)
2.30pm CP100- LX controller (Show Technology)
3.30pm Sabine feedback extermination (Audio Telex)
4.30pm Roland audio reality
5.30pm Merlin: audio control (EVI)

DAILY AND FREE TO SEE:

☆ **MOVING LIGHT COMPARISON:** all day
☆ **PA CRESCENDO:** systems demo'ed at 6pm daily

AND MORE.....

☆ **Training sessions** ☆ **Social Events** ☆ **DJ Events on ANZAC Day** ☆ **Exhibitor's functions**

THE TRADE SHOW IS THE MAIN EVENT AT ENTECH 1997! E OVER 100 EXHIBITORS DISPLAYING MORE THAN 3,000 PRODUCTS IN 10,500 METRES OF EXHIBITION HALL - AND ENTRY IS FREE TO TRADE

DVD: The TECHNOLOGY The CONFERENCE

EnTech

TUESDAY APRIL 22ND

• *One day PRIOR to EXHIBITS, at the new Melbourne Exhibition Centre*

DVD CONFERENCE SCHEDULE: *Tuesday April 22nd*

8.30 - 9.00	Registration
9.15 - 10.15	Session 1 Bill Foster : Keynote speaker **DVD: from roots to replication**
10.15 - 10.30	Q & A; session 1 wrap
10.35 - 11.00	*Tea, Coffee & cookie break*
11.10 - 12.00	Session 2 Koki Terui **Are you DVD ready?** DVD & the Pacific Rim nations.
12.00 - 12.15	Q & A; session 2 wrap
12.20 - 1.20	*Lunch & escorted trade show setup tour at 12.40 for interested parties.*
1.25 - 2.25	Session 3 **The silver disc demo, by Philips.** CDi, VCD & DVD demo'ed, compared.
2.25 - 2.40	Q & A; session 3 wrap
2.45 - 3.30	Session 4 Phil Tripp **DVD and the music recording industry** • How the trend looks • CD: a case history of a format no-one wanted • What the labels will do, should do and could do • Opporunities for switched on operators
3.30 - 3.40	Q & A; session 4 wrap
3.45 - 4.00	*Tea, Coffee & afternoon biscuit break*
4.05 - 5.00	PANEL Featuring all the above, plus the chairman and a group of invited industry practitioners and experts. YOUR DVD questions answered. Q & A. Nuts and bolts and technology!
5.00	Conference concludes - all attendees invited to remain for drinks and informal auditioning ....
5.10 - 6.30	Cocktails, *networking* and demo room open.



See it, hear it, feel it, touch it!

A ONE DAY conference the day prior to exhibits - Tuesday April 22nd, 9am to 5pm.

Venue: the new Melbourne Exhibition Centre, in the meeting complex upstairs at the Clarendon street end.

Conference cost includes a superb picnic box luncheon, morning and afternoon tea. Conference papers and technical papers are supplied. The package price includes a guided tour of ENTECH during its final setup day (for those who enjoy organised chaos) and a **cocktail party** at the end of the day for *superior networking*.

This conference costs just $175 all inclusive. You are then registered to attend all exhibits and product clinics at ENTECH, starting the very next day at 10am.

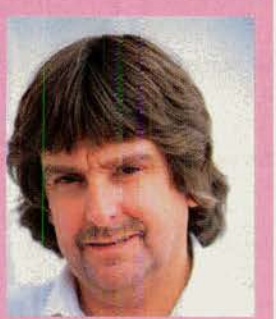
DVD is the most exciting new media yet released, promising multi purpose applications from a high capacity CD sized disk. Consumer video on DVD has been released, DVD-ROM for computers will follow. Then comes DVD-Audio.

No one company 'owns' DVD, we de-bunk the bunk and de-mystify the hype-meisters!

Your DVD Conference team ~

• CHAIR: **Howard Jones**
Howard runs Studio Solutions in Sydney and is a contributing writer for Connection Magazine.

• KEYNOTE: **Bill Foster** *(pictured, right)*
Editor, One to One, the UK replication mag, Bill established the worlds largest mastering facility in 1975. He is an Emerging Technology expert and commentator.



• Koki D. Terui
Pacific Rim VP for Sonic Solutions, based in Tokyo.

• Hendrik Duinker
Multimedia products manager, Philips S & I.

• Phil Tripp
Music industry analyst, publisher, technologist, orator.

... and others to be added. Late news- see: www.conpub.com.au

WE DEAL WITH ISSUES LIKE~

- Mastering, authoring to DVD
- **DVD - the audio spec**
- Replicating DVD
- Vision & DVD: MPEG & AC3
- DVD-ROM: new multimedia
- Surround sound mixing
- DVD business opportunities
- DVD and obsolescence
- Will the internet hobble DVD?

BOOKING FORM ON BACK PAGE OR DIAL 1-800-635-514



RETAIL in a hi-tech world
The CONFERENCE

WEDNESDAY APRIL 23RD BETWEEN 9.30AM AND 3PM

• *The FIRST day of ENTECH, at the new Melbourne Exhibition Centre. Cost is $63 including lunch.*

Retail can be a lonely existence. Today's ENTECH retailers sell high-tech audio, lighting, video, AV, musical, computer & studio equipment. ***and more.***

Yet the issues we all face are identical. Our conference will deal with .....

- Hi Tech retail: what is this?
- Retail price vs. street price
- Role of the distributor in 1997
- Internet sales and the retailer
- Managing your retail business
- Motivating staff, retail rules
- Preventing/recognising theft
- Marketing and advertising your business
- Networking with other stores
- Sales tax, a hidden gain
- Get them in the door
- Managing Change: dealing with shorter product shelf life.

A PERFECTLY TIMED conference on the day prior to exhibits - Wednesday April 23rd, 9.30 am to 3pm. Time to get from the airport, time to browse the exhibits until 6pm afterwards, time to catch the PA CRESCENDO from 6pm.

Venue: the new Melbourne Exhibition Centre, in CONCOURSE SUITE ONE, upstairs from the concourse outside ENTECH, at the Clarendon street end.

Inclusions: The conference cost includes a working luncheon, and morning tea. Conference papers are supplied.

This conference costs just $63 all inclusive. You are then registered to attend all exhibits and product clinics at ENTECH which runs until 6pm daily, ending Friday April 25th (ANZAC DAY)

Your RETAIL Conference team ~

• CHAIR: **Julius Grafton**
Editor of Connections Magazine, formerly proprieter of high tech audio and lighting retail, hire, production, manufacturing and installation outlets for almost 20 years.

• KEYNOTE: • **Phil Tripp**
Music industry analyst, technologist, internet expert. Phil has owned an audio business in Atlanta, is a one time Palings manager, and operates Immedia!, the music industry PR firm.

• **Ken Killen**
Long term insurer to the industry, an expert in risk management.

• **Janet Lindbom**
Retailer (The Bass Player), importer (Bottom End Distribution)

• **Peter Gibson**
... is from Australian Sales Tax Consultants, based in Sydney and was formerly a tax officier.

Panelists: **David Hines** (Australis Music Group); **Duncan Fry** (ARX Systems) ... and others to be added. See www.conpub.com.au for the latest news.

RETAILER CONFERENCE SCHEDULE: Wednesday APRIL 23. **Comences 9.30am**

Session: **Hi Tech Retail - What is this?**
- Product inclusions: Pro Audio, High End Music Retail, Lighting, Software, Recording Equipment, DJ gear, etc.

Session: **Business risks: doom and troubles**
Speakers: Julius Grafton & Ken Killen
- Case histories: those who have suffered
- Types of risk, the A - Z : will we cover them all?
- Costs and strategies to minimise risks
- C-Tick: a new regulation affecting all from now

Session: **Sales Tax - A hidden gain!**
Speaker: Peter Gibson
- The sales tax portion of your stock may be an asset.
- Pre-paid Sales Tax or Cash Flow - you choose

Session: **Store Security to Retail Statistics.** The retail rundown
Speaker: Janet Lindbom
- Security cameras to staff training.

Session: **Sales, Motivation & Marketing.**
Speaker Phil Tripp
- Get them in the door
- Marketing, branding & trust
- Advertising your business
- Managing change

Session: **Panel Discussion:** The role of the Distributor in the new order
- Margins, Discounts, Product shelf life, Internet & the demotion of the Distributor, import tariffs etc. Issues, Q & A, debate!

3.00pm **Conference closes,** with 3 hours left to browse the exhibits.

TO BOOK ANY EVENT AT ENTECH 1997:

- **In advance** ~ and before April 18th ~ use the form at the back of this section, or phone 1-800-635-514.
- **At the show** ~ walk up and buy at the Registration area. Naturally there is a limit on availability.
- **Between April 18th and the start of ENTECH** we regret we *cannot* take phone bookings as the computer system will be away at Infosalons, our registration people, being converted to their UNIX based format. We can however advise on known availability, so do call.

ENTECH: DIAL 1-800-635-514 OR BROWSE WWW.CONPUB.COM.AU

TECHNICAL TRAINING
The CONFERENCE

EnTech

TUESDAY APRIL 22ND

• *One day PRIOR to EXHIBITS, at the new Melbourne Exhibition Centre*

Venue: the new Melbourne Exhibition Centre.

Conference cost includes a superb picnic box luncheon, morning and afternoon tea. Conference papers supplied. Package price includes a guided tour of ENTECH during its final setup day and a **cocktail party** at the end of the day for *superior networking*.

This conference costs just $175 all inclusive. You are then registered to attend all exhibits and product clinics at ENTECH, starting the very next day at 10am.

Programme: *Tuesday April 22nd*

8.30 - 9.00 Registration & Coffee

9.00 - 10.30 Session 1

Training Institutions and Industry — The Great Divide

What are industry requirements in regard technical training and are they being met by training institutions? Panellists from both training institutions and employer bodies will present papers around this issue. This session will conclude with an open forum and audience questions.

• Panellists: Noel Browne; Kate Davy; Tom Misner; Michael Sutherland; Leon Dark; Paul Kosky; Intercity Gearhouse; film/TV industry participant t.b.c.

10.30 - 10.45 Morning Tea

10.45 - 12.15 Session 2

Skills: Getting Them and Building Them

This panel will deal with some of the issues involved in recognising and building on existing skills: accreditation and remuneration, the portability of existing skills, up-grading and re-grading. The session will conclude with a forum discussion on how to best use the vast existing pool of skills.

• Panellists: Jef Hammersley; Charles Livingstone; Dan Nicholas; Cassandra Parkinson; Paul Streefkirk.

12.15 - 1.15 Lunch

1.15 - 2.15 Session 3 **Skills Audits**

The evaluation, measurement and estimation of skills will be addressed by the panel. • Panellists: Charles Livingstone; Cassandra Parkinson; Vlad Krajsic.

2.15 - 3.15 Session 4

Training Options — Dine In or Take Away?

This panel will address the question of available training options for re-skilling, up-grading within the working industry. Options discussed will include in-house training, employing contract trainers and using outside institutions. This session will also discuss marketing your training to others and will include a forum discussion on the difficulties of accommodating training and production within the same organisation.

• Panellists: Vlad Krajsic; Jenny Lee; Dan Nicholas; Duncan Ord; Michael Sutherland; Tony Youlden.

3.15 - 3.30 Afternoon Tea

3.30 - 4.30 Session 5 - **Skills For Tomorrow's Productions**

What new production skills or skill-mixes will be required for the next two to five years? Panellists from leading edge suppliers and manufacturers, commercial entrepreneurs, venues, technocrats and consultants will attempt to pinpoint emerging trends in skills and technologies. • Panellists: Denis Irving; Kerry Saxby; representatives from manufacturing and audio/vision industries t.b.c.

4.30 - 5.00 Session 6 **Open Forum**

This session will provide an opportunity for all participants and panellists to address the issues which have arisen during the day.

• Panellists drawn from the days proceedings.

5.00 - 6.30 **Cocktails and networking!**



Training Conference Participants

Chair: **Andy Ciddor** *(pictured)* is a lecturer in Technical Theatre and Stage Lighting at Edith Cowan University, WA and a practicing freelance theatre consultant. Andy is also a contributing writer for *Connections* magazine.

• **Noel Browne** is the Head of Theatre Technology at Box Hill TAFE, a Technical Consultant and a freelance Lighting Designer.

• **Kate Davy** has been recently appointed as the Head of Technical Production at the National Institute of Dramatic Art and is an experienced lighting designer, stage manager and events organiser.

• **Leon Dark** works at the Victorian Arts Centre as Head of Department, Lighting, with responsibility for staffing and operation of the 5 venues at the VAC.

• **Denis Irving** runs Entertech, a theatre consultancy company with over 30 years experience covering most venues in Australia and New Zealand.

• **Jef Hammersley** from the School of Mines and Industries, Ballarat, is involved in a range of projects including the APACA Traineeship and the RPL project.

• **Paul Kosky** is the General Manager and Senior Music Producer and Engineer of KISS MUSIC Recording Studios with 15 years recording experience for successful local and international artists including *Rage Against The Machine* and *Crowded House* and others.

• **Vlad Krajsic** currently works at the Sydney Opera House as a technical training contractor responsible for devising, overseeing and marketing workplace and in-house training.

• **Jenny Lee** works as a Curriculum Manager for the Dept for Employment, Training and Further Education S.A., responsible for award courses in Expressive and Visual Arts and convenor/facilitator of a national curriculum in Technical Production.

• **Charles Livingstone** is a Federal Industrial Officer with the Theatrical section of the Media Entertainment and Arts Alliance. Charles has been involved in a number of training related projects including projects related to skills audits and curriculum development in the live theatre industry.

• **Tom Misner** owns the of School of Audio. The SAE has 23 schools worldwide and is the largest institution of its kind in the world.

• **Dan Nicholas** is the Centre for Performing Arts project co-ordinator at the Adelaide Festival Centre Trust. He is also Project Manager for the Arts Trust Training Partnership and joint Project Manager of the Theatre Technology Training Project (RPL Assessment Instruments).

• **Duncan Ord** is the Dean of the Western Australian School of Dramatic Arts, WA Academy of Performing Arts (WAAPA), Edith Cowan University. Duncan's professional experience includes over 150 professional lighting designs for theatre, opera and puppetry.

• **Cassandra Parkinson** is the Chief Executive Officer for CREATE Australia, the National Industry Training Body for the Arts and Cultural Industries. Cassandra has had an extensive background in vocational education and training.

• **Kerry Saxby** has a trade in industrial fitting from a background in industrial process control. He has worked as a casual mechanist and lighting technician and is currently completing his 9th year as Supervising Technician with the Melbourne Theatre Company.

• **Paul Streefkirk** is the Operations Manager at the Darebin Arts and Entertainment Centre in Preston. He has been involved in education for over 10 years and is a qualified workplace assessor and a member of the steering committee for the RPL Project.

• **Michael Sutherland** is the Executive Officer of the TEAME Multimedia and Entertainment industry training company. His background is journalism.

• **Tony Youlden** is a teacher and Head of Theatre Technology at the National Institute of Dramatic Art. He is currently writing modules for an external syllabus in technical theatre. He has an extensive live theatre technical background.

• **Intercity Gearhouse** are a national audio and visual presentation and staging firm.

Training Conference Chair and Director: **Andy Ciddor**
Research and Conference day manager: **Daniel Cole**

USE BOOKING FORM ON BACK PAGE OR DIAL 1-800-635-514

SEMINAR PROGRAMME

SEMINARS DURING SHOW DAYS, WED APRIL 23, THUR 24, FRIDAY 25 (ANZAC DAY)

Seminar Programme 1997. $12 each

Briefly: ENTECH has always hosted Seminars, each is of up to one hours duration, and costs $12. A Seminar Open Pass costs $114. The imperative is to educate, not sell products. Mostly the Seminars are generic, although occasionally a company will present a Seminar on a unique technology. For 1997 we have improved the Seminars -

- Papers / notes supplied with each Seminar
- All A/V equipment courtesy of Intercity Gearhouse
- Seminar Theatres acoustically isolated from tradeshow
- Stream managers are on the job for better quality

WHERE? The SEMINARS are held in the CONCOURSE SUITES above the trade show floor. How to get there: the entry is outside the show hall, in the Public Concourse. Exit the hall and look for Concourse One and Concourse Two. It's easy!

BOOK IN ADVANCE? There are only 110 seats at each seminar! Some Seminars will be sold out before ENTECH starts, others will not. And there is always the possibility someone may cancel, so you can try to buy tickets on the day. The ticket sales are from the main REGISTRATION area outside the trade show hall, again on the Public Concourse.

CORPORATE A/V SEMINAR STREAM

Presented by **FOCUS** *(Federation of Communication Users and Suppliers) in the FOCUS THEATRE. Located at: Concourse Suite 1. Upstairs, entry from public concourse - where the registration occurs. Look for the sign and the doorway.*

• **F1** 10am Wed 23rd *Concourse suite 1*
Automated Audio Visual Controls for Installations and Live Events (45 minutes)
Presented By Dataton Australia this informative session will look at the some of the latest technology available for use in installations and live events. Dataton has rapidly become a popular control system in this territory for both live "one off" events and fixed installations. The Dataton system enables control of devices such as Betacam Players, dimmers, Lighting desks, CD's, Mini Disc and Computers with applications such as Macro Media Director and PowerPoint. The system also runs Display and switching equipment such as video projectors and staging items.

• **F2** 11.30am Wed 23rd *Concourse suite 1*
ISDN Video Conferencing (1 hour)
Presented by Jacquelyn Palmer, Network Vision Systems, Melbourne ISDN Video conferencing has been a major break through in easy to use dialup Video conferencing systems. The ease of use as seen an explosion in the number of corporate events each year that are now including a video conference as a viable alternative. In this session hear from the experts in relation to the pro's & con's of ISDN video conference systems, what to look out for, what the international standards are and image enhancements including the difference between 128k and 384k links. What systems are available?

•**F3** 1.00pm Wed 23rd *Concourse suite 1*
Live Broadcast Techniques in Corporate Events (45 minutes) Presented by Murray Tregonning (Murray Tregonning & Associates) Many large corporate events now rely on a vast amount of live broadcast expertise in audio quality, Telephone Line Hybrid interfacing , two-way audio for video conferences etc. Learn the areas where Live Broadcast Techniques can impact on your productions & schedules, the benefits of broadcast experience.

• **F4** 2.30pm Wed 23rd *Concourse suite 1*
Venue Etiquette - Minimising conflict between AV Staff and Four & Five Star Venues (45 minutes) Hints on how to better understand Four and Five Star venues operations and how working with the venue can assist in the smoother running of Corporate Presentations and Entertainment elements. Better understanding the security needs of venues, floor staff roles and how prior co-ordination will make things run smoother.

•**F5** 9.30am Thurs 24th *Concourse suite 1*
Computer Graphics (1 hour) Presented by 'Art' Lewry, Australian Business Theatre. How you can use computer graphics to enhance your clients on-screen images, follow through the theme of the conference or awards with the use of on-screen graphics, Pitfalls to look out for and some of the common programs - PowerPoint & Macromind Director and not so common ones you might encounter. How to best handle many different presentations at the one seminar.

•**F6** 11.00am Thurs 24th *Concourse suite 1*
Supplying Industry Services to Corporate Events (1 Hour) Presented by Alex Bialocki - Encore Presentations, Melbourne. What does the Corporate market want from the Audio Visual & Entertainment Industry? Equipment Standards, Service Levels, Staff and Image. Whether it is a Conference, Seminar, Incentive or Christmas Party find out ways in which you can better market yourself to the lucrative Corporate Sector. A little pain but big gains if you equip yourself to meet the corporate needs.

**The organisers wish to thank FOCUS, in particular Russell Bennett, and also thanks to Bruce Brown for input and ideas.*

Guarantee

If you have any questions unanswered after any Seminar or Conference session, just contact me and I will get you the answer.
-Julius Grafton, co-ordinator.

SEMINAR PROGRAMME

EnTech

PRO AUDIO STREAM

PRO AUDIO

Stream manager Andrew Scott, well known digital audio consultant. *Except these Seminars managed by Julius Grafton, editor of Connections Magazine.

• **A1** 4.00pm Wed 23rd *Concourse suite 1*
Music Production in Australia. What is the future?
Panel discussion with expert panel canvassing the next five years in the music industry. The panel comprises members from across the industry; such as recording studios, record companies, managers and producers. Topics include: • Changes in technology, • Copyright, •Recording Studio futures,
Panel to include **John Woodruff** (manager, publisher) **Mark Pope** (manager of A & R at Warner Bros), **Simon Leadley** (Manager, Trackdown Studio) and **Ross Fraser** (Producer, director Gotham Records), and moderated by **Andrew Scott**.

• **A2** 12.30pm Thursday 24th *Concourse suite 2*
Project Studio Acoustics on a budget
Presented by James Heddle, principal of an acoustical consulting practice based in Brisbane, formerly involved in music sound production.
• Studio projects are usually constrained by budgets, this session lays out the requirements for studio design from an acoustic perspective. It will detail avoidance of room acoustic defects, room treatment and control of noise transmission.

STAGING STREAM

STAGING FLYING & RIGGING

• **S1 9.00am Thursday 24th** *Concourse suite 1*
Stage Machinery Control Systems and the Future.
Presented by Ted Fregon and John Drummond Montgomery of Bytecraft Pty Ltd. • This seminar deals with key issues concerning the development of Stage Automation at the present moment, and what they foresee as the likely developments for the future.
• Should customers be given everything they demand?
• How automated should automation be?
• Automated patch systems - overview.
Bytecraft have been developing -and exporting- stage automation control systems for the past 10 years.

• **S2 10.30am Thursday 24th** *Concourse suite 1*
Rigging : Trends and issues.
Presented by Tony Good of Show Tech rigging (Melb). Points to be covered include-
• Rigging & law -new legislation affects productions;
• Rigging - plan it, don't ALSO it!
• Ground support - roofs, stands and rigs
• Rigging, staging & automation- tricks and traps.



• **A3** 2.00pm Thursday 24th *Concourse suite 2*
Audio Generation for Desktop Video
Presented by **James Hare** from Hare Brained Ideas (Syd).
This is an advertising agency (possibly the first!) focused exclusively on the music retail industry.
• This SEMINAR takes the viewer thru the issues of creating audio for and on desktop video applications. Details hardware needed (and not!), software and knowledge. Gain understanding how audio and video are combined, creative solutions to problems and how fast this process can be compared to older techniques! A real world project will be detailed, and there will be plenty of Q & A.

• **A4** 3.30pm Thursday 24th. *Concourse suite 2*
Audio Contracting Design Tools: manufacturers use design programs to assist the contractor.
• DEMO and PANEL: You will see TOOLS as follows~ BOSE will demonstrate Modeller; ESA Audio will demonstrate EASE, and JBL will demonstrate SMAART. These manufacturers (and possibly others as well) will show HOW their software assists YOU in design and specification of sound systems. The need for accuracy will be shown too, because it's possible to create a nice scenario where the numbers do not work. Tips, traps, pitfalls ... and see just HOW various manufacturers can help YOU!

• **A5** 5pm Thursday 24th. *Concourse suite 2*
Audio Integration in the Installation
Presented by **Chris Dodds,** head of The PA People.
• How to integrate *equipment* and *systems* from different manufacturers into a major installation. The PA People will profile how today's audio interfaces ARE well defined but control interfaces are NOT! Some projects like the installation of the Stage Management and Paging system at the Sydney Opera House, and various Olympic Venue installations will form the basis of this Seminar.

• **A6** 10am Friday 25th. *Concourse suite 1*
Non Linear Audio Shootout!
This could be a world first... market leaders line up and demo their systems. Systems from **Sonic Solutions, Fairlight, DSP** and **Digi-design/AVID** will be shown, then there is a Q & A from the floor.

A7 11.30am Friday 25th. *Concourse suite 1*
PA System Design & Implementation.
Presented by Apogee Sound Inc.
• Designing high performance systems; • Utilising high powered/hi fidelity systems with various FOH configurations; •Utilising specialised loudsapeakers in distributed systems; • Hi fidelity systems and CORREQT room EQ.

A8 1pm Friday 25th. *Concourse suite 1*
Audio on the Internet
Presented by **Tony McGivern** of Koradji - combinational media delivery (Broadbeach, QLD). • The state of play - a 2 part session which will detail the two current methods currently used on the Internet to transmit REALTIME audio. Both are capable of streaming CD quality audio. Demos of capability and specifics as to production will be detailed. Software featured: RealAudio and Shockwave.

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MORE SEMINARS ON NEXT PAGE>

SEMINAR PROGRAMME

SEMINARS DURING SHOW DAYS, WED APRIL 23, THUR 24, FRIDAY 25 (ANZAC DAY)

LIGHTING STREAM

LX ENTECH SEMINARS

L1 *Wednesday 23rd 4pm Suite 2* **Themed Interiors**
Give me a blank wall and I'll give you decor! Lighting sets the mood, as designers, architects and venue owners discover new art, new techniques, and new faster ways to do a makeover. Lighting comes alive in clubs, public spaces and foyers. Theme parks use lighting to trick the eye, old theatre effects are new again as lighting comes to the party. **Jonathan Ciddor**, **Mal Nichols** and **Lloyd Bond** will show and discuss their work.

L2 *Thursday 24th 12.15pm Suite 1*
DOP Roger Lanser A.C.S discusses his career
Roger Lanser began his career in photography in 1975 and after 13 years left to work on the hit US television series *"Mission: Impossible"* which was being shot in Queensland. After this he moved into doing 2nd. Unit photography on many Australian feature films and TV shows until the summer of 1992 when he did his next feature film in England *"Peter's Friends"*. Then Roger shot two other films, *"Swan Song"* and *"Much Ado About Nothing"*. Roger did the 2nd Unit Photography on the big budget *"Mary Shelley's Frankenstein"*. His involvement here included working with two different directors on all the Stunt Action in the film, model work and Special Visual Effects. Other recent works include *"Billies Holiday"*, *"A Winters Tale"*, *"A Weekend in the Country"*, *and "Prince Valiant"*.

L3 *Thursday 24th 1.45pm* ***Suite 1*** **DMX & Beyond**
What is the future of the DMX lighting control protocol? How can 16 bit information for robotic lights be carried by an aging 8 bit protocol? Can DMX incorporate error correction? Is there a simple and reliable way to distribute DMX in a rig? How is DMX related to Ethernet? What are non-zero start codes for and who uses them? When will the DMX interface for Maglites be available? These questions and more will be discussed by a panel of users, technicians and manufacturers.

L4 *Thursday 24th 3.00pm Suite 1*
Superstar Session: Patrick Woodroffe
Patrick must surely be one of the top lighting designers in the world. He has designed the lighting for some of the top names in the music world including: *Abba, AC/DC, Bob Dylan, Bee Gees, Bjork, Cher, Pet Shop Boys, Bryan Ferry, Depeche Mode, Elton John, Erasure, Michael Jackson, Peter Gabriel, Phil Collins, M. People, Rod Stewart, Seal, Simply Red, Stevie Wonder, Tina Turner* -and mammoth designs for *The Rolling Stones*. Patrick has been responsible for lighting many international music festivals and events. He was also the lighting designer for the long-running musical, *A Tribute To The Blues Brothers*, and the dance show *Lord Of The Dance*. Patrick has also lit fashion shows, industrial presentations and classical music. In addition to his work in live performance he has also been responsible for some important architectural lighting schemes.
Patrick is currently working on designs for the *English National Ballet's* Swan Lake at the Albert Hall and *Phil Collins'* forthcoming World Tour. Hear Patrick talk about his amazing career followed by question time.



L5 *Thursday 24th 4.15pm* Suite 1 **Meet The LD's**
Always popular! A selection of Australia's top lighting designers from a variety of fields answer your questions. Panelists are: **Jamieson Lewis** *(Resident Lighting Designer for the Melbourne Theatre Company)*; **Chris Newman** *(John Farnham's Lighting Designer)*; **David Murray** *(Puccini Spectacular, Tap Dogs and many more productions)*; and **Troggie** *(The Hoodoo Gurus and Midnight Oil)*.

L6 *Friday 25th 9.45am Suite 2*
PC-Based Lighting Control: Is It Your Solution?
PC-based lighting controllers have been around for well over a decade and yet most of us are still using dedicated lighting desks. This seminar will examine the problems solved and created by running your lights from the production manager's PC. Working demonstrations included.

L7 *Friday 25th 11.15am Suite 2* **TV Lighting Today**
Panel discussion about how the quantum leap in Lighting and Camera Technology has affected the practical application of Television Lighting. The panel will have representatives from all the major disciplines of Television Lighting: Drama/Sit Com; Television Commercials; Light Entertainment; Music and Special Events. Hosted by Rohan Thornton of GTV9.

L8 *Friday 25th 12.45am Suite 2*
Future Directions In Dimming Technology
The electronic dimmer is going through some radical changes. After years of sitting around in dimmer racks humming, they're quieting down, losing weight and popping up as parts of luminaires, built into cable ducts, attached to sets and packed into high density racks. What are the developments that have brought this about? What shape and location should we expect to find our dimmers in by the turn of the century?

LIGHTING STREAM managed by Cat Forcer & Andy Ciddor

THE BASIC STAGE LIGHTING ANZAC AFTERNOON (INC. DEMO)

Friday 25th 2.15pm - 5.15pm in the Auditorium
Price: $25 (Students $12) *Take notes, no papers*

This session will look at an introduction and structure of the Stage Lighting Industry, Basic Equipment, Safety, Colour, Design Theory and Implementation. It is aimed at students and interested parties with some amateur or tertiary experience who may wish to pursue a career in the industry or just further their personal knowledge.
The session will be managed by **Chris Paterson** who over a career spanning sixteen years, has worked as a Lighting Designer and Production Manager in Theatre and as a Producer/Director and Production Manager in Television and Corporate Events. His clients have included The Victorian Arts Centre, ATV Channel Ten, Melbourne Theatre Company, Network Seven Australia, The Melbourne International Festival, and Active Television. Chris spent six years as Lecturer in Technical Production for the Victorian College of the Arts and is now a Director of Television, Theatre and Event company *Picture This! Productions.*

SOCIAL EVENTS

THE ENTECH AWARDS FOR TECHNICAL BRILLIANCE



Peter Cupples



John Blackman

Each year the industry nominates and votes for its leading products, people and institutions at The ENTECH Awards.

Join us at the PLAZA Ballroom in Collins street for the AWARDS DINNER on the evening of Thursday April 24th - (day 2 of ENTECH 1997).

MC: **John Blackman.**

Music: **Peter Cupples & Band**

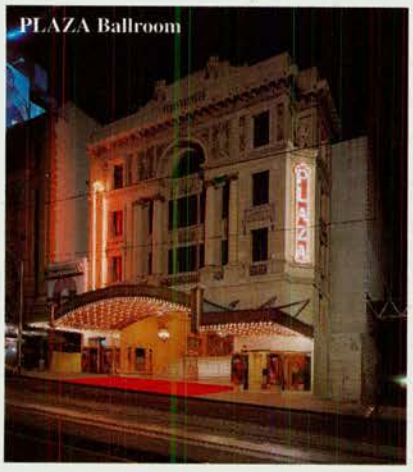
+ SPECIAL SURPRISE GUEST

Food: Superb 3 course meal served in style,& welcome drink.

Cost: Just **$69**, but book quickly - only 400 table seats available!

ENTECH Awards 1997: a big thank you to all our Sponsors

digidesign® AVID



Principal Sponsor:

DigiDesign/AVID Technology

Major Sponsors:

Sound Australasia Magazine

Image Design Technology (IDT)

Stage & Screen Travel

QANTAS

Connections Magazine

Active Lighting

Staging Rentals

THE ENTECH WELCOME DRINK AFTER THE FIRST DAY FUNCTION!

After that very full first day of trade show business, seminars, clinics, and the PA Crescendo, you'll need a drink. So go and buy one!

We offer you a venue to mix with other ENTECH visitors and exhibitors after day one, Wednesday April 23rd.

Jump a tram or get a taxi.to:
Bobby McGees, 186 Exhibition Street, Melbourne.

Time: from 6.30pm

No door charge, buy your drinks at normal prices, gather and NETWORK!

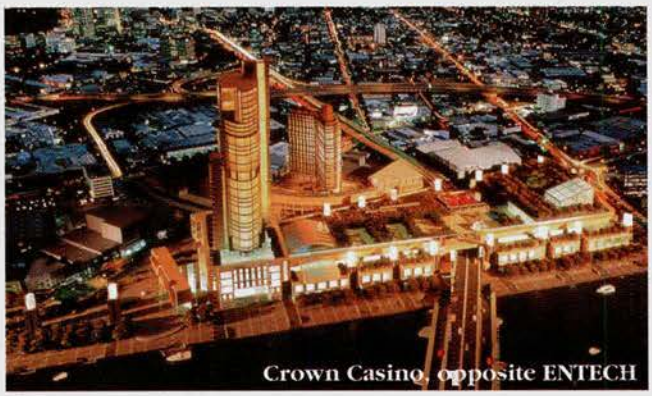
It's an informal gathering, a staging post before you go on to dinner or other functions!

You need to be in it to win! There are over 100 EXHIBITORS who have made a large commitment to ENTECH and many of them have SPECIAL EVENTS, DEALER FUNCTIONS, DEMO's, TRAINING SESSIONS and more ~ which they have organised. So be there, and maybe check with your favourite suppliers beforehand ~ or forever regret what you may have missed!

✪ USE BOOKING FORM ON BACK PAGE OR DIAL 1-800-635-514



Travel and acommodation at ENTECH 1997


Crown Casino, opposite ENTECH

QANTAS Air Travel

Special EVENT pricing- call **Stage & Screen** for a quote. •SAVE A LOT OF MONEY: Please note you CAN buy a QANTAS HOLIDAY pack to Melbourne which includes hotels and is **VERY CHEAP** IF you choose to stay Saturday night! Call **Stage & Screen** or any QANTAS HOLIDAYS OFFICE for these only.

HERTZ Rental Car

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Choose your prefered HOTEL from these:
(rates per night) *Walking distance

*Centra Hotel $180 per room per night
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*Rydges on Flinders $160 per room per night
*Hotel Enterprize $89 per room per night
Terrace Pacific Inn $94 with light b/fast, p/r p/n
Metro Inn Apt -Studio: $110, 1 b/rm $135 p/n.
Holiday Inn Park Suites 2 b/room: $195 per night
Ibis Hotel 2 bedroom apt $168 per night

Stage & Screen Travel
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fax +61 2 9233-3261
or toll free 1-800-670-354

QANTAS



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Connections Publishing Pty Ltd (ACN 058443182)
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Email: mail@conpub.com.au
P.O. Box 439, EPPING NSW 2121, Australia.
Directors - Caroline Grafton, Julius Grafton

EnTech

RESERVATION

Trade entry is free to Exhibits, register **BEFORE APRIL 18th** and your PASS will be waiting for you at checkin outside ENTECH. We will confirm receipt of this. **If after April 18, please register ON SITE!**

Name _____
Position _____
Organisation _____
Street _____
City _____ Post code _____
State _____
Country _____
Phone _____
Fax _____

Your MAIN interest (tick ONE only)
❑ Pro audio ❑ Lighting ❑ Vision ❑ Staging
❑ Other: please state: _____

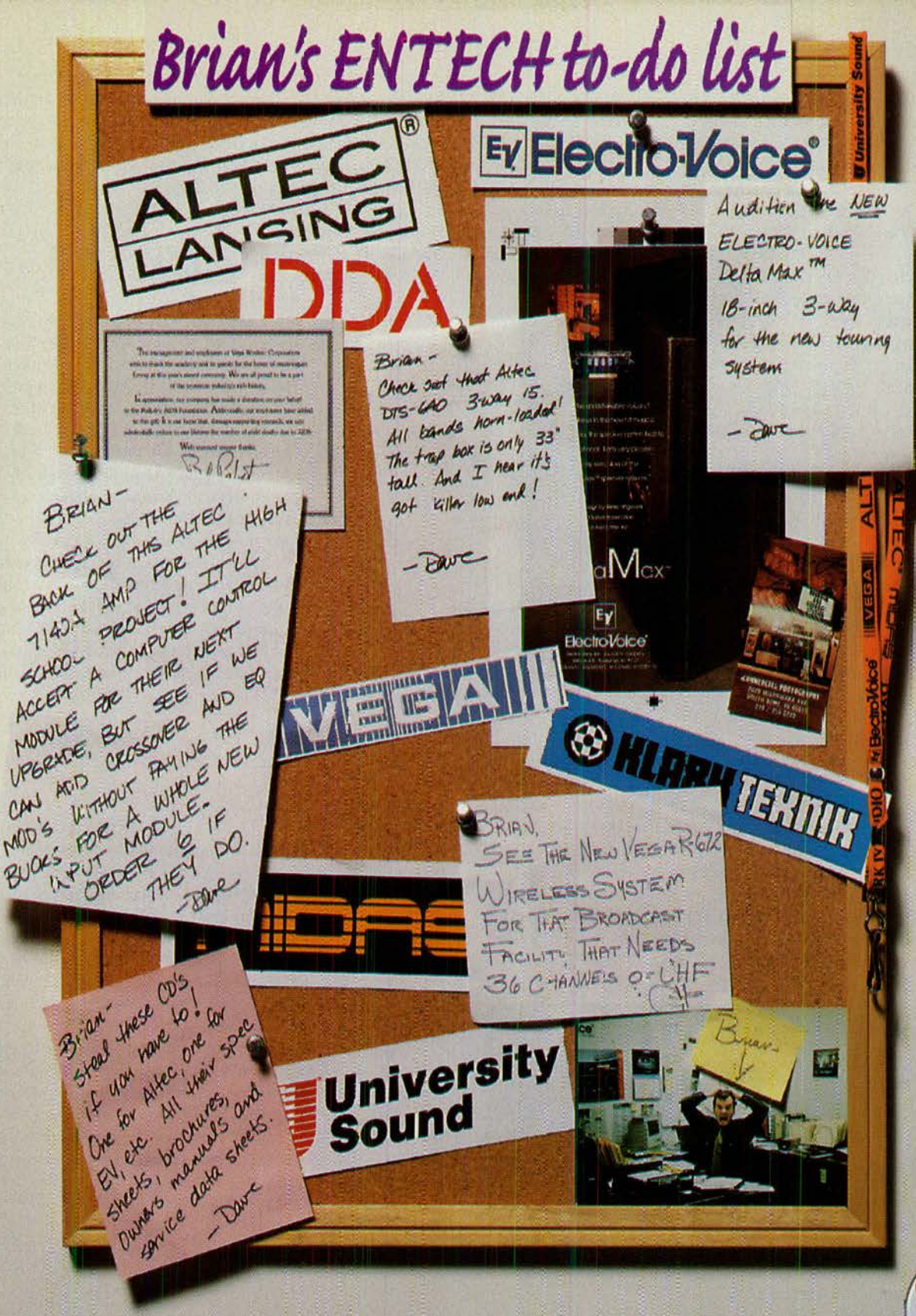
YOUR ANNUAL EQUIPMENT SPENDING (One only)
❑ Up to $20k ❑ $20k to $50k ❑ Over $50k

REGISTRATION: *(Australian dollars)*
❑ Trade registration to Exhibits _____ $ free!
<No further information required. Thank you!>
❑ DVD Conference ticket (incl.lunch) _____ $175
❑ TRAINING Conference ticket (incl.lunch) __ $175
❑ RETAILER FORUM ticket _____ $67
❑ AWARDS DINNER, April 24th _____ $69
❑ BASIC STAGE LIGHTING MASTERCLASS $12*/$25 *student
❑ SEMINAR OPEN PASS _____ $114
❑ SEMINAR TICKETS: Nominate which ones. $12 ea.
(Nominate which) _____
_____
_____
❑ VMA sessions @ $50 each _____
(Nominate which) _____

❑ Invoice us ❑ Payment encl. **TOTAL $** _____
❑B'card ❑Mastercard ❑Visa ❑AmEx ❑Diners
Your credit card number
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FAX THIS TO: + 61 2 **9876-5715** or mail to:
ENTECH **PO Box 439 EPPING NSW 2121 Australia**
to arrive BEFORE April 18 or register ON SITE.

BOOKINGS: USE THIS FORM OR DIAL 1-800-635-514 OR BOOK ONLINE AT OUR NETSITE, GO TO WWW.CONPUB.COM.AU



WHAT'S NEW?

ALTEC LANSING
- Five New DTS Loudspeakers
- Three New Power Amplifiers

VEGA
- New R-672 Programmable, Synthesized, 16-channel UHF Wireless System

ElectroVoice
- All New DeltaMax, Five Models

KLARK TEKNIK
- New Wireless Remote For DN3698

- Complete Product Information On CD ROM



It's all at Stand F13

FOCUS
Federation Of Communication Users and Suppliers (FOCUS)
Address: PO Box 447, CREMORNE JUNCTION NSW 2090
Tel: (02) 9953 6768 Fax: (02) 9953 4234
Stand No: 025
FOCUS represents the corporate communication production industry including those that supply to and buy from it. Video, audio visual, event, interactive multimedia, exhibitions and installations are the key communication methods involved. FOCUS aims to raise awareness and the standard of the work produced and to bring the production and technology sides of the industry together. Activities include Blue Dog Club networking evenings, annual Producer's Festival, Newsletter, referral service, international contacts, and various task forces addressing industry issues.

Gemini Lytequest Australia
Address: Factory 20, Cave Hill Industrial Gardens, Cave Hill Road, LILYDALE VIC 3140
Tel: (03) 9735 0588 Fax: (03) 9739 5441
Stand No: M15
Gemini Lytequest Australia supplies and supports a dealer network around Australia, with affordable and reliable audio and lighting equipment from the high profile and internationally renowned "Gemini/Lytequest" of the USA. Exciting growth for the company and its dealers is foreseen through continual R & D and the release of new products.

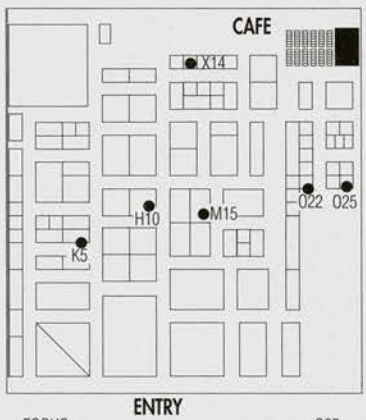
New product releases: Motor Heads, PT2000 Direct Drive Turntable, PMX 16 Mixer, PMX 1600, PMX 18 Mixer, PDM 4012 Mixers. Products to be exhibited: Gemini Lytequest - Professional disco mixers; professional twin CD players; digital samplers; graphic equalisers; pitch control turntables; speakers; push up stands; power amplifiers; light modules; wireless microphone systems; DJ disco effects; strobes;



machines. Dynamite products - Par cans, pinspots, scanners, helicopters, smoke fluids.

Geni *see* Show Technology

Glantre Engineering
Address: PO Box 587, KEW VIC 3101
Tel/Fax: (03) 9882 1439 Mb: 018 320 269
Stand No: H10
Glantre Engineering has been providing design, supply and installation packages of lighting, sound, rigging, AV and effects for 23 years. The company's wide range of projects include theatres, halls, television studios, theme parks, cruise ships, conference and presentation rooms. With a head office in the United Kingdom, the company operates worldwide and is represented in Australia by Glantre Engineering Pty Ltd, based in Melbourne. Glantre will be demonstrating the revolutionary Spiralift device. This provides a cost effective solution for stage lifting applications and is particularly suitable for retrofitting into existing orchestra pits. Glantre personnel will be on hand at ENTECH to discuss potential applications of Spiralift as well as Glantre's full project capabilities.



FOCUS	O25
Gemini Lytequest Australia	M15
Glantre Engineering	H10
Horwood Australia	K5
Image Design Technology (IDT)	O22
Imported Theatre Fabrics	X14

Horwood Australia
Address: 12 Barry Avenue, MORTDALE NSW 2223
Tel: (02) 9585 1011 Fax: (02) 9585 1317
Stand No: K5
Horwood Australia will be represented at ENTECH 97 by General Manager Brad Smith, Grahame Harrison and Cameron Dunn. We will be displaying a large selection of our products at the show including the range of Klipsch Professional loudspeaker systems and the extensive Atlas/Soundolier range of communications products which covers everything from ceiling speakers to microphone stands. Our electronics will be at the show including brands such as Furman Sound, White Instruments and Rolls Corporation and will be displayed in Euromodule expandable racks. Other brands we will be showing are Astatic microphones, KDM, Kinetic, Miles and Pro-Co.

Image Design Technology (IDT)
Address: 16-18 Carlotta Street, ARTARMON NSW 2064
Tel: (02) 9439 3929 Fax: (02) 9439 3050
Stand No: O22
Image Design Technology (IDT) is an Australian owned company at the forefront of high definition videowall presentation in this country. With branch offices in Sydney and Melbourne and equipment now in Perth and Brisbane, IDT retains its market lead in the local videowall arena. IDT has made its reputation for quality service from its rental division, but now has become a major player in the permanent installation and distribution market. Prime installations such as the Crown Casino, DKNY, Warner Bros, Imax and Jam Factory only secure our strong future. IDT rental division is responsible for integrating videowalls into most of Australia's major events such as the ARIA's, AFI Awards, Logies, Olympic Home Coming and Janet Jackson World Tour. Products: Visual Display - Pioneer Video Data Cubes; Toshiba Video Data Cubes; Hantarex Range of Monitors 34", 29", 28", 15"; Gas Plasma Screens. Video Processors - Imtech Video Processors; Lentco Video Processors; Toshiba Video Processors. Video Peripherals - Feral Quad Splitters; Feral Time Base Correctors.

Imported Theatre Fabrics
Address: 42 Mawby Road, EAST BENTLEIGH VIC 3165
Tel/Fax: (03) 9579 5584
Stand No: X14
Introducing Imported Theatre Fabrics, a new theatrical supply company. A company borne out of customer need, committed to supplying quality products and customer satisfaction at a fair price. Imported Theatre Fabrics (ITF) provides: • A consulting service and quotes free of charge to your school; • Fabrics made to your sizes or as cut lengths; • Renewal of onstage curtains, legs, tabs, etc.; • Installation and supply of tracks; • Theatre materials such as shark's tooth, filled cloth and blacks; • Stage Cardboard (enquiries welcome); • Grid safety checks, maintenance and repairs; • A full range of front and rear projection screens. This company can do the whole job, we have a strong background in domestic curtains, theatre fabrics,

SEE US ON STAND M15

AS YOU READ THIS AD SOMEONE, SOMEWHERE IS BUYING A GEMINI.


PS 626 Mixer


PS 727 Mixer


PMX 18 Mixer


PS 924 Mixer


CD-9500 Pro II
CD Player


RM 70C Wireless Mic


DS 2024 Sampler


XG 2000

...AND, THEY HAVEN'T EVEN SEEN THIS AD YET.

. .And they're buying them for a lot of good reasons.

Like the peace-of-mind from knowing they're going with the number one name in DJ sound equipment.

Of course, peace-of-mind is nothing without performance. Which is why we have a full line of products with every conceivable feature - everything you need to do the kind of gig you want.

Combine that with the fact that this world class performance doesn't come with a world class price tag and you have a lot of good reasons to make your next buy a Gemini.

..So what are you waiting for?


Lytequest Spider


Raven


Motorhead


Motorscan

LyteQuest™ BY gemini

gemini™
SOUND PRODUCTS WITH SOUND IDEAS


PT 2000 Turntable


LQ 750E Strobe

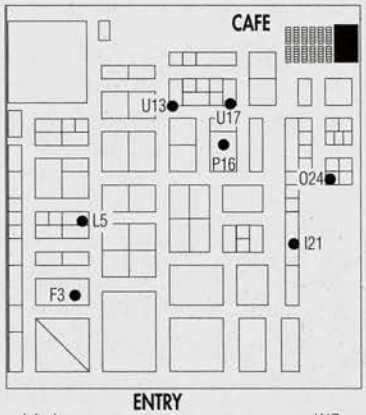
MB 680 Speaker

Corporate Headquarters:
Gemini Lytequest Australia

Distributor: Disco World pty. ltd.™
Factory 20 Cave Hill Road (PO Box 509) Lilydale Vic 3140
Phone: (03) 9735 0588 Fax: (03) 9739 5441

installations and maintenance both commercially and in schools.

Infonics
Address: 10 Illoura Avenue, WAHROONGA NSW 2076
Tel: (02) 9489 0260 Fax: (02) 9487 5066
Stand No: U17
Infonics, design and manufacture a range of equipment for use in Exhibition, Broadcast, Transport and Commercial applications. On display will be the Solomax series of Interactive Digital Audio equipment and peripheral devices. Solomax series, Interactive digital Audio systems provide broadcast quality replay of Audio, combined with powerful control and interface functions. Scripting of applications is performed with the supplied Windows software which enables a vast array of applications requiring the replay of Audio combined with control to be performed. A range of new products will be on display including the amazing 8 in 48/24 out Dynamic Matrix Mixer. GO: www.infonics.com.au



Infonics	U17
Inlite	U13
Jands Electronics	F3
LSC Electronics	P16
Laser Theatre Lighting	O24
Lightmoves Professional Entertainment Services	L5
Lightmoves Technologies	I21

INLITE
Address: 23/38 Eastern Valley Way, CHATSWOOD NSW 2067 (PO Box 1542, Chatswood 2057)
Tel: (02) 9417 3422 Fax: (02) 9417 3539
Stand No: U13
IRIDEON - IRIDEON and INLITE bring to Australia the first range of fully automated colour change architectural luminaires. IRIDEON is a division of Vari-Lite USA and is dedicated to bringing the Vari-Lite technology to the architectural lighting industry. IRIDEON allows a level of control and flexibility unmatched by anything on the market today. Equipped with the latest in dichroic filter technology and controlled by the Composer Windows 95 based computer program the system provides a means of choreographing the lighting in an interior and external architectural space.

Jands Electronics
Address: 40 Kent Road, MASCOT NSW 2020
Tel: (02) 9582 0909 Fax: (02) 9582 0999
Stand No: F3
Feature products of the Jands stand: JBL - HLA; dbx - Blue Series; Shure - Personal Stereo Monitors. Jands will host a free product clinic each day from 1.30pm in the Clinic Area: Wed 23rd April, JBL: SMAART/ Control Contractor, Hosted by: Dan Tresemer, JBL; Thurs 24th April, SHURE: Personal Stereo Monitor, Feedback killer, Hosted by: John Boudreau, Shure; Fri 25th April, CREST: Power Processing CKS/CKV/ Nexus, Hosted by: Paul Shiner, Crest. Other overseas guests: ETC - Bill Gallinghouse (VP), Richard Lambert (TechServices), Jimmy Cheung (CEO ETC Asia). Jands staff on the stand: Jeff Bolt, Rod McKinnon, Billy Mawer, Nick Orsatti, Colin Miller, Tim Kennard, Peter Grisard, Peter Twartz, Kim Hasanic, Fiona Blackett, Paul Mulholland, Sue Mulholland.

Jem *see* Show Technology

Kupo *see* Show Technology

L.S.C. Electronics
Address: 7 University Place, CLAYTON VIC 3168
Tel: (03) 9561 5255 Fax: (03) 9561 5277
Stand No: P16
New from LSC Electronics this year is the full DNA range of DMX512 distribution products offering for the first time a system of modular components that can be tailored to suit a wide range of installations. A fully working AXIOM 48 and AXIOM 60 will be shown in expanded format. Attention on the LSC Electronics stand will focus not only on the innovative range of lighting control products but also on the wide variety of complimentary products that LSC directly imports. Shown for the first time in Australia will be the range of Proplex hi-spec data cables and Litestructures stage decking system. AVOLITES, SMOKE FACTORY, UNIPAR, GODDARD DESIGN and SELECON will be represented in full regalia.

Laser Theatre Lighting
Address: 38 Hung To Road, 6th Floor, Rear Portion, Microtron Building, Kwun Tong, Kowloon, Hong Kong.
Tel: +852 2797 9803 Fax: +852 2797 0708
Stand No: O24
Established in Hong Kong in 1978 and installed most of the major entertainment projects in South East Asia including Hong Kong, China, Taiwan, Korea, Philippines, Thailand and Singapore. Distributing audio, lighting, video and laser products from Europe and USA. Also, manufacturing laser controller and Karaoke song selection with computer control. Other than head office in Hong Kong, we have offices in China, Philippines and USA. We will display our Alpha Laser Controller with new 4-channel PCAOM system, 200MW Solid State Laser and 20MW HeNe Laser.

Lightmoves Professional Entertainment Services
Address: Mayston Street, EAST HAWTHORN VIC 3123
Tel: (03) 9813 2955 Fax: (03) 9813 2466
Stand No: L5
At ENTECH 97 Lightmoves Pty Ltd will be exhibiting real world applications and Lighting Solutions for the many and varied products that they distribute. Some of the many manufacturers to be represented will be Dynalite with their new range of CE approved architectural dimmers as used extensively throughout the new Crown Casino, Digilin's new DMX controlled Weatherproof Fibre Optic Lightsource as used on the Victorian Arts Centre Spire, Lighting Solution's new DMX controlled Low Voltage Dimming Cabinets as used for sign control throughout Crown Casino. Other manufacturers represented will be LSC, Theatrelight, Prolite, Megabay, Optikinetics, Clay Paky, Super Vision, Selecon, Circuit Tube and Jands.

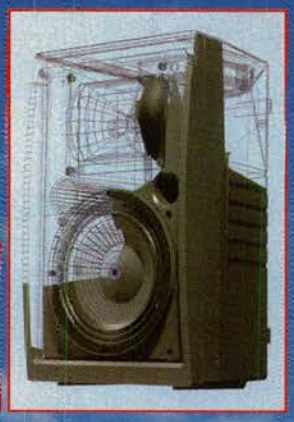
Lightmoves Technologies
Address: 631 Parramatta Road, LEICHHARDT NSW 2040
Tel: (02) 9560 0000 Fax: (02) 9568 2333
Stand No: I21
Lightmoves Technologies will be displaying the latest projectors and accessories from Optikinetics, including K1, K2, K4, Solar System and motion mirrors. Neil Rice from Optikinetics will attend the first two days of the show. Also on display will be new equipment from Teatro including "Versa Disc", the new effects disc. Fibre Optic displays and products, new decorative lighting products will be shown. Cloud Electronics including new Zoner amplifiers and controllers can be viewed. Aquafog dry ice machines, Lightpoint patch systems, dimmers and control desks from Theatrelight will all be "live" and ready to use. Other agencies exclusively represented are Cosmolight (video lighting), Littlite (task lamps), Le Maitre Pyrotechnics, 2CR ultra violet accessories. Swing by and have a cold drink or two.

D.A.S.

a touch of excellence



M.I. 8		
	Frequency Response	50Hz - 20kHz
	Power Handling RMS	150W
	Enclosure Material	Polypropylene
	Sensitivity (1W/1M)	93dB Nominal
	Impedance	8Ω SPL
	Programme Power	300W



M.I. 8 and M.. 12
Stand alone systems which stand very nicely against any international competitor - audition and be surprised.

M.I. 12		
	Frequency Response	45Hz - 20kHz
	Power Handling RMS	300W
	Programme Power	600W
	Sensitivity (1W/1M)	98dB SPL
	Nominal Impedance	8Ω
	Enclosure Material	Polypropylene

SUB 18		
	Frequency response	35Hz - 500Hz
	Power Handling RMS	500W
	Programme Power	1000W
	Sensitivity (1W/1M)	100dB SPL
	Nominal Impecance	8Ω

The Sub 18 combined with the M.I. 12 enclosure makes for an EXPLOSIVE 800 W (RMS) SYSTEM COMBINATION



SEE US AT EnTech STAND J19

FACTOR 12

FACTOR 12		
	Frequency response	35Hz - 20 kHz
	Power Handling RMS	200W
	Programme Power	400W
	Sensitivity (1W/1M)	94dB SPL
	Nominal Impedance	8Ω
	Enclosure Material	Polypropylene

FACTOR 8		
	Frequency response	45Hz - 20 kHz
	Power Handling RMS	100W
	Programme Power	200W
	Sensitivity (1W/1M)	91dB SPL
	Nominal Impedance	8Ω
	Enclosure Material	Polypropylene

FACTOR 5		
	Frequency response	70Hz - 20 kHz
	Power Handling RMS	80W
	Programme Power	160W
	Sensitivity (1W/1M)	90dB SPL
	Nominal Impedance	4 Ω
	Enclosure Material	Polypropylene



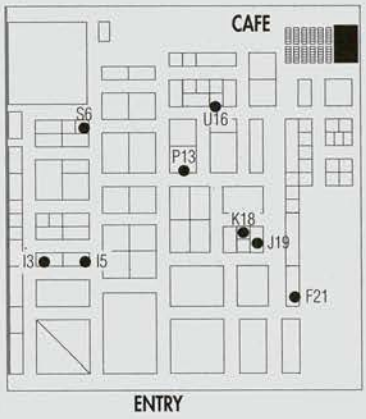
MAGNA SYSTEMS AND ENGINEERING

Magna Systems & Engineering
A trading division of Silklore P/L. ACN 004 004 997
Unit 2, 28 Smith Street, Chatswood, NSW 2067. Phone: (02) 9417 1111 Fax: (02) 9417 2394

Magna Systems & Engineering
Address: PO Box 788, WILLOUGHBY NSW 2068
Tel: (02) 9417 1111 Fax: (02) 9417 2394
Stand No: J19



DAS Sound Products - The latest addition to our great range of loudspeakers is the new DS-15. The DS-15 is the latest achievement of DAS engineers in high frequency injection moulding technology, consisting of a 15" low frequency transducer with a 3" (77mm) voice coil and the high efficiency M-5 compression driver and CD horn assembly. Designed with the aid of advanced computer modeling programs. In black or white versions, this aesthetically pleasing and highly versatile product demonstrates directionally symmetric and precise sound projection characteristics. The DS-15 can be used floor standing, angled as stage monitor, or wall or ceiling mounted with DAS mounting accessories. See the DS-15 and our complete range of DAS quality professional loudspeakers on display at our ENTECH stand number J19.



Magna Systems & Engineering	J19
Major Music Wholesale	K18
Mediavision Australia	S6
Meyer Sound	P13
Miller Professional Products	U16
Moore Music	F21
Musitronics Australia	I5
Nightlife Music Video	I3

Major Music Wholesale
Address: PO Box 365, GYMEA NSW 2227
Tel: (02) 9526 8219 Fax: (02) 9525 4560
Stand No: K18
On the stand will be Greg Kato (Mgr), and Special Guest - Julian Blyth (SCV London). Major Music Wholesale will feature the LA Audio "Millenium Series", announcing the release of a budget range of signal processors including the GCX2, EQX2, MLX2 and MPX1. The "Millenium Series" gives you features you demand at a price you won't expect. The renowned Classic Series will also be on display, featuring the Classic Compressor II, Classic Channel and Classic EQ, bringing you the ultimate in professional signal processing. For the latest developments in digital audio workstation software, tripleDAT offers the complete digital audio solution, from multitracking, post production and remixing to REALTIME Effects and CD writing - come by for a demo. All tripleDAT products including FireWalkers Effects, De-Noising and De-Clicking and the CD Juke Box will be on display.

Martin *see* Show Technology

Mark IV Audio see EVI

MEC Truss *see* Show Technology

Mediavision Australia
Address: 22 Yertchuk Avenue, ASHWOOD VIC 3147
Tel: (03) 9807 5133 Fax: (03) 9807 7814
Stand No: S6
Mediavision Australia are the Australian agents for Lee Filters, Colortran, Ianiro, Kobold and Zero 88. On display will be a representative range of lighting, dimming, control and suspension equipment from these manufacturers including the low cost Colortran 5/50 Ellipsoidal Profile range, the new Ianiro 1200W Solaris Fresnel, and the Zero 88 Sirius 250 Lighting Console incorporating the patented 4 Wheel Drive moving light control. Lee Filters products will feature the expanded range of Colour Magic Packs suitable for visual demonstration of light filtration principles along with the new Technical Lighting Packs. Copies of the current Lee Lighting Swatchbook and Gobo Pattern Selector Book will be available for collection from the stand.

Meyer Sound
Address: 2832 San Pablo Avenue, BERKELEY CA 94702 USA
Tel: +1 (510) 486 1166 Fax: +1 (510) 486 8356
Stand No: P13

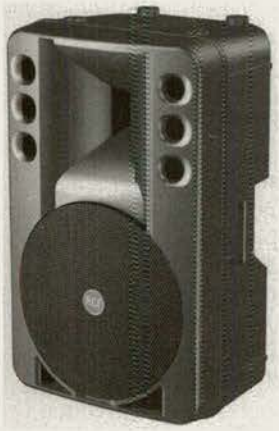


Meyer Sound® is proud to feature three new additions to their critically-acclaimed Self-Powered Series. Introduced for the first time to the Australian pro audio market, products include the CQ™-1 and CQ-2 Self-Powered Reinforcement Loudspeakers, the PSM-2 Self-Powered Stage Monitor, and the PSW-2 Self-Powered Subwoofer. These recent additions arrive on the coattails of the existing Self-Powered line, a series from which Meyer has already shipped over 3,000 loudspeakers. Developed for optimum performance and quick, convenient set-up and operation, Self-Powered products integrate the amplifier, controller, power supply and cooling subsystems into a lightweight module, service-accessible at the back of the enclosure.

Miller Professional Products
Address: 30 Hotham Parade, ARTARMON NSW 2064
Tel: (02) 9439 6377 Fax: (02) 9438 2819
Stand No: U16
Miller Professional Products imports and distributes a complete range of lighting products for film and television production and will display the following at ENTECH 97: studio and portable lighting fixtures including Balcar fluorescent studio lights, K5600 portable HMIs and Lowel portable tungsten lighting kits; Avenger/Manfrotto light stands, grip and gaffer accessories; Westcott light modifiers, reflectors and backgrounds; GAMColor lighting gels and GAMFusion diffusion; Clipper fold-down equipment trolleys; and KATA heavy duty carry bags and equipment

body vests. In attendance from Miller will be Andrew Ball (National Sales Manager) and Mitch Patterson (Lighting Sales).

Musitronics Australia
Address: 25 Clive Road, BIRKDALE QLD 4159
Tel: (07) 3822 3906 Fax: (07) 3822 3907
Stand No: I5



New 800 lumen video projector 4:3, 16:9 ratio completes the range of video and data projectors. New ART series powered and unpowered moulded cabinets. Fresh from RCF, production will not commence until April. In Ear Monitoring at a low cost. Released in February at the Frankfurt Music Show. Seven stereo frequencies and 120dB in ear. Join the leading edge. New 2" and 1" titanium drivers, great performance and very cost competitive.

Moore Music
Address: 219 Napier Street, FITZROY VIC 3065
Tel: (03) 9419 0344 Fax: (03) 9417 6697
E-mail: tmoore@netspace.net.au Web Site: www.qldnet.com.au/mooremusic
Stand No: F21
Moore Music offers some of the hottest products in the music and entertainment industry. The full range of Vestax DJ and Hard Disk Recording equipment will be on show. Matt Shlomi, the Vestax International Marketing Manager, will be attending to demonstrate Vestax. Mark of the Unicorn is the premier hardware and software solution for Computer AV work right around the world. See Dave Roberts from Mark of the Unicorn in Boston demonstrate Digital Performer 2.0, the Midi TimePiece AV, the MIDI and Micro Express. Studiomaster UK will have their full range of mixers and amps on sale with Mr. Malik and Jim Khan from Studiomaster UK attending. Add to this MIDIMAN Interfaces, TUNE1000 Midifiles and the FROGLIPS Karaoke System, Microboards CD Burners, Hohner Midia, Samplitude, Roland, best service dance and DJ grooves and much more, and you have one of the most exciting stands ever at ENTECH.

Nightlife Music Video
Address: 50 Cribb Street, MILTON QLD 4064 (PO Box 135 Paddington 4064)
Tel: (07) 3367 1045 Sales: 1800 679 748 Fax: (07) 3369 8376
Internet URL: http:\\www.nightlife.com.au
Stand No: I3
Company Principles: Representatives - Mark Brownlee Managing Director, Dewayne Montey National Sales Manager, Darren McBain Technician will all be present at ENTECH. New Release/Special Feature Products: Revolutionary computer-controlled music video CD systems. This technology enables soundtracks with their accompanying video clips to be recorded onto standard compact discs.



These CDs containing 18 digitally mastered tracks can be played in venues on video CD players. Nightlife are launching three products: 1. The Club System, designed and built specifically for nightclub DJs, is a fully automated computerised system which allows immediate access and cueing of the entire library of 2000 clips. 2. The Set'n'Forget continuous play system, ideal for relaxed and informal settings such as beer gardens, pubs, pool rooms, bars and restaurants. 3. The largest range of music video CD in the world which is also DVD compatible. Their comprehensive libraries include Club Release, Radio Release, Classic, Alternative, Easy, Radio Beat and Country. Visit the stand and experience video CD and be sure to ask them anything you would like to know about video CD and DVD.

SEE IT ALL AT ENTECH! STAND F21

Vestax
Mark of the Unicorn
TUNE 1000 THE UNIVERSAL NETWORK OF ENTERTAINMENT
Studiomaster
HOHNER MIDIA
midiman GUARANTEED FOR LIFE
SEK'D
whirlwind

MOORE MUSIC 219 Napier Street (P.O. Box 2735), Fitzroy, VIC., 3065, Australia.
Phone: (03) 9419 0344 Fax (03) 9417 6697/9419 4049 email: tmoore@enternet.com.au

Oracle Laser Productions
Address: 5/222 Headland Road, DEE WHY NSW 2099
Tel: (02) 9938 4466 Fax: (02) 9938 4504
E-mail: oracle@geko.com.au
Stand No: U22
Oracle Laser Productions is Australia's only manufacturer of real time full colour 3D laser projection equipment. Established three years ago, Oracle has combined laser experience of over 20 years. All software and hardware is developed in Australia to suit the discerning needs of the client. Specialising in manufacturing, Oracle has been involved in the recent Sega World theme park at Darling Harbour, installing one of Australia's largest permanent laser installations. Furthermore, Oracle have been involved in two of Australia's biggest events this year - Sydney Mardi Gras and the Australian launch of Super League, Australia's largest outdoor laser display using a 40 watt YAG laser.

Osram Australia
Address: 423 Pennant Hills Road,
PENNANT HILLS NSW 2120
Tel: (02) 9481 8399 Fax: (02) 9481 9468
Stand No: P10
Osram will be showing our complete range of photo optic lamps including the new HSR1200W. On display will be Short Arc, Xenon, HMI, HTI, HSR, HSD together with CP, T and projection. Our stand will be manned by Warner Lulofs, Steve Phipps, Frank DiFelice, Josie Broad, Duncan McRae, Monika Anderson and Simon Diamond.

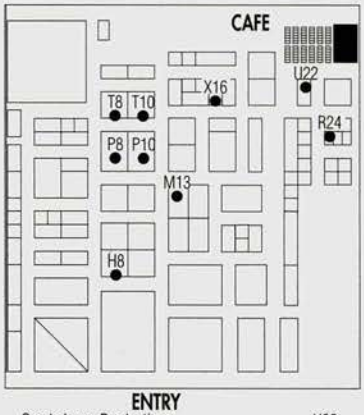
P. Audio System Co., Ltd
Address: 87/112 Moderntown Building, Floor 15 Sukunvit 63, KLONTON KLONGTOEY BANGKOK THAILAND 10110
Tel: +66 (2) 381 7575 Fax: +66 (2) 381 7573
Stand No: T8
Production Line: • Horn • Horn Tweeter • Super Tweeter • Compression Driver • Loudspeaker Mid & Woofer • Adaptor.

Penn Fabrication
Address: 43-45 Johnston Street, PORT MELBOURNE VIC 3207
Tel: (03) 9646 7222 Fax: (03) 9646 8222
Stand No: H8
Penn Fabrication are a multi national company specialising in the design and manufacture of Lighting Truss, Staging, Par Cans and Lighting accessories. Penn Fabrication is also Australia's largest distributor of products used in the manufacture of Roadcases, Speaker Boxes, 19" Equipment Racks, Stage Boxes, Patch Panels etc.

Performance Media
Address: 4/245 Chalmers Street,
REDFERN NSW 2016
Tel: (02) 9698 9024 Fax: (02) 9698 9428
Stand No: R24
Publisher of the Australian Performing Arts Directory (APAD), the most comprehensive source for contacts in live arts and entertainment. Performance Media is closely associated with ArtsLink, the national information provider and communications network for the entertainment and live arts industry. Performance Media and ArtsLink together offfer a range of services and avenues for promotion and communication, concentrating particularly on maximising the potential of internet technology and integrating traditional publishing forms with on-line innovations. Being listed in APAD is essential (and free) for all industry participants; advertising (both in APAD and ArtsLink on-line) is worth consideration; utilising Performance Media/ ArtsLink services and resources is a cost-effective way of promoting products and services to likely users.

Philips Lighting
Address: 34 Waterloo Road, NORTH RYDE NSW 2113
Tel: (02) 9805 4494 Fax: (02) 9805 4495
Stand No: M13
Where other lamp manufacturers' studio and theatre lamps mount the filament in one plane (mono-plane), Philips has developed an equivalent range with the filament in two planes (bi-plane). This allows a filament which is more compact and emits more lumens per cm^2. The lightsource is smaller, has better beam control, light intensity and distribution. They also have a higher shock resistance. Philips Medium Rare Source (MSR) Earth Lamps are high pressure discharge lamps with short arc length (5 - 14 mm), filled with a noble gas, mercury, halides and with additives of rare earths from the lanthanides. They are dimmable, single ended and have very stable colour temperature, ideal for indoor and outdoor filming, stage, studio and theatre use. Due to the hot restrike possibility the lamps are very suitable for TV and film applications. Philips Linear Stage and Studio lamps will be exhibited at ENTECH. With a colour temperature of 3200K and R 7s bases for easy replacement, Philips has a vast range of linear lamps for almost any application.

Premier Lighting
Address: 433 Graham Street, PORT MELBOURNE VIC 3207
Tel: (03) 9646 4522 Fax: (03) 9646 5020
Stand No: T10
Premier Lighting, Melbourne, Sydney and Brisbane, have their staff on the stand this year who can talk to you regarding hire, sales, production, service and installations for film, television, theatre, corporate or rock'n'roll, or why not just drip in for a coffee.

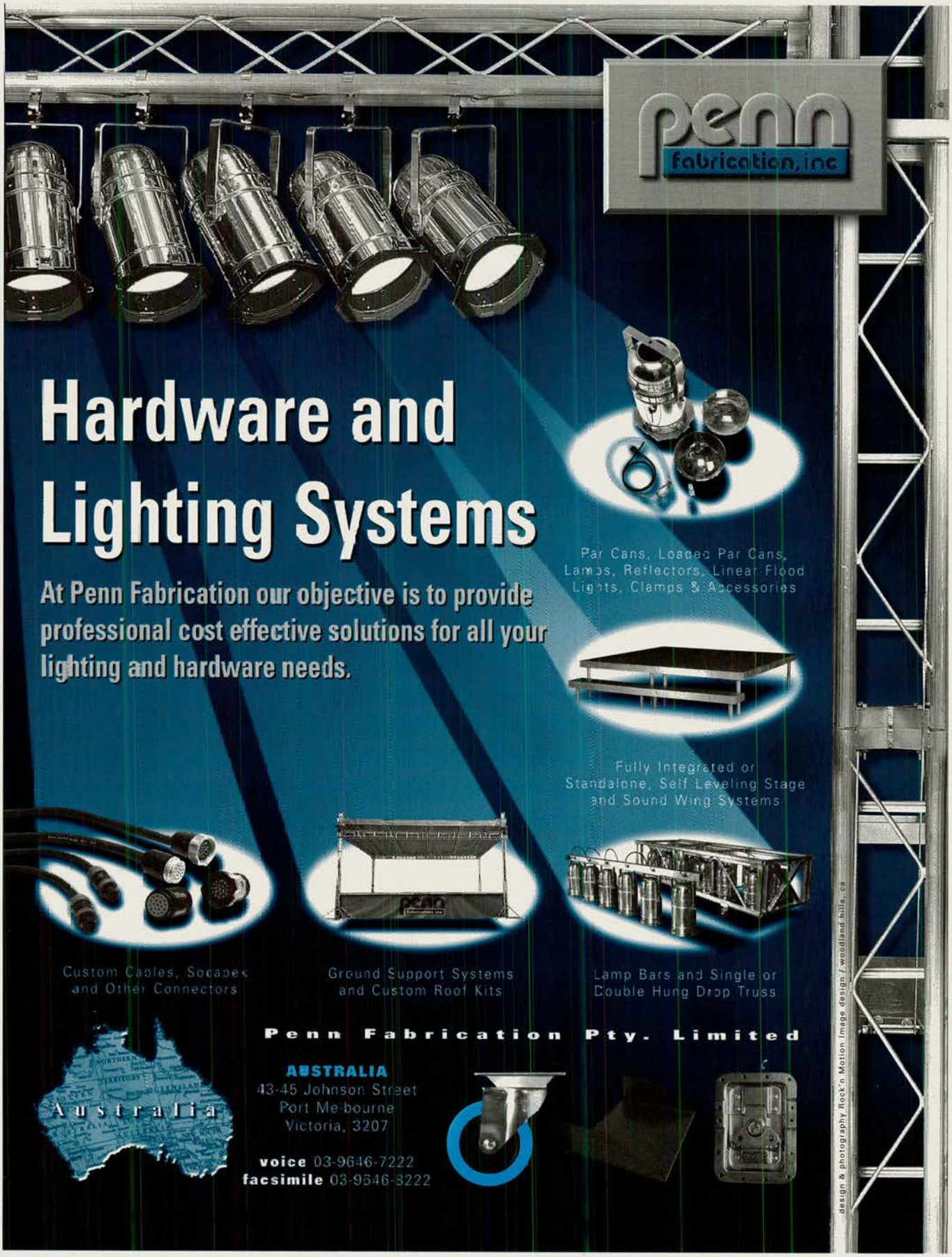


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Quantum Efex	X16

Production Audio Supplies P/L
Address: 6-8 Elizabeth Street, RICHMOND VIC 3121
Tel: (03) 9415 1585 Fax: (03) 9415 1595
Stand No: P8
Production Audio Services Pty Ltd is one of Australia's leading pro audio suppliers. Representing eleven product lines, Production Audio serves all areas of the audio market including touring, installation, broadcast, industrial and MI. New products this year include the Audix D4 kick drum microphone, Crest LMx monitor mixing console, EAW FL103, LA215 and LA212 loudspeakers as well as the return of Crest amplifiers to the product lineup. New this year to Production Audio is XTA Electronics of the UK whose products include digital sound processors as well as a real time spectrum analyser. Other brands on the stand include Ashly Audio, Biamp Systems, Quam Nichols and RDL. Representatives from EAW, Crest and Audix will also be on the stand.

Pulsar *see* Show Technology

Quantum Efex Pty Ltd
Address: 126b Henley Beach Road, TORRENSVILLE SA 5031
Tel: (08) 8351 9085 Fax: (08) 8351 9086
Stand No: X16 Quantum Efex... are the national Australian distributors for three major international lighting manufacturers and carry a complete range of lighting and accessories from the powerful SLS Panscan 4 down to Nashua

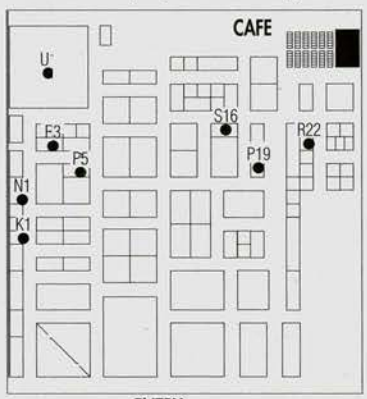

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Gaffer's tape. All our products are backed by our factory warranty with full service facilities here in Australia. Quantum Efex... has over 21 years of combined entertainment industry experience and are internationally renowned for nightclub and event design with successful shows all over the world. With fully trained technicians, riggers and designers, Quantum Efex... have supplied equipment and personnel all over the world.



This year sees continued sales of the Panscan 4, Panscan 3, Panscan Junior and Omega moving light systems as well as the introduction of the new "Quantum Effects" effects budget light range for the DJ rental markets. Equipment to be exhibited: Panscan 4, Panscan 3, Panscan Junior, Omega, Quantum Effects Lights, Quantum Colour Changer, SLS 16+16 Controller Moving Light Controller, SLS 16ch. Moving Light Controller, Quantum Smoke Machines including the Radio B-31 and the Heavy Fog FC-100 Cooler.

Roland Corporation
Address: 38 Campbell Avenue, DEE WHY NSW 2099
Tel: (02) 9982 8266 Fax: (02) 9981 1875
Stand No: R3
Roland have done it again. This year's ENTECH stand features more cutting edge technology to delight all musicians and audio enthusiasts. New releases like the JV2080 sound module, JP-8000 analog modeling synthesizer, GR30 guitar synth (with lightning fast tracking!) and the extraordinary VS-880 V EXPANDED are just some of the highlights. Also at 4.30pm every day Dave Dwyer and Marc Allen will present a clinic on producing CD quality recordings with a shoestring budget - definitely worth a look!



Selecon
Address: 26 Putiki Street, GREY LYNN, AUCKLAND, NEW ZEALAND 1002
Tel: +64 9 360 1718 Fax: +64 9 360 1719
Stand No: P19



(with Three Arts Services Pty Ltd) & P16 (with LSC Electronics) Established in 1968 and staffed by lighting practitioners. Our aim is to build the best lighting equipment in the world to the highest safety and performance standards. Commitment to close contact with its clients and a willingness to improve products mid run has seen Selecon develop strong luminaires to withstand the rigours of touring Australia. At ENTECH will be director Jeremy Collins, Simon Garrett and Phil Sargent. Feature Products: Rainbows 4" and 8" scrollers; Aurora 1000/1250W cyc and floodlights; 50W to 2500W Fresnel, PC, Zoom and Condensor profile spots; Astral MR16, tungsten, metalhalide and PL Display range; Followspot range.

Show Structures
Address: 102b Hordern Street, VICTORIA PARK WA 6100 (PO Box 6549, East Perth WA 6892)
Tel: (09) 470 4707 Fax: (09) 470 4794
Stand No: S16
Constella are English manufacturers of budget lighting effects which are starting to dominate the UK market. Their NEW Intelligent products will be on display allowing control via DMX512 and Constella's NEW Handheld DMX Controller ideal for mobile DJs offering instant stunning lightshows with no programming. A selection of powerful stand-alone disco effects including NEW Chameleon 2 will also be exhibited. KAM Made2Fade mixers and twin CD players featuring new technology and new colours at competitive prices, KAM's Australian launch of the NEW GMX ONE marking the inauguration of their NEW Gold Series offering superior build quality and the latest digital technology.

Show Technology Australia
Address: 13-15 Bridge Street (PO Box 480), RYDALMERE NSW 2116
Tel: (02) 9898-1111 Fax: (02) 9898 1222
Stand No: U1
Show Technology is Australia's leading importer and distributor of lighting equipment representing world leaders such as Martin, Pulsar, Jem, Kupo, Geni, ADJ, Studio Due, Elektralite and MEC Truss. Show Technology's sister company Show Lighting Australia represents the world's most renowned quality manufacturer Clay Paky. The company is owned and operated by two of the industry's stalwarts, Rod Salmon and Emmanuel Ziino who between them share over 30 year's experience. This year's exhibition will see a host of overseas guests from all the aforementioned companies showing off many new products. From Clay Paky there will be the new Miniscan RG, Stagescan, VIP Display Range and Combicolour 575. From Martin there will be the first Australian showing of the new MAC600, Lighting Director and Punisher as well as the recently released Imagescan, Robocolour 3, Destroyer, Lynx and MAC1200. From JEM there will be the major release of the HOT Technology machines while from GENI there will be the Australian launch of their intelligent projector range which is running worldwide acclaim together with the Ultima display projector with accessories. From Kupo and ADJ there will be the usual array of essentials, effects and PARs.

Showbiz Video/Thorn
Address: 183 Harris Street, PYRMONT NSW 2009
Tel: (02) 9660 8999 Fax: (02) 9660 7916
Stand No: N1
Company Principles and Titles: Kylie Little - General Manager (SBA); Don Sanford/Paul Grant (SBA); Steve Berryman (Thorn); Dan Mangion/Max Valente (Slipstream Software). All at ENTECH. Company History: Showbiz Video is Australia's foremost music video distributor and manufac-

turer of QMaster DJ Computers. Thorn is Australia's largest audio visual distributor for the retail, gaming and nightclub industries. New Releases/Special Products: Showbiz will take Australia's leading DJ computer - the QMaster - into the 21st century with the release of DVD (Digital Video Disc). DVD gives perfect clarity to video clips on any size screen. DVD has spelt the death of CD-I worldwide as an information format. Also new for ENTECH are the latest Orion TV screens, and the Slipstream Billboard System, an advertising and information system for venues using large or multiple screens. Check out the comparison of VHS, CD-I and DVD systems on show, and ask about music programs for use in your venue.

Showcraft
Address: 937 Bourke Street, WATERLOO NSW 2017
Tel: (02) 9698 3009 Fax: (02) 9699 9570
Stand No: P5



New at ENTECH 97: The Gam Command II with an LED display features a smart DMX reading capability. Lost DMX channel patches can be found in an instant with this unique device. Colourset Series 2 Scrollers will be on demonstration at the stand, along with DMX opto 4 splitters, the Gam Tools range and glass fibre optic systems.

Sound Magazine
Address: Level 5, 140 William Street, SYDNEY NSW 2000
Tel: (02) 9295 3300 Fax: (02) 9295 3485
Stand No: R22
Sound is an audio production magazine tailored specifically for readers throughout the Pacific Rim, South East Asia, Australia and New Zealand. Each issue examines the very latest in audio technology and exposes the techniques used by the world's leading engineers and audio professionals. In-depth product reviews, educational articles, interviews, applications and facility reports provide the basis of the magazine, along with a forum of comments from industry professionals. Stand contacts: Philip Spencer - Publication Manager; Greg Simmons - Editor.

Southern Cross Production Services
Address: 11 Spark Street, MURRUMBEENA VIC 3163
Tel: (03) 9569 5854 Fax: (03) 9569 5854
Stand No: K1



When you think of cable protection, think Southern Cross. Southern Cross Production Services are proud to offer a range of Cableguards for hire and sales. Our cableguards



played. Visitors will also be able to see and get information on all Columbus McKinnon theatrical hoists.

Total Fabrications, Inc.
Address: 1696 Walter Street, VENTURA CA 93003 USA
Tel: +1 (805) 676 3322 Fax: +1 (805) 676 1616
Stand No: R13
Ian Coles, President of Total Fabrications Inc. and Noel Anthony of Wild Gravity will be presenting Total Fabrications' incomparable range of industry compatible trussing, world patented fold flat truss, ground support systems, outdoor roof systems and custom constructions including the Nike Park and Budworld exhibits in Centennial Park during the 1996 Olympics. TFI can produce your custom project, through conception, design, engineering, manufacture and installation. With offices in the USA, UK and Asia and a team of industry professionals who have helped to achieve outstanding special projects to tight deadlines, no other manufacturer can serve you better.

Universal Lighting & Audio
Address: 4/43 Olympic Circuit, SOUTHP0RT QLD 4215
Tel: (07) 5532 9922 Fax: (07) 5532 4155
E-mail: ula@qldnet.com.au
Stand No: A13

Universal Lighting & Audio is proud to be one of the largest distributors of professional lighting & audio products in Australasia and New Zealand. Brands distributed by Universal Lighting & Audio include the world renowned Abstract UK Moving & effect lights, Le Maitre smoke machines and pyrotechnics, Numark Audio mixers and CD players, JB Lighting Germany moving lights and colour changers, NSI Corp. USA lighting control desks and dimmers, Griven and their own brand of Infinity and Litecraft. Present at this year's ENTECH stand will be the director Con Biviano, sales and programming expert Peter McQueen, Le Maitre's Rick Wilson, Abstract UK's Steve Watts and John Saunders, Numark's Jack O'Donnell and Nick McGeachin, JB Lighting's Axel Beisenwegner. We look forward to seeing you on our stand.



Vestax *see* Moore Music

Yamaha Music Australia
Address: 17-33 Market Street, SOUTH MELBOURNE VIC 3205
Tel: (03) 9699 2388 Fax: (03) 9969 2332
Stand No: M8
• Yamaha Professional audio products • Audio Technica microphones including new wireless range. Features: The O3D Digital Mixing Console surround sound demonstration, New MX 12/4 Mixer and EMX640 powered mixer, Pro R3 and REV 500 Digital Reverberation Systems. Guest: Joel Singer, Audio Technica microphone specialist, will be presenting seminars on all applications.



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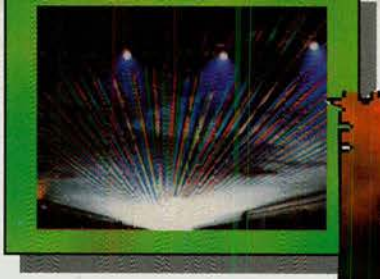


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Martin

MAC 600

The Smooth, Silent Colorchanger

The new MAC 600 is developed on the established success of the ultra powerful MAC 1200 moving head colorchanger.

Built on the same unique movement principles as the MAC 1200, the MAC 600 is a precision driven-yokemounted projector offering 440° of pan and 306° of tilt. This fast, instant and smooth movement makes the Martin MAC 600 the perfect lighting tool for all professional lighting applications.

Very powerful

By using the industry standard 575 W MSR lamp (750 hours lamp life), and successfully combining high light output with a smaller lamp size, the MAC 600 perfectly compliments the MAC 1200. Its radical Fresnel optical system creates a bright but gentle light beam with a soft, undefined edge - perfect for stage and theatre applications.

Beautiful Color Mixing

In addition to the color wheel (CTC, red, green and blue),the MAC 600 incorporates Martin's own (CMY) full color mixing system which uses Cyan, Magenta and Yellow to create numerous shades and color choices and ensures ultra smooth, uniform color mixing.
Beam apertures are available in two angles - 12° or optional 27°.

Naturally, the unit can be controlled via any industry standard DMX 512 lighting desk or Martin PC controller.

Silent Running

Most importantly, due to its convection cooling principle, the MAC 600 does not require a fan, enabling it to run silently during normal operation.

This noiseless feature makes it ideal for applications in the theatre, TV, concert and club markets. Compact, high-tech and functional the Martin MAC 600 has all the features to provide a professional light show for any occasion.



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BLUE 230 Dual Channel Compressor/Limiter: Dual Mono or Stereo Modes, Large Dual Range PPM Metering, Discrete VCA Circuits, Transformer Coupled Inputs and Outputs. 2RU. $9,250.00

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Musiclink (03) 9429 9299
Autocom includes: stereo, TRS connectors, separate stereo gate/expander, dynamic enhancer, external key inputs, auto or manual mode compression, 8 point gain meters. $359.
Composer balanced XLR and TRS connectors, +4dbu or -10dbV, 1/0 level + gain reduction meters, peak limiter and expander gate per channel, switchable true stereo or dual mono. $599.
Multicom balanced XLR and TRS connectors; hard or soft knee switching per channel: 4 channels of compression/limiting; variable ratio, threshold + output level controls. $599.
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CRIMSON-3021 2 channel compressor. Fully variable control of input gain, threshold, ratio and gain make up, stereo link facility, 8 segment LED metering, side chain insert point. $1299.

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Production Audio Services (03) 9415 1585



Summit Audio Tube Levelling Amplifier

RANE
Jands Electronics (02) 9582 0909
Rane MOJO MC22 2 Channel compressor that features a simple user interface that enables easy and quick setup. Each channel has a RMS compressor and an expander featuring Ranes ADX technology. Balanced XLR and 6.5mm connectors. 1RU. Internal PSU. $795.00
Rane DC24 A unique dynamics processor that has an inbuilt 2 way crossover as well as 2 compressors, 2 gates and 2 limiters - outputs can be either summed to one output for frequency selective processing or to discrete outputs such as used in a bi-amping situation. Fully balanced inputs and outputs. $1,495.

dbx
Jands Electronics (02) 9582 0909
dbx 262 2 channel overeasy compressor/limiter featuring dbx's famous auto attack and release, negative compression ratios (like the dbx classic160 family), true RMS detection and power summing and balanced inputs and outputs. 1RU. Internal PSU. $ 495.
dbx 266A 2 channel compressor / limiter / gate with switchable overeasy/hard knee detection. Features include Auto Dynamic attack and release controls, threshold and gain reduction metering, side chain insert and balanced inputs. 1RU. internal PSU $695.
dbx 1066 2 channel expander / gate, compressor and separate PeakStop Plus limiter. Featuring switchable overeasy / hard knee operation, manual or auto attack and release, switchable side chain with monitoring from the front panel and input/output and gain reduction meters. Available in 4 channel unit (1046). 1RU. $1,295.
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EVI Audio (02) 9648 3455
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OTHER

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continued over

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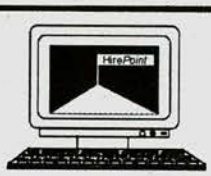
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Tina Turner

Wildest Dreams Tour

Full of energy, Tina Turner rocked back into town on her *Wildest Dreams Tour* with a spectacular light and stage design. The staging was designed by Mark Fisher and the lighting by Le Roy Bennett with the programming done by Gary Westcott. Lighting operator, Mac Mosier, was using an Icon console to control all the lighting gear (mostly Icons, Wash Lights, Mole mags and strobes) for the first time.

"I like it a lot, the console is great," he stressed. "The Icon lights are a really good system and you get great effects out of them. The console allows me to operate all the lights as well as call the spots *(six out front and six truss spots)* which are pretty easy. I stay pretty busy during the show, the hardest part is trying to keep up with Tina! Even though we're 150 shows into the tour, I'm still enjoying it."



Bytecraft's Icon system was supplemented by another system shipped over from South Africa. All the dimmers and cables were purpose made for the show by Bytecraft as all their stock was deployed in various theatre shows. Lighting Crew Chief Darren Hodge said that the rig only takes three hours to put up which is quite surprising.

Mac said that usually when he travels to Australia with a tour he has a few days off but with Tina it's all go and there is little time off.

"When we were playing outdoor stadiums in South Africa she would crawl through scaffolding and walk ramps in her high heels to get in front of the PA to reach the crowd on the other side," he said. "She's a bundle of energy and just a great person.

The most noticeable stage fixtures are six apparatus shaped like hair dryers which contain an original Le Roy Bennett light design called the 'Bob Lite'. Roy designed and made the Bob Lite with DWE's in an octagon shape with a colour changer in front of it. Bob apparently stands for 'Bucket of Bulbs'! The lights are stationary with an Icon and a Mini Mole plus colour changer on each of them. Also in the 'hair dryers' is a ring of MR16's on the perimeter.

There are also seven pods shaped like umbrellas wrapped in tin foil. In each pod are four Wash Lights and one Icon. During the acoustic part of the show, the pods descend around Tina to form another design.

The stage set had two elaborate, curving staircases which led up to the centre piece of the design - a huge eye shape. Behind the eye was a large video screen which could be viewed through the eye's iris. The edges of the iris were curved teeth which could meet in the middle as it closed - perhaps you had to be there! The most memorable image of the show is when the iris opens to a full circle to reveal Tina sitting upon a pedestal in front of projected flames for the number *Golden Eye*.

The large video screen is 30ft x 30ft and three Hughes projectors converge onto it.

"It's really bright, you can punch through all of the ambient light which is on stage," said Christine Strand, Video Director for the show. "We're using four main cameras with operators on them (two in the pit, one FOH and one on stage) as well as a couple of point of view cameras.

"The screen is pretty much central to the stage and we have more elements than just cameras on it. We worked closely with Mac to try work in some graphic elements which go along with the lighting. Some of the elements are from Tina's previous videos."

There are two playback reels on Beta SP

continued on page 57







ON TOUR
ROUGH RIDERS
Sent in this month by Mark Barry

A few years back I was working for several bands of fairly high profile, consequently their rider was more extravagant than the usual rider of a slab of beer. As well as beer both these bands requested a number of bottles of wine and spirits. The spirits made a lot of sense. Band "A" would do a 90 minute set, no toilet break, except for the boy-scout beer-swilling guitarist with no stomach for spirits who would do his ablutions onstage in a bucket or jug behind his Fender twin. He also had a specific lighting request. "Can you use the floor cans after I have my piss cause they dry out the dribbles on my duds quicker."

Back to the rider. At first the wine had me puzzled, no-one drank it as most of the time it was "chateau cat's piss". I soon discovered that this part of the rider played a valuable role as the Litmus Test of venue attitude. If the wine arrived sealed with no corkscrew or glasses, we knew that the venue thought that we were thieving bastards who would take them for a ride given half the chance and needed to be taught a lesson. This indicated that the door take for the band that night would not break guarantee no matter how many punters crowded into the room. They were going to stiff us in any way possible.

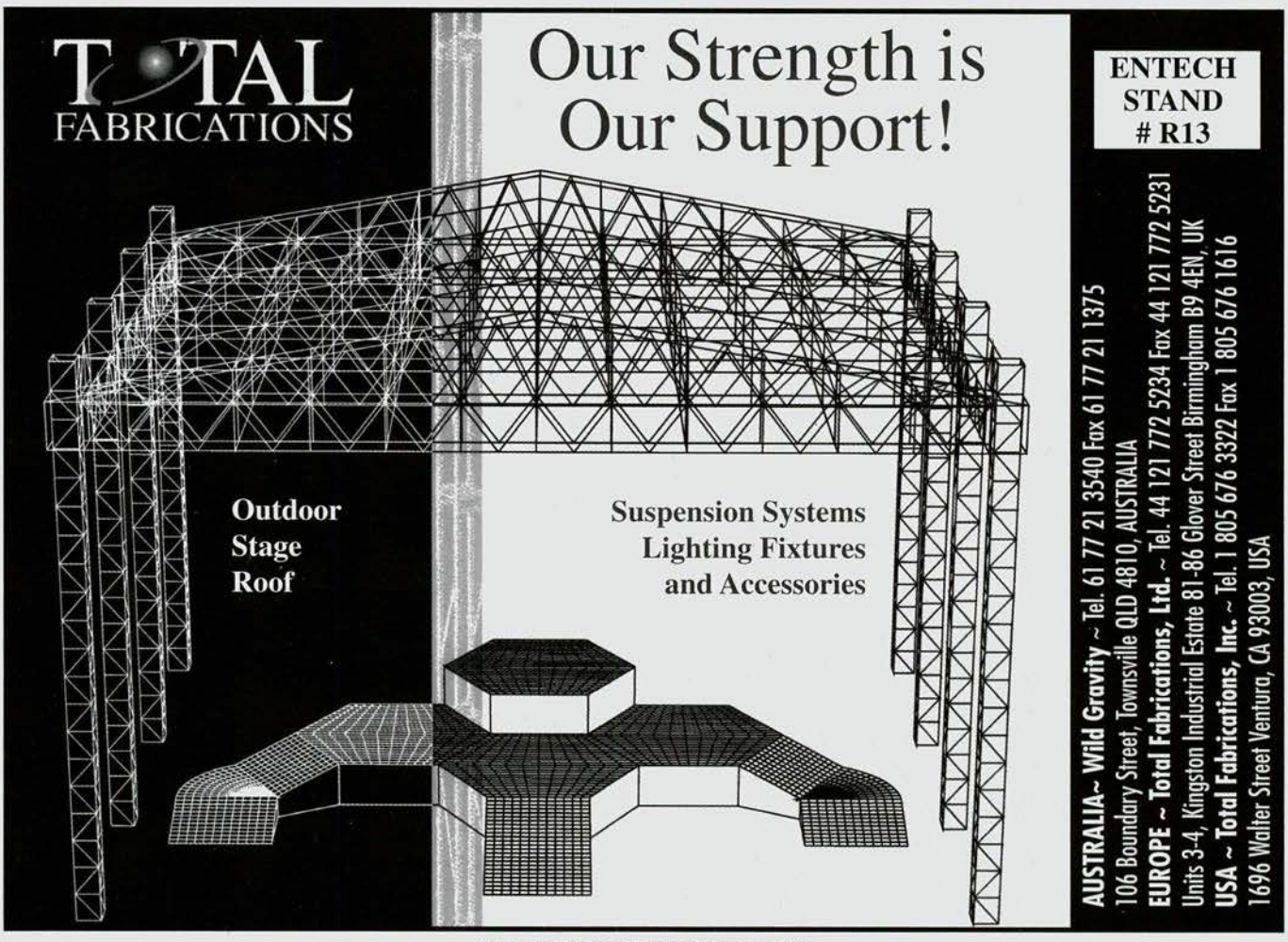
If the wine arrived opened and was undrinkable (usually warm and with no glasses) then we knew that they assumed that we were thieving bastards not to be trusted and that no bad behaviour would be tolerated. Never mind the door guarantee, friends on the guest list and selling of T-shirts and C Ds would be all out of the question. A gig to be avoided in the future.

If the wine arrived chilled, was a name brand vintage with plenty of glasses but no corkscrew then we knew that the venue respected the fact that we were inventive wicked bastards but would allow us the freedom to take whatever we could get, usually indicating half price meals in the bistro. When given quality wine complete with clean glasses, corkscrew and ice-bucket this meant that the venue loved and respected us so much that more beer and spirits could be had just for the asking. We would then phone the musicians to tell them to come down early as the meals would be on the house.

Band "B" had a more conservative and cunning rider in terms of quantity: 1 slab of beer, 2 bottles of white, and a half bottle of Johnny Walker.The wine was there for the litmus test, they never drank it and most of the time they didn't even take it home. It seemed a bit of a waste but the strategy was that the band had the wine on the rider because they really wanted the scotch. This band was not so high profile so if management negotiated down the rider, the sacrificial wine usually assured that some scotch would still appear.

The other ingenious part of this strategy was the conservative quantity of a half bottle of scotch, which was usually regarded by the venue management as fair and would give it approval as we were not being overly greedy. To our delight, on most occasions the lazy and/or stupid bus-boy sent to the bottle-shop would return with our rider including a full 750ml bottle. If it was Black Label instead of Red or Corio we knew the venue was either quite generous or very careless and we could easily put another dozen names of our regulars on the door list.

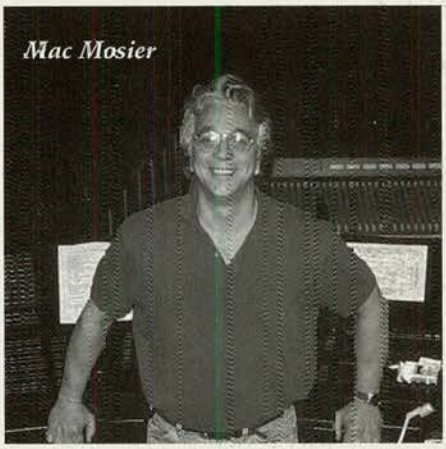
The rider litmus test is a proven experiment in gauging a venues commitment to live entertainment. We learnt to beware the gig when bad warm wine and no-name scotch exactly half decanted appeared because playing times would have to be strictly adhered to if we wanted to keep this anally retentive venue happy and not have our fee docked.



Write in Reader Service Number: 154

Tina Turner Wildest Dreams Tour

continued from page 55



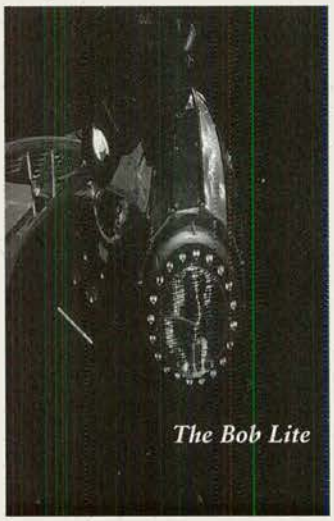
and Christine was using a Grass Valley 250 switcher with two different effects generators. There is also a still-store to grab stills from during the show and a computer control system which cues the tapes and sets up all the effects to make it manageable. Each song has a computer set up and then it's all taken live from there.

Getting the video gear into the venues hasn't been a problem although occasionally they can't use rear projection. Front projection can interfere with the set particularly the set pieces around the screen which open and close the iris. It still works but not quite as neatly. All of the video gear travels with the tour.

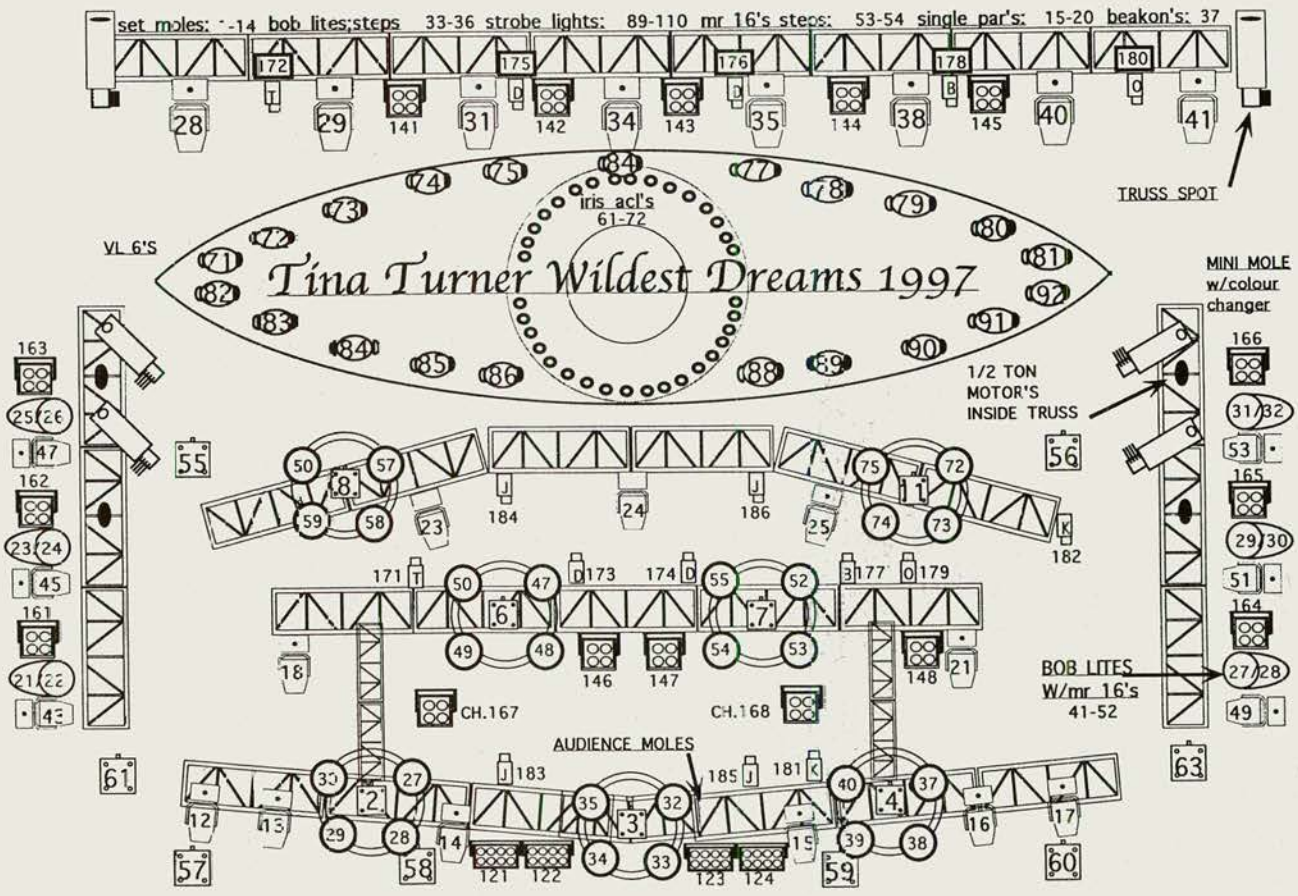
After the Australian tour, the entourage travels to New Zealand for several shows and then on to Brunei to play a private show for a Sultan. After that, it's a tour of the States where the show has been selling well. ★ *Cat Forcer*



Christine Strand in video land



Crew Party
Production Manager *Keith Bradley* **Production Administrator** *George Hoadley* **Stage Manager** *Malcolm Weldon* **Head Set Carpenter** *Dennis McManus* **Lighting Director** *Calvin (Mac) Mosier* **Sound Engineers** *Dave Natale, Kirk Shreiner* **Lighting Techs** *Brad Cardinal, Mike Letherman* **Video Director** *Christine Strand* **Video Engineer** *Josh Alberts* **Sound Tech** *Chad Shreiner* **Rigger** *Lee Tomlin* **Head Lighting Tech** *Darren Hodge* **Set Tech** *Vinnie Polifrone* **Stage Carpenter** *Bobby Reid* **Projectionist** *Michael Pentz* **Camera Operators** *Tommy Simpson, Craig Turner, Jay Strasser, Josh Adams.*





NYMPHO PLAYS ON ROCKERS ORGAN

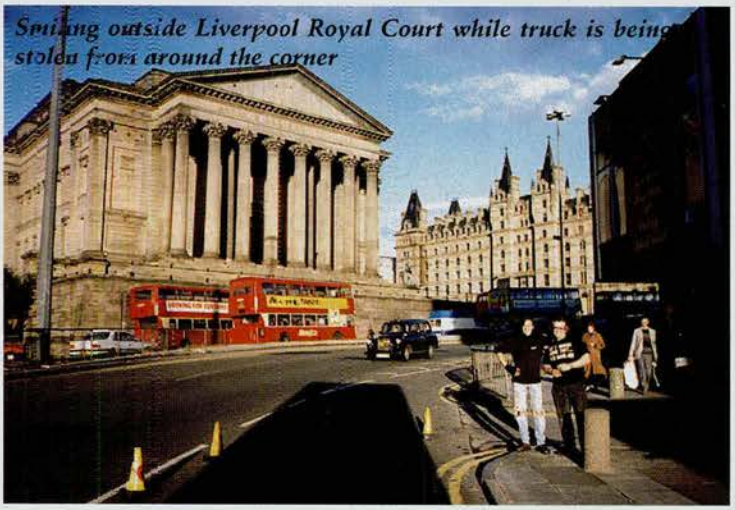
yes, it's Roadwarrior Felix again.....

Memories they say are like wine. They improve with age. It's funny how when you just return from tour all you look back at is the long miles, bad food, crummy weather and home sickness, but after a bit of time they're replaced by memories of 'the gigs that kicked', close escapes, late night parties and crazy times that come with life on the road. That's what touring is about. Amongst all the hours and hours of driving, setting up and packing trucks are the moments of beautiful madness that keeps us doing what we do.

Travelling on the huge motorways of Britain, cities blur into one another. Leicester blurs into Birmingham into Sheffield into Newcastle upon Tyne into Scrompney upon Smegpool? Often the only memory I have of some of the less memorable towns is the stage, dressing room, load-in and if we were banned from the hotel or not. Aberdeen Beach Palace I only remember because it had a huge sprung dance floor. Northampton 'Roadmender' had a Star Wars Pinball with the tilt removed and a five ball - I didn't want to leave. The Cambridge 'Junction' I remember had a new 40ch Crest console and a new Turbosound Floodlight system, I guess they felt the PA should match the grandness of the city.

Straying off the track (and country) a little, the Milky Way in Amsterdam had a very weird PA to match the town. It was made up of small white 'euro' style boxes linked to a computer that monitored every speakers' voice coil temperature, excursion, power handling etc. Funny gig that one. The crowd seemed really.....stoned or something.

No matter if you're in Paris or Perth, Cambridge or Cairns, while the band are out looking at sights you're looking at lights and big, black boxes. But hey...amongst the grey cities and forgettable gigs are the ones you'll never forget. London - well just because it's London. Twelve million people, eleven and a half million of them tourists. Groovy gigs, groovy people, groovy man.



Smiling outside Liverpool Royal Court while truck is being stolen from around the corner

Manchester up in the wet north - students, nightclubs, raves, Stoned Roses and Oasis. Where'll you'll find the Britannia Hotel (rule Britannia, Britannia waives the rules). Where one night a meeting of the Young Conservative Party found themselves sharing the bar with curselves. Curve and Swervedriver (pommy bands). Where the President, resplendent in suit, Union Jack waistcoat and bowler hat was greeted by a certain member of our party with "you look like tosser and you suck c**k". Forever improving Brit/Australian cultural relationships as reported in the NME later that week.

Just an hour to the west is sunny (not) Liverpool. I pictured Liverpool as the happy home of the Beatles, Strawberry Fields, ferries cross the Mersey and jolly football fans. Bugger that. After our van was broken into five minutes after arriving, then witnessing a weekend of mad drunken terror sweep across the town, I soon realised the once music capital of England is now the crime capital.....and loving it! One gig at Liverpool's Royal Court I felt lucky to escape alive. Our intrepid drummer decided that day to head down to London to see Australia play England in the rugby. Not only did he miss the game but had become lost on the train system. Time ticked by, no sign of him and a large notorious crowd was growing restless. Decision time. We drew straws on who would go out to explain the situation to the mob. Sad, I lost. Shit! After a shot of Bolivian courage I marched out to the front of the stage, sat on a wedge and said "Liverpool, I got some bad news and some bad news..." Then I waited for the beer cans to strike home. Amazingly they were pretty good about it. An excuse to get another beer and stab a granny. But outside all was not well.....



Australian Cultural Ambassadors hard at work

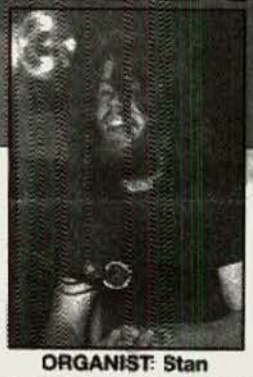
An angry scouser (local) threw a chair through the front window just missing a copper having a nose around inside. Suddenly very angry Busys (Liverpool cops) were banging on doors and snooping backstage. "Where's the bloody band?" one asked me. "Over there" I said pointing at the support band dressing room before running for cover. Two likely lads, high on paint stripper and baby laxatives, kicked in the stage fire doors, buzzed around like two escaped rabid dogs then ran off laughing into the night. Just as things seemed to be getting out of control Cabbage, our intrepid drummer, turned up and played the gig. Afterwards he was stripped, blindfolded, given horsy bite, dead leg, Chinese burn, boot up the date and then pushed into the seething streets (not really, but I wish we had).

If you ever get to Liverpool do try and spent a weekend at the Adelphi Hotel. crazy bars, crazy staff, huge impressive rooms and doormen that really do throw troublemakers down the stairs. You're bound to meet a few characters there. I once made the mistake of inviting a couple of 'Liverbirds' (local girls) upstairs for a drink. Spotting half a bottle of bourbon, a bottle of red wine and some coke undrunk they mixed them together, consumed it at an alarming rate, thanked me and then staggered off into the morning light.

THE Sport SHOWBIZ EXTRA SPECIAL

A NAKED NYMPHO PLAYS ON ROCKER'S ORGAN!

Horny groupies shut the Doors



ORGANIST: Stan

A ROCK band is splitting up because they can't handle their NAKED NYMPHO fans.

Four-piece tribute band The Australian Doors, who look and sound like cult rockers The Doors, are said to be sick of female fans who strip at their shows.

British-born frontman Steve Griffiths said it was all becoming a bit much after one girl climbed on stage at a recent show and MASTURBATED under the keyboard player's ORGAN.

Steve said: "This woman followed us everywhere in Australia and we'd see her at the front taking her clothes off.

"She'd always be there smashed out of her head, swaying to the music with a breast hanging out."

He added: "Then there was this one gig when she got onstage, stripped and sat under our keyboard player Stan's organ masturbating.

Lather

"It was quite pleasant watching her work herself into a lather and I think most of the fans thought she was part of the show.

"But our girlfriends started to find all that sort of thing a little too much."

The mysterious masturbator wasn't alone.

The hit band attracted a group of hippies who would shed clothes at their gigs and dance naked.

And some would sneak backstage to meet the band after gigs to tell them of spiritual meetings with The Doors frontman Jim Morrison, who died in 1971.



STEVE: Randy female fans were too much

Crazy

Steve added: "It was all fairly harmless but some of these women were crazy.

"One claimed Jim had contacted her through her TV set and she had written poetry he had created from beyond the grave. The stuff was dreadful. We just smiled politely and she went on her way."

The Aussie Doors are currently touring Britain before their final date in Prague in November.

The band and crew become famous! Pity none of it was true.

"You'll never walk alone" they sing in Liverpool; they're right, you should never walk alone.

A bit further up north is bonny Scotland and the capital Glasgow. Edinburgh to the east is much prettier and civilised but Glasgow is definitely the place of pace. A hard, working class city with lots of pubs and clubs to see and feel. In the heart of the rough and tough 'barrows' (market) district is Barrowlands our most successful venue in the world. The same crew has handled the gig for years. Stevie and the lads became real mates but Jesus, after they had a few beers I couldn't understand a word they said....."Aye Felix ya gunna hoot a noot for a root or what?"...err yeh what?

Like the Adelphi in Liverpool, Glasgow has the Central Hotel where fireworks frenzy would reach a peak. After a night of intense testing of various charges in various pieces of furniture we received a visit from the night manager, yelling something about setting off the fire alarms.

"I know what you've been doing" he growled. "You've been smoking illegal drugs."

"No we haven't" we protested. "We've been.....no we haven't."

Around and around the motorway system and onward to Leeds, Bristol, Norwich, Nottingham, Portsmouth, Cardiff and Swansea in Wales and to finish off, a gig or two in swinging London. Back to the Columbia Hotel, the party, the ceiling, swimming head and thoughts of our last gig. Why were we giving it all away? Well thankfully a quality piece of journalistic integrity called The Sport (actually a 'Martian had sex with Priest', tits on every page tabloid) solved that very problem for me. Talk about memories. Funny thing is I don't remember any of that.

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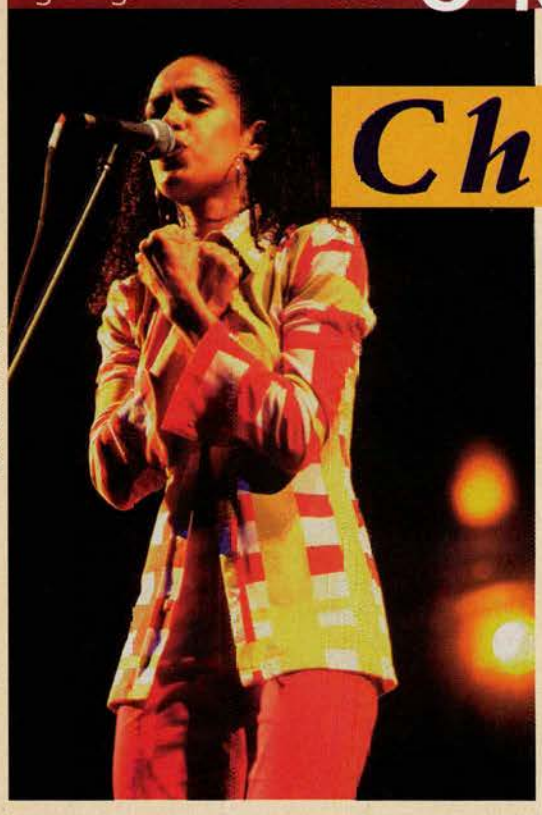
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LIGHTING ☆ TOURS ☆ PRO EQUIPMENT
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Write in Reader Service Number: 100



Photos: Marty Williams

Christine Anu

4 Gigs, 4 PA's

By Greg Weaver

WomAdelaide is the Australian leg of the global bi-annual music and dance festival. One of the highlights of this year's festival was multi ARIA award winner Christine Anu. Connections Webmaster also moonlights as Christine's FOH engineer and he filed the following report.

Since giving birth to her son 9 months ago, Christine Anu hasn't played any live shows with a full band, but a spot on The WomAdelaide festival prompted her to put a band back together and do a 'mini tour' culminating with the WomAdelaide show.

The nature of the 'pub' music scene has certainly changed with only a handful of bands going on long tours with a complete production. Generally it's house PA's and/or a local production for each city. This week was to be no exception with 4 shows and four different productions.

First up was the Riva, a 300 capacity nightclub below the Shereton on the Park hotel in Sydney. The decision there was to use the house FOH cabinets (JBL array series with subs) and console etc, and supplement the monitor system with equipment from The PA Company

When I went down to look at the PA system the day before I was dismayed to find the 50% of the horns didn't appear to be working. Fortunately the problem turned out to be a very small input attenuation knob on the power amp driving the horns. It is mounted at the back of the amp, someone has dropped some cables down behind the rack and accidentally knocked it

Soundcraft have made some great mixing consoles over the years, but it's this writer's opinion that the Spirit Live is not one of them. The lack of pads and the shelf type low end EQ make this a frustrating console to use.

Next up was a Newcastle show, an outdoor gig, at the Newcastle showgrounds The PA here was 6 x Martin RS1200 cabinets and 2 x Turbosound sub woofers per side. FOH console was a Soundcraft 3000, Klark-Teknik EQ, and Brooke Siren Crossovers completed the drive system. There was also a BSS Omni-Drive parametric EQ in the rack, but I decided that I didn't need to use it outdoors. This show was relatively un-eventful except for the failure of the left hand PA stack about 10 minutes before the show. This resulted in a flurry of system engineers who all ended up at the back of the drive rack. Moral of the story here: if you are going to have everything nicely locked away, make sure that you have the appropriate tools on hand to get to faulty cables in a hurry when you have to.

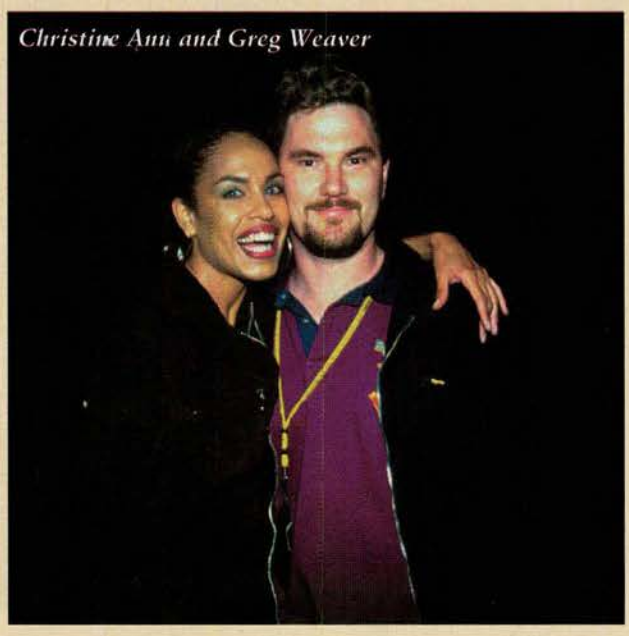
Back to suburban Sydney for show number 3 the Sand Hotel at Narranbeen. This venue is an acoustic nightmare, loud, hard and generally disagreeable. A complete system from The PA Company this time, with the tried and true Revolver B32 sub cabinets and JBL 12" and horn mid-high cabinets. I've never had a show that I've been happy with at this venue, with any band, and this one was no exception. The concrete floor and glass walls make even the most conservative mix sound to loud, and the (loud) stage sound washes over what ever the PA is producing.

This was a shame as I was really looking forward to putting the console, a brand new Sountracks Sequal II, through its paces. This console features an onboard dynamics processor on every channel. This gives you fully programmable noise gate and compressor and every channel without racks of outboard gear. Although I didn't get a chance to fully explore all the options in the hour before soundcheck, it looks to have some great features, like the ability to link the compressor of any channel to control any other channel, or the have the noise gate of one channel triggered by another channel.

And so on to Adelaide. This was the show that everyone had really been looking forward to and it was not to disappoint.

The PA system was supplied by Sydney company Coda Audio, and consisted of combination of cabinets from Meyer, Electrovoice and Tannoy The main PA stacks consisted of 8 x Meyer MSL 4 mid high packs and 8 x Meyer PSW4 sub woofers. These cabinets are self powered, all you need to do is plug electricity and signal straight into the cabinet and instant PA. Adding a bit more low end to main stacks were some Electrovoice EVMT2 subwoofers which each contain 2 x 18" drivers and use the EV 'manifold' technology. These cabinets can produce a great

continued on page 63



Christine Anu and Greg Weaver

We made the console,



...you wrote the ad.

● "I just sold my Mackie 8-bus and purchased the new Ghost console. The difference is amazing. The Ghost is the warmest sounding board I've ever used." - Mike Perkin (The Lab Recording Studio, Emmaus, Pa)

● "I replaced a console that was more than 3 times the price, and got a quieter, more transparent, and sweeter sounding console! Big console feel, with an amazing price" - Kurt Bevers, Brownell Sound, Oregon.

● "An incredibly musical console, ultra flexible with a real usable EQ. It is absolutely the best sounding project studio board that I've heard". - Howard Givens. Spotted Peccary Studios."

● "I love the desk, the EQ is just marvelleus. Ghost is the best 8 bus recording desk on the market." - Lee Hamblyn, Engineer.

● "Intuitive handling, flexible routing, great Soundcraft sound." - Melvin Fernandes, Recording Engineer, CMM Studios, India.

● "I use the Ghost for several radio shows doing live performances. The EQ is amazing, I'm on air in 5 minutes! Doing dance stuff is one, doing live stuff is another. But I use only one board for both of them. The Soundcraft Ghost." - Barney Broomer, Sonic One Rotterdam.

● "Ease of operation and the numerous in-line inputs for my synthesizers and samplers is why I purchased the Soundcraft Ghost console." - says President of Saban Entertainment and producer of Mighty Morphin Power Rangers Shuki Levy.

● "I didn't know how useful mute groups could be and how good the EQ had to be until we used the Soundcraft Ghost." - Stefaan Windey, La Linea Musicproductions b.v.b.a., Belgium.

● "It sounds great and the EQ is very precise which makes it very easy to pin-point the frequencies I need to work on. Ghost enables me to finish mixes on the console at home, without having to use any other studio." - Phil Kelsey (Remix Engineer)

● "The console is very user-friendly and is constructed so well that it can easily withstand the rigors of even the most hectic of production schedules." - Corey Dissin, Producer at Paul Turner Productions.

● "Both myself and our Production Director Jeff Thomas used the console for PowerStation and were equally very, very impressed. For the money, the console is fantastically versatile, has good headroom and a very impressive EQ." - Alex Lakey (Engineer for PowerStation)

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Soundcraft

Write in Reader Service Number 120

Status Quo

still rockin' all over the world

It had been 22 years since those eternal rockers Status Quo last toured Australia. The audience, a sea of bald heads banging away, loved them and there were none of the egos and pretentiousness of those other oldies who played last month.

"This tour is a toe in the water," said Pat Marks, lighting designer. "We pick up production on the way and the band pick up backline on the way, plug it into the nearest red light and just do it. It's quite something for a band of this stature to be able to do that. It's great and they have no problems - we're the ones who have the problems!"

Pat and sound engineer Andy Taylor are used to playing the large venues of Europe where the band is very popular.

"We play from 2000 - 10,000 per night and carry our own production," said Pat. "But we got fed up with playing Europe and decided to visit Japan and Australia!

"Basically the band got an offer and it seemed the right time to come," said Andy. "It was logistically good, equipment wise it's a .....well I won't swear..... it's difficult. It's still working out OK and you've got some great crew down here. The audiences are great, some of the guys out there have T-shirts on that even I've never seen before and I don't know where they got them from!"



Photos: Cat Forcer

"We didn't know what to expect but the reaction has been great," added Pat. "We thought they might be expecting a sixties revival band like Freddie & The Dreamers but the band still kicks arse, big time."

"We've all been in this business a long time," said Andy. "We know the equipment. If we're using old equipment we get round it, there are no attitudes, we deal with it and get on with the gig. If I wanted to walk in and complain, nothing would get done. You have to use what you've got. Even though the equipment down here is not cutting edge technology, we get on with it. We know the gear because we used it ten years ago. We do the show and make the punters happy because that's what we're paid to do.

"Although the equipment I'm using is not what I'd normally spec, I haven't really had any problems because I've used it before."

"I had some problems on the first Sydney date because it was the first time we've picked up the full Australian production," said Pat. "It was the first day fit-up and then straight into the show. You know what it's like - the LD comes in looking at a rig he's never seen before with a crew he's never seen before, and on top of that he has to program a show. And you've got to do that while the sound check is going on and the production manager is saying the doors are opening. But you get those problems anywhere from Iceland down to Australia."

The sound hire came from ACP in Brisbane and included a Yamaha PM3000, TMS3 PA, basic effects and Crown amplifiers. The band carry their own Garwood in-ear monitor system as well as their own rack of compressors and ra-



dio systems.

"I have no complaints about the gear here and the crew are lovely people," said Andy. "That's as important as the equipment. In Europe we're using an American company called Audio Analysts who have an incredible new sound system called the Aalto System which they designed with JBL. They've spent like a million dollars on the design and it's unbelievable. It's way up there.

"I mix the band to my ears, to my sound making sure it's punchy, loud and most importantly clear. It's a guitar/vocal band and it has to be clear. I use basic effects although I have one or two tricks I'm not going to tell people about. It's very straightforward although I'd be interested to see if other people could do it at times!"

The lighting gear came from East Coast Lighting and the rig was a basic three truss arrangement - front, mid and back. Added to them were a bunch of Pars, ACL's and Raylights as well as a few Dataflash.

"There's really no technology," said Pat. "I'm using an Avolites Pearl desk, I use Avo all the time usually a Diamond 11. The only problem is that the Avo Pearl software here seems to be two years behind the software we have in the UK. It took me a few hours to get my head around that. I've got such a basic spec it's untrue but for me it's good, it's getting back to my club roots. A basic little desk, a bunch of Par lights, know the music and you can't go wrong. As long as you get the cues in the right place, the punters never know the difference. Back in the UK I have the budget for things like Vari*lites but even so, the Quo show isn't a high tech show. It doesn't need to be. It's not about an LD masturbating. It's about making a band look good, as the No 1 man Francis says 'if they go out humming the lights, there's something very wrong'. They've come to see the band, what I do is fairly unimportant. I'm getting fairly old and I've got no ego anymore, I'm not a young LD trying to prove himself. The audience shouldn't notice what I'm doing. With a rig like this I have hot colours, cold colours and white lifts and I busk. The lights aren't as busy or flashy as you'd think they'd be, it's not a heavy metal show. I do whole numbers where I don't change the state. They are a 12-bar blues band, not a heavy metal band. If you learn the music, anyone could do what I do. I just grin that they keep giving me the cheque and we bank it!"

Pat has been with Status Quo for eight years now and his other main job is designing the London Fashion Week, bit of a radical difference. Before Quo, he worked for Big Country, Aswad, Aztec Camera, The Go-Betweens and Gary Numan.

"I'd never done any heavy rock'n'roll and I hated Status Quo," he explained. "They know this. I did a three week tour with them in 1989 and we fell in love with each other. Every night they pay me to watch a good band. They are such a good live band although I couldn't listen to them on CD."

★ **Cat Forcer**

CHRISTINE ANU 4 GIG'S, 4 PA'S

continued from page 60

deal of output for their size. Also providing infill and front fill for those members of the audience that were close to the stage were some Tannoy S300's.

Out at out FOH land were two Midas XL200 50 channel consoles. The XL200 is a 'cut-down' version of the famous Midas XL3, and is a really excellent console. The XL200 has logical, useful EQ, large knobs, easy to read markings, excellent faders and it sounds great.

Mixing in outdoor festival type situations has pros and cons, you don't have the acoustic restraints of mixing in small enclosed venues, but you don't get to 'tweak' the PA exactly the way that you may want to. Christine Anu was the last act to play on that day of the festival, and previous bands had caused the show to run a little late. Due to the noise curfew I was getting hassled to rush my line check but the crew at the stage end had things together, and it was all there for the first song.

So the week ended on a high note, the band played well, and everyone was happy. Off to the hotel for a couple of hours sleep before getting back to the airport to organise freighting the stage gear back home.

The rest of the Christine Anu team:
Stage Manager: *Michael 'Simmo' Simpson*
Monitor Engineer: *David Allpress*
Lighting Director: *Jamie Centofanti*
Management: *Rob Barnham*



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LIGHTING MONTHLY

April 1997

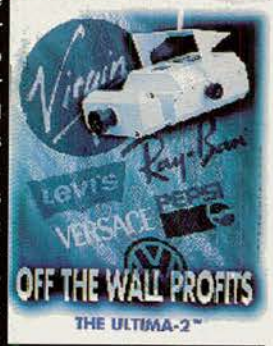
Edited by Catriona Forcer

LXbizzBITS

PRODUCTS

GENI ULTIMA

GENI has released the Ultima Projector for point of sale, storefronts, outdoor advertising, trade shows, theme parks and such projects. The Ultima Projector allows you to place, move or rotate projected logos or images on any surface. Metal and glass gobos or 35mm slides can be accommodated by the projector, as well as other accessories such as mirrors and rotating gobos. RRP is $999.00 (accessories and lamp not included) inc tax.



READER SERVICE NO 400

FREBLE

The new Freedom Freble from CCT Lighting is a fresnel or a pebble depending on which front lens you use. The lenses can be changed in seconds. The Freble lamp house contains a lead screw for smooth focusing adjustment of the new GKV or HX600 watt 240v lamp and the new Freedom dimmer module can be fitted to the Freble for DMX control. The dimmer also allows Local Proportional Control and soft start for long life of the lamp. All CCT Freedom lights have auto disconnect of the lamp tray for safety. The Freble is $580 including sales tax and the DMX dimmer is $245 inc. tax.



READER SERVICE NO 401

TechScape a new company is formed

TechScape, the newest force in Australia's entertainment technology industry, will celebrate its official launch at Entech '97.

Through a national dealer base, TechScape will provide wholesale distribution service to the entertainment industry. Their extensive range of audio, video and lighting technology is from leading suppliers such as: High End Systems, Wildfire, Anytronics, Citronic and MAD Lighting, as well as many other brands.

TechScape will be headed-up by Noel Bourne with the assistance of Sue Hickson, both of whom have previously been the driving forces behind this same product range which, to date, has been distributed through the Special Effects Lighting division of Greater Union Village Technology. Now with the launch of this new company, Noel and Sue will bring with them extensive industry and product knowledge, making them well placed to continue providing customers with their expert service and support.

TechScape will be exhibiting an exciting range of lighting innovations at Entech '97 on Stand A8. For further information please contact Noel Bourne on (07) 3858 5118.



The Ecodome

THE HOT NEW PRODUCTS AT ENTECH

We take a look at the products that will be on show in Australia for the first time

A.C. Lighting Ltd *Stand N21*

A.C. Lighting has recently appointed an agent here in Australia and the products available include: Wholehog II; WYSIWYG; Chroma-Q DMX colour changer; Vision theatre luminaires; Vision Light Enhancer haze machine; Power Lock connector; Procolor filters; Strong xenon followspots; and Datasafe flame proof DMX and colour changer cable.

American DJ *Stand H18*

American DJ professional lighting and audio products are being launched in Australia at ENTECH 97 as part of an international promotional campaign. Their expanding product range consists of beacons, bubble machines, chasers, dimmers, fog machines, helicopters, intelligent, theatrical and strobe lighting, lasers light stands, mirror balls, mixers, pinspots, touch panels and accessories. New releases include the American DJ DMX Intelligent Extreme, Arcbeam 150, Mini Gem, disco effects, world renowned Fog Hog and accessories.

Bytecraft *Stand A18*

New products on display include the new Strand 520 control desk with Genius Plus Version 2.0 software and the Pirouette Automated Lantern.

Chameleon *Stand S1*

Chameleon, as Australian distributor of Altman Stage Lighting products, will be showcasing the new T.V/Film luminaire range and Shakespeare profile ranges, along with Whitelight's new Wave FX.



Strand Pirouette

CLS *Stand N5*

Concert Lighting Systems is introducing to ENTECH 97: Folding Tri Truss; Great Australian Market - Moving Light Gobos - compatible with High End products; and GelFile a database of technical and visual information about colour filters.

Coemar De Sisti Australia *Stand F21*

Coemar have recently introduced new additions to their flagship NAT range in the form of MM (Moving Mirror Technology).

continued on page 70

Moving Images

Sweet Charity is the latest big budget musical to open in Melbourne. The all-singing all-dancing show may be a bit of a stock standard, but there is nothing typical about the staging of this latest production.

When the show gauze is flown up, the sparse stage is revealed. A heart-shaped revolve at centre stage, and along the cyclorama, a cut-out city skyline which looks more like a white model than a finished set. This is the basis of the production, and the canvas on which Marshall White, Video Designer, creates his work.

"I've always been attracted more to the moving image than the static."

Sweet Charity is the first large theatre production to make use of digital video, however it has been used in dance theatre, rave parties and rock musicals for several years. White's concern in using the technology in Sweet Charity was that musical theatre is quite traditional and formal, and audiences may not be ready for it.

"I was thinking 'How will audiences react to this sort of set design?'. Fortunately they have warmed to it. That means that there will be far more development in this area of theatre in general, hopefully for my own sake, not just for job situations, but also because it's great just to get your work up on a really large scale. There's something really nice about that."

While digital video is growing in popularity in its theatre applications, scenic artists should not feel threatened because as a medium it is not necessarily suitable for every show.

"If scenic artists feel threatened, the solution is simple. Just go out there and start developing images in another medium - why not start using computers to design? Digital design is not going to be used in every future production but it will open up possibilities for people who have been working in this field for the last ten years who have struggled to make this technology acceptable to the general public and the press.



"Back in 1987 when I was first doing it, there were only three other designers working with digital video, and it was impossible to get shows in galleries or to even get people to look at your work. They weren't interested because there was no re-sale value in it, so we ended up hiring galleries ourselves."

White says the first seeds were sown then. Now, digital video has gone berserk in art colleges and schools, in the party scene and in commercial animation.

A Joining of Forces

Mark Pennell, Producer of Sweet Charity had seen two operas Marshall White and David Myles had done with Martin Friedel, a writer and musician using digital video.

"I mentioned to David that I thought this could work in musical theatre comedy because we had already done a comedy and it seemed to work well with the audience. Mark Pennell mentioned to David at the time that he had the rights to Sweet Charity and that maybe they could do something together. It all eventuated from there."

David Myles became director of the show, and White's visions of digital video were incorporated into the production.

"Mark was always warm to the idea and in many instances insisted that the show only happen with an Australian cast and a new approach. He is pretty bold like that."

The project has been a year and a half, on and off. After the initial development phase it was put on hold while funds were re-sought, and then six months flat out of designing. White researched the script and film, and then looked at the staging of previous productions to see ways in which the digital video could be included.

"The trick with all this stuff is that it has to suit the show and be part of the storyline, but not overtake it. Sweet Charity is an acting/singing/dancing show primarily so it can't overtake that focus and dominate on stage except when it is meant to."

Technology & Maintenance

"We're using digital video, run directly off hard drives to create animated backdrops and sets. There have been particular problems around it because 99% of all digital video systems do not allow you to swap between animation clips without glitches or dropping frames. They're not designed to do that interactively, they're designed to do it in an edit suite situation or create run time lists, but in a real environment with instant access there is only one system that I could find that would do it, and that's the system we're using."

A live camera feed is required for one scene for which they used a straightforward mixing desk. A slide projector is also used to continue the projected images on the side walls to give it a "wrap around look".

All the digital video is pumped out of a $100,000 Barco video projector. Complete with special lenses, the Barco was the only projector that was bright enough and could



Sweet Charity

work with the type of technology used on the show. White said the projector was only just bright enough to do a stage the size of Her Majesty's Theatre because it is a huge screen to fill. The video is front projected and the Barco had to be hung from one of the front of house lighting bars from an incredibly steep angle for the images to avoid hitting the actors.

White says the maintenance of the projector has been an important factor. Servicing of it is expensive and lamp life is quite short - only about 500 hours.

The system is completely human controlled. Operators are need for the main computer, the video camera and slide projectors, and all queues are called by the Stage Manager.

White had to work closely with the Lighting Designer Krystoff Kozlowski to balance the stage lighting with the video projections. They could not have too much light on stage without washing out the video images, but at the same time could not risk the actors being under lit. The solution was to alternate the two based on priority, so that a scene would be brought up brightly with the back wall projections, and then lighting would be brought up for the actors to set the human element.

Compared to traditional set design where major changes would require bringing in scenic artists to re-paint sets, digital video has opened up possibilities for last minute changes with minimum fuss.

"There has been a lot of trial and error, looking at the scenes and then re-developing the images and animation. Even two weeks before the show opened I was re-working scenes and developing new ideas which is the nice process about this. It is possible in this medium to slot a new scene in overnight.

"A scenic artist may not be able to tell if a design has worked until it's a finished product, whereas it's very easy for me to throw a new image up there, look at it and decide if it works, and if it doesn't, take it down again."

The finished result is a mixture of animation, film and virtual reality. The white city-scape set becomes a park, and a detailed city scene, and even a church, with lots of surreal little episodes in between where the set is simply a screen. Moving images of animation or film are projected onto the screen in synchronisation with the action on stage. One scene has a city setting come to life as an animated three-dimensional virtual reality which takes the audience through the city, past cars and shops to a church which then becomes the action on stage.

White says he is very happy with the final result of Sweet Charity, although he is still surprised that it took so long for digital video to be incorporated into a show like this.

"The dividing line has always been risk. Can producers risk this type of thing in a big show. It's taken Mark Pennell a lot of guts and determination to do it on this show. He's one producer in the world who was prepared to take that risk. And because of that it's going to create some fantastic opportunities for people who are working in this area. It's all been worth it."

★ **Mandy Jones**

LXbizzBITS

PRODUCTS

TOURFLEX[R] DATA SAFE[TM]

With today's dependence on sophisticated control systems and USITT DMX512 protocol the clarity and continuity of control signals is paramount. AC Lighting claim their Tourflex Data Safe cable can meet all your control protocol needs.

The sleeving of all Tourflex Data Safe cables contains a proprietary compound which will not support a flame or melt making the cable FR (flame retardant) rated. This compound also toughens the jacket giving the cable better resistance to damage caused in everyday use.

READER SERVICE NO 402

CHAMELEON 2

Constella have released an updated model of the popular Chameleon Colour Changing Multibeam Effect, called the Chameleon 2. The new version offers fan cooling plus an addition of 5 gobos to compliment the 16 different dichroic colours. Retails for $595 inc tax and lamp.

READER SERVICE NO 403

CLAY PAKY

Entech '97 marks the first year anniversary of the Clay Paky distribution company Show Lighting Australia. New products on the Clay Paky stand this year include: the new Miniscan replacement which is being kept under wraps until show day; VIP and SIP display projectors; the new flagship Stagescan; and the new high powered Comb colour 575 colour changer.

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A GAFFER'S TRUCK

The Inside story

"My philosophy," says Reg Garside, "is that I can walk onto any job, and nine times out of ten, I can build anything that's needed on the spot. It's taken me fifteen years to build up to where I am, but if I can turn up on a job, and not have to bring anything in, I feel I've achieved something."



Among the jobs that Garside has walked onto, and provided the lighting for, are *Dark City, Street Fighter, The Island of Doctor Moreau, Lorenzo's Oil, Gorillas in the Mist, Mosquito Coast,* and many more.

This is the story of a man and his truck. I was curious to see what was in a gaffer's truck, and why, so I visited Garside and his two trucks in Brookvale.

The 20 tonne Scania truck is 27' long, 8'high, and 8'wide, and it's full. Stored on the back doors of the truck are Manfrotto Ianaro double wind up stands for 6Kws, 4Kws, or any reasonably heavy lamp. They can take up to 30kg weight. "I just like that brand," Garside says. "When I bought these, fifteen years ago, they were the only ones around that did the job I wanted them to do. You've got to keep the maintenance up on them, because there's a steel wire that runs up through them. I just some bought some by Avenger, which are a bit more sophisticated, with moveable legs."

Stored on the floor in racks are the reflector boards, polystyrene on the left, then silver, mirror, and gobo boards cut out of ply. 50 rolls of gels are above. "Normally when you go onto a job, one of the first questions you ask a DOP is what kind of gels he/she prefers," Garside says. "Most DOPs are pretty good, and you can get away with a normal gel pack. But some might want to put different types of fill or colours into certain shots. The range of gels you can get is enormous these days. You'd need a truck to carry to carry them all. I have a pretty good range here, I carry CMC, Lee, and Rosco. Some colours, and diffusions are better in different brands. I have a good cross section. Sometimes a DOP will ask for a special gel, which has to be brought in from overseas."



Garside echos what Geoffrey Simpson DOP, said in March Connections. Australian gaffers are extremely well prepared, and equipped. "You can turn up on a shoot with a rig that's worth $ 5m, and only use one lamp that's only worth $20 in hire fees," Garside says. "Overseas, the DOP has to write down every piece of equipment needed on the shoot, and then hire it. The DOPs here are pretty well looked after in that way."

Most gaffers and their assistants are qualified electricians, which is important for Work Cover, and the recent emphasis on safety.

The trolleys

Speed is essential, for getting in and out of locations, and not holding up a crew. "You can never have a truck big enough, because you always fill it up. Once your truck's in position on location, or in a studio, you really need to be as mobile as possible. Otherwise sending guys back to the truck all the time is pretty wasteful. So if you can have as much equipment as possible lurking around the set, it saves a lot of time and money."

Garside has arranged a lot of his gear onto trolleys, so they can be wheeled from the hydraulic lift on the back of the truck, onto set. He obligingly brings the trolleys out so I can have a look.

One trolley has high stands, and medium high stands. They are Manfrotto, which have1 1/8" spigotts, and carry up to 15kg. Another trolley carries 10 normal C stands, and 5 short ones. In the truck is another trolley with sixteen 5/8 stands.

The next trolley is a cutter box, with all the nets, and cutters, used for cutting light, and creating patterns. There are diffusers, by Rocket. "We like to support our boys here, so we tend to try and go with our local industry," says Garside. There are half, and one stop nets, which take that equivalent out of lights. They are open enders, so no edge is visible. There are silks for diffusing and softening the light. The best and softest diffusion is a draughting paper, 1000H. He also has black wrap, a heat resistant foil that bends and blocks light, as well as white wrap which bends and reflects light.

The next box standing on the pavement is a 'gubbins' box, where Garside keeps all his bits and pieces. Gels for lamps, diffusion frames to put in front of lamps, gaffer tape, staples bulldog clips, spare plugs, bulbs, testers for power, safety chains. Garside keeps six trolleys on set.

'As we've come on in the industry, we're more safety conscious. It takes more time, but it's essential," Garside says.

Inside the truck

As we go in Garside explains, "No two trucks are the same, as everyone has different ideas of how they want to pack their equipment. Trolleys have given me more room for shelving." Both walls of the truck are shelves along the entire length.

On the left are Matthews hi hi rollers, stands that go up to 22', designed for holding scrims, overheads. They have a wide base, and high boy heads, so you can clamp frames on one side, and lamps on the other. "I prefer Matthew equipment," Garside says. "I've used it for a long time, and I've never had any problems with it. I'd rather stick to things that I like. As we go through the truck, you'll see that I've got different types of lights. If I think one brand is better than another, I'll buy it. In my early

continued page 72

THE HOT NEW PRODUCTS AT ENTECH

continued from page 65

Disco World ***Stand K3***
Disco World will be displaying: Ryger (UK) intelligent lighting, effects controllers, stage controllers, powered controllers, dimmer and switch packs.

Electrosonic Systems ***Stand U19***
On exhibit will be the new and much acclaimed Celco Ventura 1000 lighting control desk; the Electrosonic 2 x View free standing videowall display; the Maris Pico, probably the smallest DMX lighting desk ever!; and the Celco M9, providing videowall control from a lighting control desk.

ELSTA ***Stand F18***
New products include: Laser ShowSystems Starbeam 5 (worldwide release); Botex DMX high powered 512 remote controlled strobe and laser; the FAL 2000, official launch of the FAL 1000 intelligent scanner; Gecko lamp range.

Gemini Lytequest Australia ***Stand M15***
New product releases: Motor Heads.

INLITE ***Stand U13***
IRIDEON and INLITE bring to Australia the first range of fully automated colour change architectural luminaires.

Irideon Lights



L.S.C. Electronics ***Stand P16***
New from LSC Electronics this year is the full DNA range of DMX512 distribution products. A fully working AXIOM 48 and AXIOM 60 will be shown in expanded format. Shown for the first time in Australia will be the range of Proplex hi-spec data cables and Litestructures stage decking system.

Laser Theatre Lighting ***Stand O24***
Will display their Alpha Laser Controller with new 4-channel PCAOM system, 200MW Solid State Laser and 20MW HeNe Laser.

Lightmoves Professional Entertainment Services ***Stand L5***
Some of the many manufacturers to be represented will be Dynalite with their new range of CE approved architectural dimmers, Digilin's new DMX controlled Weatherproof Fibre Optic Lightsource, Lighting Solution's new DMX controlled Low Voltage Dimming Cabinets.

Lightmoves Technologies ***Stand I21***
The latest projectors and accessories from Optikinetics, including K1, K2, K4, Solar System and motion mirrors. New equipment from Teatro including "Versa Disc", the new effects disc. Fibre Optic displays and products, new decorative lighting products will be shown. Cloud Electronics including new Zoner amplifiers and controllers can be viewed.

Celco Ventura desks



Mediavision Australia ***Stand S6***
Low cost Colortran 5/50 Ellipsoidal Profile range, the new Ianiro 1200W Solaris Fresnel, and the Zero 88 Sirius 250 Lighting Console incorporating the patented 4 Wheel Drive moving light control. Lee Filters products will feature the expanded range of Colour Magic Packs suitable for visual demonstration of light filtration principles along with the new Technical Lighting Packs.

Miller Professional Products ***Stand U16***
Studio and portable lighting fixtures including Balcar fluorescent studio lights, K5600 portable HMIs and Lowel portable tungsten lighting kits; Avenger/Manfrotto light stands, grip and gaffer accessories; Westcott light modifiers, reflectors and backgrounds; GAMColor lighting gels and GAMFusion diffusion.

Osram Australia ***Stand P10***
Osram will be showing their complete range of photo optic lamps including the new HSR1200W. On display will be Short Arc, Xenon, HMI, HTI, HSR, HSD together with CP, T and projection.

Philips Lighting ***Stand M13***
Philips Linear Stage and Studio lamps will be exhibited at ENTECH. With a colour temperature of 3200K and R 7s bases for easy replacement, Philips has a vast range of linear lamps for almost any application.

Quantum Efex Pty Ltd ***Stand X16***
Introduction of the new "Quantum Ef-

continued on page 90

LXbizzBITS

PRODUCTS

WYBRON ROTATING GOBO CHANGER

On April 1st Wybron Inc released The Goboram - a three-gobo changer and rotator in one. Designed to slide into the pattern slot of Source 4 and Shakespeare 600 lights, The Goboram holds three gobo patterns, changing and rotating them according to pre-programmed DMX cues. The system runs off Wybron's Coloram II power supply. In the short term, mounting The Goboram will require milling an additional slot into light barrels, just opposite the pattern slot. For a limited time though, Wybron will provide new barrels free with every Goboram purchase (in exchange for old barrels). The company expects demand for The Goboram to be such that lighting manufacturers will eventually include the additional slot as a standard feature.
For more information contact Wybron 0011 1 719 548 9774.

NEW FROM SELECON

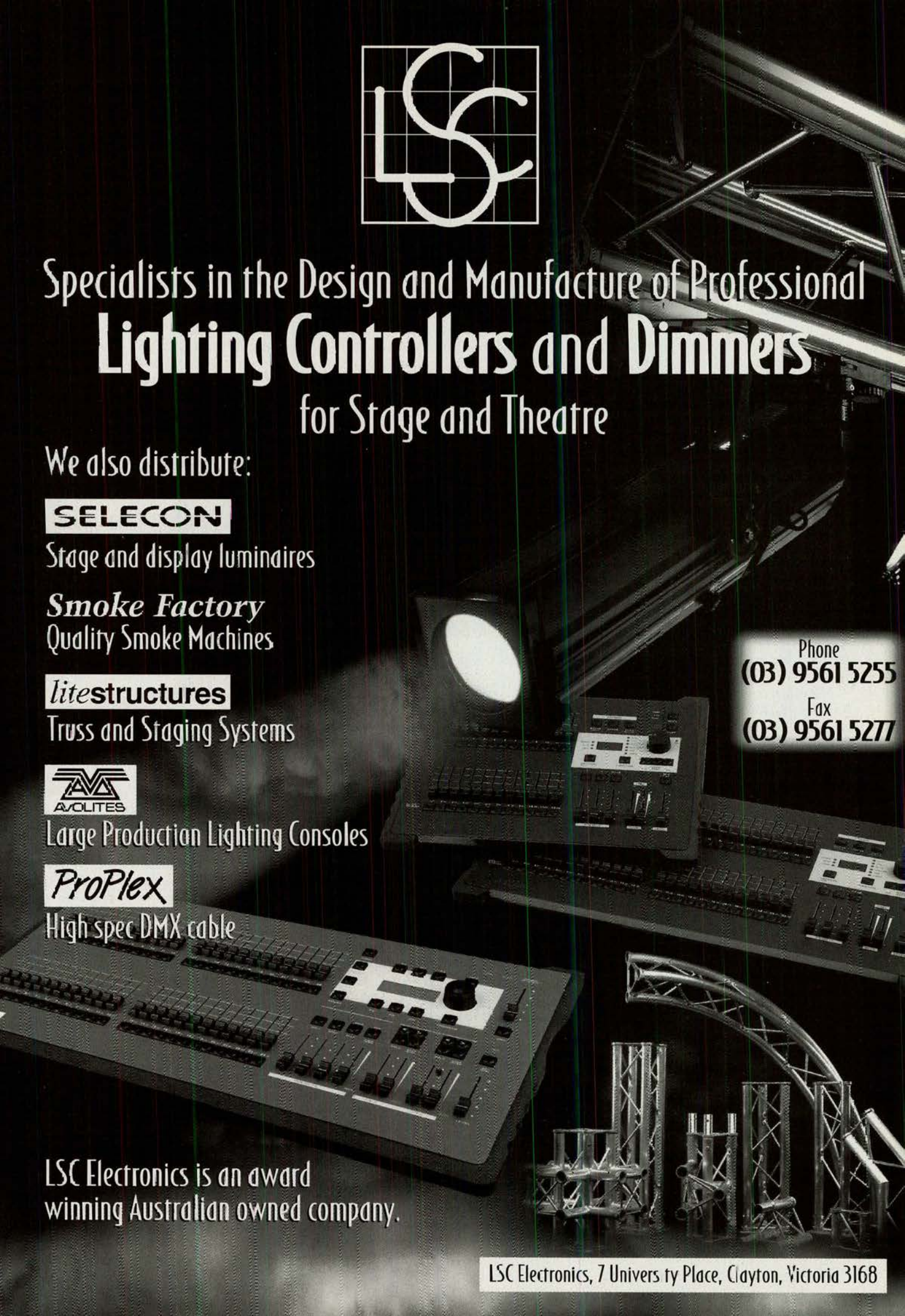
Pole operated yokes for all 1200 and 2000/2500 watt Selecon fresnels and profiles. A retro fit yoke kit gives control of pan and tilt for those hard to reach positions while a factory fitted third control gives focus in the fresnel range.
READER SERVICE NO 404

SILENT SIX

Now the soundman and the gaffer can be friends! That's what Rosco claim with their new Silent Six 6K dimmer which is lightweight and they say absolutely silent with no lamp filament 'sing'. Local and remote dimming control means that the dimmer can be at the power source or at the light. Silent Six dimmer is specifically designed for the film and TV industry, with preheating of the lamp filament and soft starts to ensure maximum lamp life. Contained in a compact carry case, complete with a 25 amp plug, the Silent Six costs $1800 ex tax.
READER SERVICE NO 405



42 LX v2 70 3/26/97, 5:15 AM


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GAFFER'S TRUCK continued from page 69

days, I used to buy a lot of Ianaro quartz colour lamps, and they've stood up to it. A lamp has to stand up to being put in the truck two or three times a day, driven all round the world. These lamps have been to Africa, Easter Island, all over Asia."

Near the back are two 6Kw Arri's. Close by is a Sirio 4Kw. "I went with the Sirio 4Kw, because the Arri 4Kw is a lot heavier. Arri tends to overbuild things a bit, at the moment. So I went for the Sirio, which gives you the same sort of light, and punch, but a lot lighter. You have to think about carrying these things around, picking them up, and putting them on stands. Believe me, it's not that easy at times."

Sitting in the shelves are some Ianaro 4Kws, and 2.5Kws. Above are 1.2 Ianaros,



and the 575w Ianaros, and the 200w LTMs. This is Garside range of HMI fresnels.

He has a variety of 4Kw pars, LTM, and Arri. Also 2.5Kw Ianaros in red boxes below, 1.2 LTMs and Arris above, and 575w LTMs. All the big lights are in the generator truck.

In the tungsten range, he had Arri 5Kws. "I like them because they're a very compact, lightweight lamp, and they stand up to most rigours of location lighting. I've had these for ten years. I have these 2Kw Mole-Richardson, because they're very robust, these have been around forever." He has redheads, and 1Kw pups, a fresnel lamp. The blondie is Ianaro. "I personally think that the blondie is the most efficient lamp there is, for the price, output, and type of light you get out of it."

A range of smaller lamps are packed, 650w Tweenies by Mole-Richardson, 200w inkies in boxes up there somewhere.

Below are a couple of dimmer racks, for adjusting lighting during a shot. "These days a lot of DOPs prefer to have their whole set on dimmers, rather than us clambering up." Garside has DynaLite, Jands, and LSC desks. On *Dark City*, they had 48 way systems which could be bumped up 96, around the entire set.

There are drawers of rigging gear, gaffer clamps, barrel clamps, scaffold clamps, Gclamps, and more clamps. Beyond that are lots of boxes of big flouro systems, by Kino Flo, with special flicker free, colour corrected tubes for film. He has both daylight, and tungsten.

"This truck can do features, or commercials. It can do table top stuff, with mini flo kits, right up the biggest feature." He then shows me a tiny little kit of flouros for doing miniatures, and its tiny ballast.

"Australia is still a place where we are resourceful. We will use our heads, and build something rather than throw money at it. That's why it's so good to work here."

In the middle of the truck is a shelf of distribution systems. The boards are inside, and the entire length of the truck below is full of cables. There is scaffolding up the back, rigging devices to span across 20' rooms, and hang lamps. "We can virtually do anything out of this truck. I used the



stands to get steel girders into my house."

Stored down on the ground are 'ballast', for striking an arc inside the bulb of a discharge lamp. "These ones are called magnetic, and are a bit restrictive. The new ones are flicker free, and can be used for all speeds of filming." Garside has twenty magnetic, and six flicker free ballasts, which are about 50% more expensive.

Further down the back, all the overhead materials are stored. 20x20, 12x12, 6x6 scrims. "We usually have about 8 or 9 variations, so we have about 40 different scrims on board." About 20 drawers hold spare bulbs, electrical components, plugs wire, testers. They have to test and tag all their equipment, for Work Cover.

The space is like a boat, everything stored effficiently, and sensibly. Garside even uses the term, 'on board'. Another little area of drawers near the front has knick knacks, spares, torches, meters, bulbs and tools. A hack saw hangs overhead.

This is the basic truck ,which carries everything up to a certain size. After that, the big stuff goes in the generator truck. The whole system is well thought out, and probably the result of years of refinement, or learning the hard way.

The generator truck

The generator is big, 180 kVA, made by Viking, an Australian company. Garside found that a 65 kVA wasn't big enough.

Below the belly of the truck is more cable. This is at least 1" thick, which can pull 300amp phase. "It's good that Work Cover did come along, because it's made it a lot more safety conscious, and it has put the onus on us now to make sure we look after ourselves, and everybody else," he says. "We all started off with a Camlock plug, which is not entirely safe. You can put your finger in the female end, which means you can do nasty things to yourself. We're phasing them all out, and putting the safer Power lock systems in. We haven't been told to do that, but we are. It's costing me about $30000 to change them all over."

This truck carries the 20Kws, the Dinos, 12Kws, 10Kws, and distribution systems. Hanging on the wall are some very very



big Matthews stands, called super cranks. They hold 20Kws, and 12Kws, and can carry up to 90kg. Each one costs about $8000. The Crankovators take about 68kg.

Two brand new Mole-Richardson 10Kws sit on a shelf. "I bought these because they're very light, they have a lovely spread, and they're a proven light," he says. A 300amp Power Lock distribution system sits near an LTM 20Kw, which is a physically smaller lamp than the 10Kw Mole-Richardson. "These days, they tend to make a lamp that suits the biggest fresnel. They build the lamp head, and make it a 10Kw, then change the position of the holder inside, and make it a 20Kw."

Up the back the 24Kw Dinos, which provide a massive bank of diffused light, are stacked along with the Dinettes. It takes four men to put a Dino up on a stand.

On another shelf are cable covers, safety covers for cables going across footpaths, or roads. There are frames, distribution systems, big gels, two big 12Kws. "Now they've brought out 18Kws, 24Kw tungsten lamps. They just keep building bigger and bigger lamps. You've always got to try and keep up with everybody else, keep up with 20Kws, and 24Kws. An 18Kw costs $46000. There's only seven in the country at the moment. You're always playing catch up, it's a bottomless pit. You never stop spending money. All lamps are different, there's no lamp that does two jobs."

★ **Madeleine Murray**

VS 3 Special
- 200 W MSD scanner
- 24 colours, 20 gobos
- shutter, dimmer
- stepper-motors
- DMX-512

VS 3 Special Plus
- 200 W MSD scanner
- 36 colours
- 12 gobos (6 rotating)
- shutter, dimmer
- effect wheel
- stepper-motors
- DMX-512

VS 4 Compact Plus
- 575 W HMI scanner
- 24 colours + 24 mixed
- 6 gobos (rotating)
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- diphragma, effect wheel
- slide-in moduls
- stepper-motors
- DMX-512
- weight 18 kg
- only 65 cm high
- only 27 cm wide

VS 4 1200 HMI
- 1200 W HMI scanner
- 24 colours + 24 mixed
- 5 gobos (rotating)
- shutter, dimmer
- diphragma, effect wheel
- slide-in moduls
- stepper-motors
- DMX-512
- weight: only 35,8 kg!

Varycolor 2000
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- 36 colour combinations
- 4 gobos for beam angles: 4°, 7°, 14° and 21°
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JB-Scancontrol 1612
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LSC in EUROPE

Dean McFadden endured the QF9 to London, cattle class of course, and arrived in the grey dawn of a typical winters day. Clearing customs he hired a car and drove hours south of London for a dealer meeting. Finished he drove back, along the M1 through the worst winter storm of the year. 7 people died in the storm.



Navigating into London he found his hotel, minus parking, which was a separate exercise costing twenty quid.

If this sounds like one long day it was, flying to London from Australia occupies one long night, when the sun goes down the 747 chases it, you go 20 hours in darkness. Dean got in the bath with a bottle of duty free then hit the bed, only to wake minutes later when the fire alarm went off. Standing in the freezing street dazed, disoriented and with your mouth feeling like it's lined with suede, anyone else might think negative thoughts about their lot in life. Not Dean.

I caught up with him at MusikMesse, the world's largest trade show of its kind. Amongst the 1,300+ exhibitors were Feiner Lichttechnic, a Bavarian based lighting firm who distribute LSC in Germany. Dean was there to handle technical queries and demonstrate the control boards on show, which included Atom and the new Axiom 48. It was first shown last year but CE compliance held it off the market until now. Along the way it acquired an extension, with full moving light control including access to fixtures and groups, with preset focus. The wait improved the product.

Axiom 48 now has the features of a moving light console, with the added benefit of faders. In simplest form it can operate as a 48/96 board, with a few minutes exploration the soft patch reveals itself for ultimate control of all 512 channels. A 60 channel version is underway also, although the notion of channels is obscure, the 60 will control up to 120 channels from faders up to the whole possible 512 channels from the patch. There are four patch lists available, each will allocate any fader or channel to any of the 512 DMX outputs.

Dean is demonstrating the Axiom to a shifty type of Ivan from the former Soviet Union. His country of one of the 'stans', Uzbekistan or similar. There they count the day lucky if the mains is flowing in a continual and healthy manner. 220 volts may mean little to us, but when you're out on the Steppe and the wind is chilling the cattle at -30°c, your fridge is the warmest place to huddle. If it works, mostly they are turned off eight months a year.

Ivan seems most impressed the Axiom comes standard with desk cover, desk lights, floppy drive and video out. He keeps looking at the little Atom and finally asks 'voz is dat?' of the RCA connector on the back. It's the audio input for bass trigged chasing, says Dean. Ivan ambles off happily, drawn towards the smoke machines, puffing clouds of green smoke himself and slowly killing us. Smoking is SOP in Frankfurt.

LSC do most of their business in export, as I leave Dean is negotiating with a potential distributor for South Africa. The benefit of a show like MusikMesse is it draws the internationals.

★ *Julius Grafton*

Three phase mysteries revealed

(or how I learned to stop worrying and love the neutral wire)

By Andy Ciddor

For many of us three phase mains power is something we deal with, but know only a little about. My personal *enlightenment* (I find it really hard to avoid bad lighting puns) occurred after years of driving sparkies* berserk with questions and attempting to make sense of electrical engineering textbooks without the benefit of the necessary maths background.

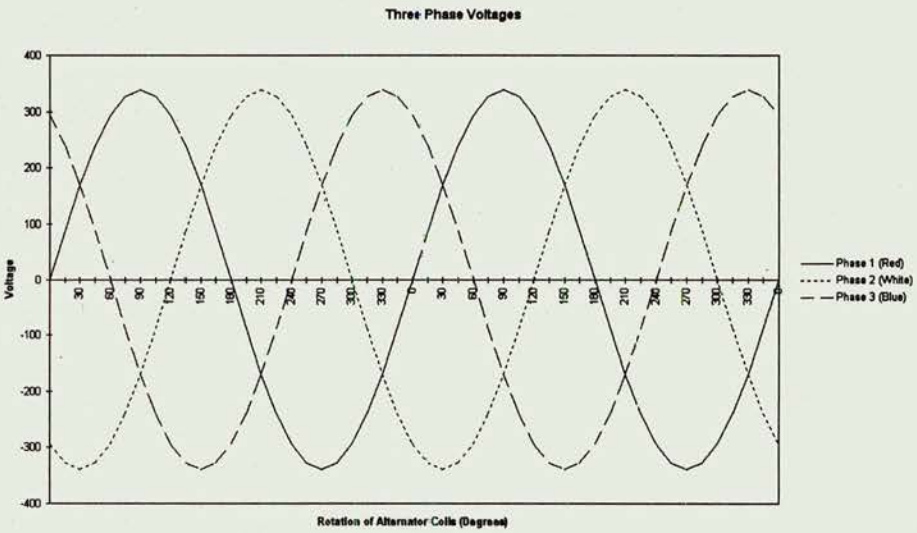
The non-mysteries of single phase.

Most of us have some sort of understanding of single phase mains, so let's start from there. A potential difference (voltage) is produced in a generator (correctly known as an alternator) when a coil of conducting wire is rotated in a magnetic field. As the coil rotates on its pivot point, the size and direction of potential difference varies in a pattern with a sine wave shape. Since mains generators rotate at fifty revolutions per second (3,000rpm) the sine shaped voltage varies at a rate of fifty cycles per second (Hertz). To save on cable costs on the long run from the generating point (Snowy Mountains, Latrobe Valley etc) to the consumption point (luminaire, amp rack, electric slippers etc) only one wire is used to carry the current from the alternator to our local substation. The earth itself is used as the return path for the current.

At the socket end, the Active wire (the brown conductor in an extension cable,) is connected to the generating station, the Neutral wire (blue in an extension cable) is connected to the earth at the local substation and the Earth wire (green and yellow striped in an extension cable) is connected to the earth somewhere close to your switchboard. The Earth wire has nothing to do with distributing power: it is just the utterly, utterly important wire that protects users from electrocution. In switchboard and building wiring the cable colours are different: Red is used for the Active or Phase wire and black is used for the Neutral. The Earth wire is either plain green or green and yellow striped.

The mystery of the extra phases.

Because power generating plants are expensive to build, it's important to get the most bang for your buck. Putting more than one coil in an alternator produces more electrical power for a relatively small extra cost, but has the side effect of producing the additional power out of step (out of ***phase***) with the first coil, as the coils rotate through the magnetic field at different times, as you can see in the diagram. Each of the Active wires from such a system is referred to as a Phase wire. It's possible to build generating systems with anything from two to two dozen coils producing power, but three is generally accepted as a compromise between complexity and economy, besides three is a good number for some other reasons. The three active wires are colour coded Red, White and Blue for switchboard and building wiring and the Neutral is black.



The mystery of the missing neutral wires.

The Neutral wire can be shared by all three of the phases as it simply provides a return path for the current, but you would expect the shared Neutral to be much heavier than the Phase wires because it has to carry the return current for all three phases. This is where the phase differences between the Actives really matters. Take a look at the diagram, pick any point in the rotation of the alternator and add together the voltages of all three Actives (taking careful note of positives and negatives). You will find that the sum is always zero. "Big deal !" I hear you mumble. "So what !"

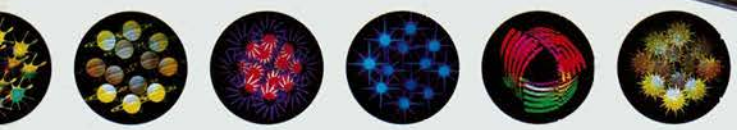
OK, this is it, the three phase pay off: If you have equal loads on all three phases, the current in the Neutral wire is zero. As one phase is sending current in the positive direction through the Neutral, it is being cancelled by current travelling in the negative direction from the other two phases and vice versa. The highest neutral current occurs when only one phase is carrying current; as soon as current is used on either of the other phases, the neutral current will actually fall. This is why the Neutral is only the same size as the Active wires and one of the economic reasons why three phase is used to supply most heavy duty power needs. Devices which place an equal load on each phase, such as the three phase motors used in chain-climbing winches, don't even have a Neutral wire, as the phase currents balance each other.

The mystery of the extra voltage.

Three phase is often referred to as 415 or 440 volt power yet the voltage is only 240 or 250 between the Active and the Neutral. The higher voltage is measured between any two Active or Phase wires and is due to phase difference between the voltages. If you look at the diagram again and go to the 90 degree point you will see that while the Red Phase is at its highest positive value the White Phase is at about half its lowest negative value which is a total potential difference of around 500 volts. Don't forget that this is AC we are talking in Volts RMS** and that this is a peak not an average voltage. In a 240 volt system the Phase to Phase voltage is 415 while in a 250 volt system it's 440, the relationship is: Phase to Phase voltage is the Phase to Neutral voltage multiplied

continued on page 82





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With Stage Scan there's no need to hang around for the bulb to cool before switching on again: the built-in **hot-restrike igniter** means that the luminaire is always ready for action. You won't even be left in the dark after momentary power failures, so there's no need to keep your fingers crossed during thunderstorms! And when the shutter is closed, you can either power down the luminaire direct from the desk or select automatic power-down.

Stage Scan's innovative **MSZ (Multi Step Zoom)** system provides apertures from 13 to 25 degrees by selecting the most suitable of the fixture's 6 lenses - directly from the lighting desk. You'll also have fingertip control







of any colour you can imagine, thanks to the **RGB colour mixing** system and to the special frost filters including the **exclusive Clay Paky "flou effect"**. Want to repeat a particular graphic effect on several luminaires?



No problem - Stage Scan features a **rotating prism indexing** system in addition to gobo wheel indexing.

Then there's the **independent access to the effects section** that allows you to change gobos, etc. even when the lamp is on, without burning



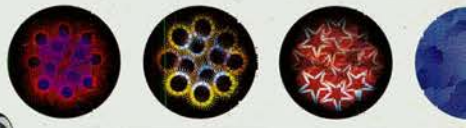












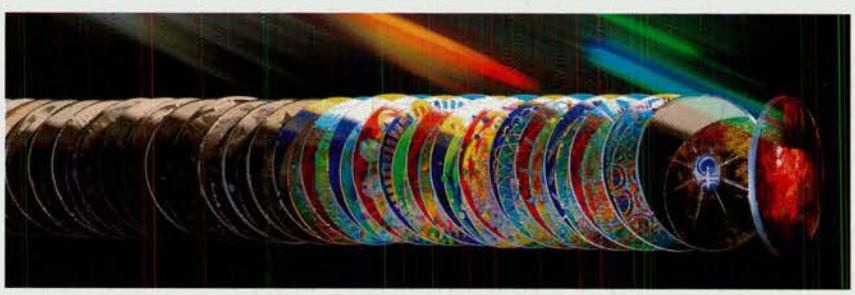




THE STAGE

your fingers or getting dazzled. That's just one of the details that make Stage Scan particularly suitable for professional applications.
Further examples include: **easy access to the electronics**, mounted on the inside of the conveniently hinged back cover; conventional fuses replaced with the more efficient and safer **circuit breaker**; totally simple **mains voltage/frequency changeover** system, making Stage Scan fully compatible with all world electricity grid standards. Noise? Hush! - every Stage Scan luminaire features a carefully designed **silencing system** that will meet the tacit approval of even the most attentive audience. So if you're into stage lighting, you've probably realised by now that Stage Scan has absolutely top-level credentials - just take a glance down this features checklist:

- HMI 1200 lamp, 110,000 Lumen, for uniform color temperature and extended life;
- Hot-restrike igniter;
- Gobo unit with two separate wheels controlled independently or in combination
- 4 M-size metal gobos - static position and interchangeable;
- 4 interchangeable rotating gobos (indexed positioning), including two dichroic glass gobos;
- 10 additional gobos supplied as standard in a special housing in the body;
- RGB colour mixing with ultra-pure dichroic filters for an infinite range of colours;
- Special effects filters (bi-colour concentric beams, four colour beams, colour temperature conversion and ultra-violet);



Clay Paky offers a wide range of metallic, photographic and dichroic gobos. The fascinating catalogue full of new high-definition images satisfies the creative flights of fancy of even the most demanding lighting designers. Also your black-and-white or multicolour images can be turned into original Clay Paky gobos.

- Prism unit with four rotating prisms (indexed positioning) and one static prism;
- High speed iris;
- 0-100% dimmer with instantaneous blacking out of the light beam;
- 1-7 flash/sec strobe, 70 msec black-out time;





- Three frost filters including the exclusive Clay Paky "flou effect";
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BUYERS GUIDE

TV & STUDIO LIGHTING

FRESNELS

LOWEL-LIGHTING
Miller Professional (02) 9439 6377
Lowel Fren-L 650 Portable 7:1 focusable fresnel light fixture with barndoor flaps and mounting frame to accept scrim, filters, snoot and many Lowel accessories. Accepts 300w, 500w or 650w lamps and incorporates a double-wall convection cooling system, oversized swing-down handle and single-arm yoke design. $790.

DE SISTI
Coemar De Sisti Australia (03) 9467 5666
Leonardo Tungsten Halogen fresnels through 300W, 500W, 650W, 1K, 2K, 5K, 10K, 20K, as well as 2.5K and 5K Dual Filament Units Stainless steel bodies, and including all standard accessories (barndoors, etc.) Piccolo units are also available (compact housings/reduced lens size). Available in Manual or Pole Operated. From $580.
Monet entry range of professional Tungsten Halogen fresnels featuring sheet steel construction, flat steel yoke, and available in 1K and 2K versions. Wide range of accessories to suit all budgets. Particularly suited to production companies and professional applications. From $590.
Rembrandt discharge fresnel units range through 200W, 575W, 1.2K, 2.5K, 4K, 6K, & 12K in both single ended and double ended lamps. Stainless steel bodies, and including all standard accessories (barndoors, etc.) Piccolo units are also available (compact housings/reduced lens size). From $3900.

SELECON
Refer to add in this issue
Compact 6 Pole Op 1000w/1200w 150mm Fresnel c/w T/29 lamp. Pole operated pan, tilt and focus. Standard 1 1/8th spigot. $920.


Selecon Compact 6 Pole Op

SF1200 Pole Op 1000w/1200w 175mm high performance Fresnel c/w T/29 lamp. Pole operated pan, tilt and focus. Standard 1 1/8th spigot. $1080.
Arena 8 Pole Op 2000w/2500w 200mm Fresnel c/w CP/91 2500w lamp. Pole operated pan, tilt and focus. Standard 1 1/8th spigot. $1290.
Arena 10 Pole Op 2000w/2500w 250mm high performance Fresnel c/w CP/91 2500w lamp. Pole operated pan, tilt and focus Standard 1 1/8th spigot. $1400.

COSMOLIGHT
Lightmoves Technologies (02) 9560 0000
CosmoBeam 800 stirrup or gaffer grip, smooth focus, accessory holder, scrim and dichroic glass available, barn doors, kit form or single units. Flight cases. $445.
CosmoBroad comes complete with 4 leaf barn door and gel clips, suitable to illuminate small backgrounds. RYS base. 1000 watt lamp. $440.
CosmoBeam 2000 smooth focus, accessory holder available with dichroic glass, scrim, safety glass, gaffer grip. 2000 watts. $550.

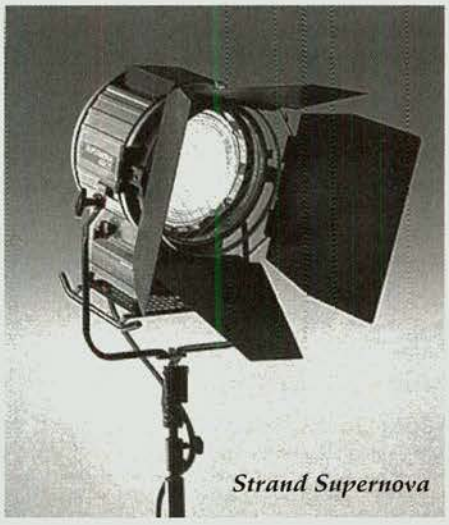
STRAND LIGHTING
Bytecraft Pty. Ltd. (03) 9587 2555, (02) 9550 3955
Supernova range of compact, lightweight fresnels, optimising benefits of SE HMI/MSR lamps. Available as 200W, 1200/2500W or 2500/4000W versions. From $5839.
Bambino range of powerful compact spotlights specifically designed for location and tight situations. Available as 650W, 1000W, 2000W, 5000W versions. From $822.
Polaris Tungsten Halogen compact lantern suitable for key and back
light in smaller studios. Will accept 650W, 1000W or 1200W lamp. High quality optical design. $962.
Castor Popular general purpose keylight and backlight. Manual and pole operated version and dual filament 1.2/2.5kW versions available. From $1476.

ARRI, SUNRAY
John Barry Group (02) 9439 6955
Arri Lighting Range of Junior 300 to 5000w along with the Studio Range from 1K - 24K tungsten. Pole operated options available for some units. From $600 - $25,000.

CCT
Rosco Australia (02) 9906 6262
Freble is a fresnel or pebble depending on which interchangeable lens is used. New 600w GKV lamp is extremely efficient. Weighs 7kg. Accepts Freedom DMX dimmer module. $495.
Minuette 650w compact focussing fresnel used in schools, clubs and display areas for the past 15 years. Reliable and robust with good ventilation for long gel life. $220.

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Strand Supernova

8.5 degrees), safety bracket, locking cup, sprung gel frame. Also features an interchangeable lens and system to convert the unit to a pebble convex lantern. $217.21.

Fresnel Pebble Convex 650W Same housing as 650W fresnel, but is fitted with a polished pebble convex lens which gives tighter focus (down to 6 degrees). $233.61.

SOFTLIGHTS

DE SISTI

Coemar De Sisti Australia (03) 9467 8666

Botticelli Tungsten Halogen range of softlights ranging through 1K, 2K, 1.25K, 1K/2K, 2.5K/5K, and 5K. Standard accessories included, egg-crates also available. All units manufactured in stainless steel and available in Manual or Pole Operated versions. From $890.

Wyeth Compact range of Tungsten Halogen softlights 1K, and 2K. Standard accessories included, egg-crates also available. All units manufactured in stainless steel. From $790.

Raffaello Discharge softlights range through 200W, 400W, 575W, 1.2K, 2.5K, 6K. Standard accessories included, egg-crates also available. All units manufactured in stainless steel and available in Manual or Pole Operated versions. From $4200.

Goya unique range of Discharge Broadlights/ Shadowlights available in Discharge formats from 1.2K to 2.5/4K. Supplied complete with Electronic Ballast (auto-switching for 2.5/4K), barndoors, safety glass, etc. Feature unique "black" reflectors for hard shadows. From $8900.

LOWEL-LIGHTING

Miller Professional (02) 9439 6377

Lowel Rifa-Lite Collapsible soft light with in-built lamp housing, weighs less than 2kg and sets up in seconds. Designed for location shooting with a removable, heat resistant front diffuser that folds, lamp in place, when not in use. $850 (500W)/$1250 (1000W).

STRAND LIGHTING

Bytecraft Pty. Ltd. (03) 9587 2555, (02) 9550 3955

Arturo 1250W Designed for the small studio or location fill, provides virtually shadowless diffused illumination. $911.

Arturo 2500W This Arturo is a 2.5kW dual power softlight with two lamps, switched individually to give intensity control with constant colour temperature. $1369.

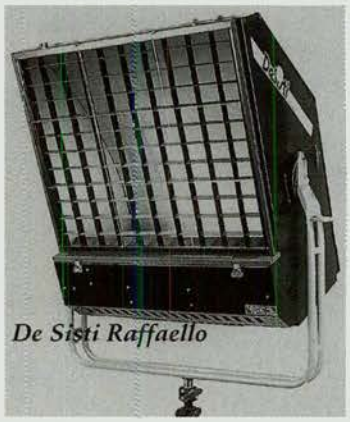
Arturo 5000W Dual power softlight with 4 lamps, switched in pairs. Power switching reduces intensity without changing colour temperature. $2247

Videolux Range of compact low energy fluorescent softlights. High output, built-in high frequency electronic ballast increases output and eliminate flicker. Dimmable. From $1663.

ARRI, SUNRAY

John Barry Group (02) 9439 6955

Arri Softlight Range featuring 1.25/2.5K or 2.5/ 5K. In either manual or pole operation. From $1800 - 3200.


De Sisti Raffaello

PARS

DE SISTI

Coemar De Sisti Australia (03) 9467 8666

Remington Complete range of Single-ended and Par fixtures. Wattages range through 200W, 575W, 1.2K, 2.5/4K (Auto-select ballast), 6K. Piccolo units also available (compact housings/reduced lens size). All units in stainless steel and include all standard accessories (barndoors, etc.). All supplied as systems (complete with ballasts) or available as separate head. From $9000.

STRAND LIGHTING

Bytecraft Pty Ltd. (03) 9587 2555 (02) 9550 3955

SuperQuasar 25/12 High intensity location par light uses 1200W or 2500W SE HMI or MSR lamp in parabolic reflector. Dual wattage ballasts available. $6988

SuperQuasar 40/25 Powerful location par light for exterior locatio lighting. Uses 2500W or 4000W SE HMI or MSR lamp. Quick release socket allows easy lamp change. $9296.

K5600Inc.

Miller Professional (02) 9439 6377

Joker 200 portable PAR HMI High output daylight PAR HMI for portable use. Available with a complete range of accessories including electronic ballast, barn doors, fresnel, wide lenses and inverter. (*Kit includes two lamp heads, ballast, lamps, power cables, barndoors, 4 x focussing lenses.) $3150 (Lamp head)/$8150 (Joker 200 Kit*).

Joker 400 portable PAR HMI High output day-

continued on page 92

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FRONTIER LIGHTING

a profile by Geoff Squires

For those in Brisbane who don't get out much anymore, there is a new lighting company on the scene called Frontier Lighting. Although theoretically still setting up, the doors are open and General Manager, Jared Hawke, invited me around for a look-see at what he and principal owner Scott Armstrong have done.

From the beginning, the idea has been to cater for the corporate sales side of the industry and the result is an environment that reflects that image. Using money earned from nightclubs and other businesses, a custom built workspace has been created.



Housed in a new warehouse estate, the building has under gone major renovations to convert it from an empty concrete shell, to a rather opulent house of lighting. Using almost three hundred sheets of plaster, a power supply of 900 amps per leg three phase, and a few other things, a rather nice headquarters has been achieved. Entry to the building is through a large foyer which allows access to either the sales and management areas upstairs or to the very decadent showroom.

Having visited many showrooms Australia wide, Jared claims it to be the biggest, and might I say it is fairly impressive. Featuring a small stage and large tri-truss rig that uses Color-Pro's as warmers has been designed to show products to its maximum. Built from scratch it includes a projection wall that was sanded nine times and completed with five coats of paint to provide a flat surface.

Fitted out with a JBL sound system and 48 metres of fibre optic, the showroom demonstrates a large range of the stock that Frontier plans to carry. A small Pink Floyd circular truss with eight Trackspots dominates the rear of the stage and in the roof hangs Intellabeams, Cyberlights, and Studio Colors. A light box will eventually carry the entire range of High End Litho patterns.

Jared explains that he would rather carry one or two good brands and back them up with great service than carry thousands and not be able to support them. "We didn't want to become a supermarket." Products carried include ALE Truss, Manfrotto, and Wildfire.

High End is one brand that Jared will be pushing a lot because he feels it is a good product. To top of the deal, Frontier has just been made the sole High End dealer in Brisbane, something Jared said was a result of his commitment to the products. A three day visit to the High End Factory (which was so large he had to travel by golf cart) backs up this commitment.



Jared is also particularly proud of the three Status Q desks that the company owns. Two of them are Pentium based (the first in Australia), one of which drives the showroom Jands HP and GP dimmers and intelligent lighting. Frontier's aim is to never sell the stock in the show room, it is there to demo only, and from that end a LARGE amount of product is kept out the back to satisfy the client who wants it now. Jared said it is something no-one else in Brisbane does.

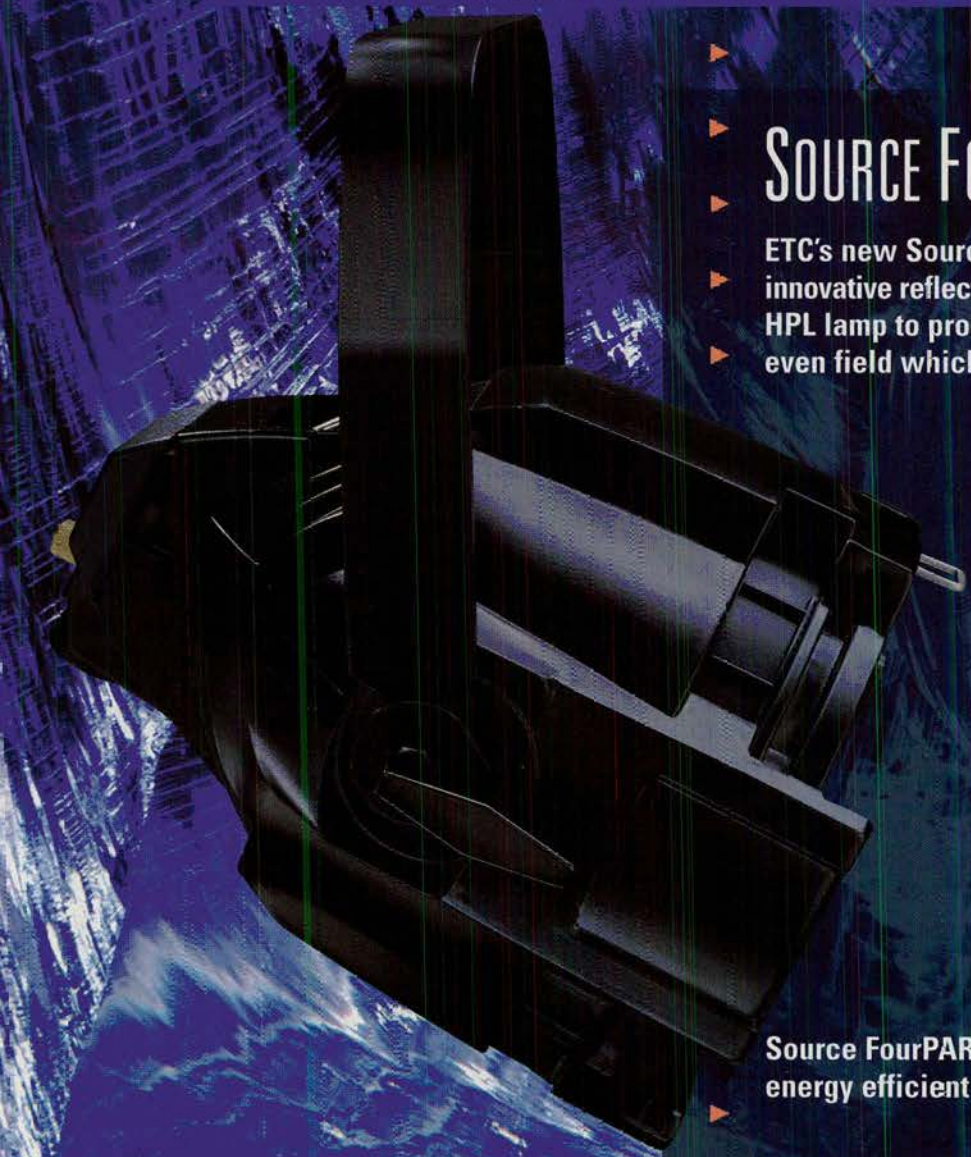
Nestled out the back is the Hire Department, although small, it is still growing. 120 Chrome cans and some Jands HP dimmers are due to arrive soon, and Jared was looking at CM 1/4 tonne chain motors at LDI. Created more as a backup to Sales, Hire will eventually move in to its own right. More Jands HP dimmers will arrive when the production rack series is released soon. A 5w laser and up to 32 Studio Colors are on the cards as well.

Not creating waves has been a big concern to Jared, all of the figures quoted to me were off the record. "We don't want to upset anyone, I consider myself to be a Queenslander now and I'm hoping for a fresh start here. I think Frontier will be good for Queensland." Well as they have a 10 year lease on the building with option to buy, they certainly intend to be here a long time. As a ways, time will tell.

★ *Geoff Squires*

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Write in Reader Service Number 119

Three Phase Mysteries revealed

continued from page 75

by the square root of three (1732). Therefore in Europe which is generally 220 volts, the Phase to Phase voltage is 380.

It's the phase to phase voltage which makes three phase power so potentially hazardous and which requires us to be so very careful with its use. To get a phase to phase shock is a relatively difficult task as it requires you to touch two live objects on different phases simultaneously, particularly as touching one live object will often throw you clear of the source. The inside of power distribution boards and three phase dimmer racks however, are amongst the few places that such a shock is possible.

The mystery of the smoking dimmer rack and amp stack

There is of course another way to get phase to phase voltage and that is to connect up a three phase system without a Neutral wire. This simple trick can be used with any power distribution system where you desire to destroy your dimmers, amps, luminaires, effects racks etc, and can be implemented in several ways.

You can plug your system into a three phase socket designed for use with balanced loads and which therefore doesn't have a Neutral connection. You may have heard of the television LD who once did this in a bakery and cooked the entire OB lighting rig. Fortunately, today most balanced-load three phase sockets don't have a Neutral pin which means you can't plug in to them with a standard 5 pin plug.

A more common way to achieve phase to phase voltage through your equipment is to have an unreliable Neutral connection somewhere in your power supply which will give way shortly after you have plugged up your system and thereby reduce it to gently smoking ruins. Another very popular technique is to wire up a three phase socket so that the Neutral and one of the Phases are switched around. This will only give phase to phase voltage across two-thirds of your system and will not produce as much of that very impressive blue smoke.

Finally, some very un-mysterious precautions. If you aren't absolutely certain of the quality of any part of a three phase system, get it checked out by an electrician with a good three phase background. If you have a multimeter which is insulated to 600 volts or more (some cheap meters are only safe to 400 volts), carefully check for the following voltages. Any phase to neutral 240/250 volts. Any phase to earth 240/250 volts. Any phase to any other phase 415/440 volts. Neutral to earth 0 volts. If you find any other voltages, do not use the socket until it has been checked by a suitably qualified professional.

**trade term for electrical tradespersons.*
***RMS (root mean square) is the type of average or effective value used in AC measurements.*

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LXbizzBITS

NEWS

FROM ULA

Anything Audio have installed 8 x JB Varyscan 3 Special Plus, 8 x JB Varyscan 3 Special, 1 x NSI MLC 16 Moving light console (with disk drive) and 8 x Infinity Par 56's into the Hornsby RSL auditorium.

Mick James Electronics have installed the following Abstract products into the Sante Fe night club on the Gold Coast: 2 x Abstract Gladiators; 3 x Abstract Futurescan 3 CE and 1 x Abstract 64 ch LCD controller.

Disco Supplies have added 2 x Abstract Colour changers, 2 x JB Varycolour 2000 Colour changers and 1 Light Processor Q-24 DMX lighting console to their hire stock.

LXbizzBITS

PRODUCTS

CHROMA-Q

Now available in Australia is the Chroma-Q colour changer which utilises digital circuitry with the DMX connectors optoisolated to eliminate control problems. Each unit is separately DMX addressable to ease set up and if the units temporarily lose power during a show, they will remember where they are without going through a calibration sequence, when power is restored. For servicing, the unit can be stripped in under a minute with the removal of four screws. The Chroma-Q is capable of scrolling gel strings of various lengths from end to end in 3 seconds - 16 frames. The price of the Chroma-Q is $508.51 approximately. An 8-Way Power Supply including splitter box for up to 8 Chroma-Q Colour Changers to be connected in one chain will cost $1,010.64 approx. An 18-Way Power Supply including splitter box for up to 18 Chroma-Q Colour Changers to be connected in one chain will cost $1,542.55 approx.



READER SERVICE NO 406

PHASOR

The Light Emotion Laser Pointer, known as the Phasor, comes with 3 long life batteries and is guaranteed to give over 200 metres in range. The Phasor is half the size of most of the common party lasers currently on the market (6 cm), fitting in your pocket or attaching to your keyring. So fork up $59 and liven up any party, nightclub or rave.

READER SERVICE NO 407

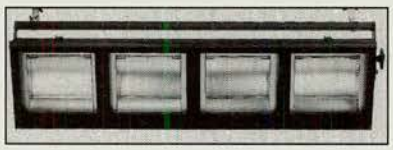
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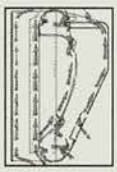
The Selecon Morning Herald

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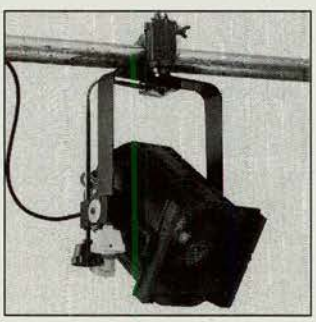
The new Aurora range of 1000-1250w Cyc's and floods. An innovative new range for the larger stage, studio and display. A powerful controlled beam which thanks to our unique dual chamber design effectively removes heat, protecting the filter.



POLE OPERATED LUMINAIRES

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The fresnel ranges in these wattages can also be fitted with focus mechanisms.



This complements the Acclaim and Aurora cyc, grouncrow and floodlights to meet the needs of small to medium studio's and hard to access lighting positions.

THE THEATRE SCROLLER GETS BETTER

New 8" Pro33 scroller from Rainbow.



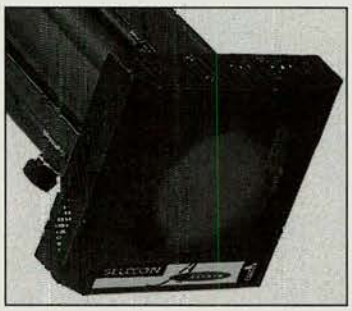
Main features

- Will work with 2 to 33 colours
- Extremly fast and slow scrolling 33 Frames in 3.6 seconds to one frame in 20 minutes
- Motorised gel load
- Frame by frame or real time DMX
- Auto range set, no more pot adjustments
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An affordable colour scroller for the Acclaim range and other 4" luminaires. A choice of 11 colours at your fingertips

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SELECON

Royal Shakespeare Company

A Midsummer's Night Dream



The crew for the Royal Shakespeare Company's world tour of "A Midsummers night dream" are a friendly and versatile lot. The sound operator assists with the rigging of the flying winches, the deputy administrator is also the production manager and uncredited hydraulics fixer and the lighting designer doubles as the systems engineer who sets up the hydraulics and flying system AND the properties master operates the hydraulics during performances. This is a tight technical crew who are more than happy to cross the lines into other departments.

Michael Gunning, the tour lighting designer, chief electrician and systems engineer says, "We work wherever is necessary, the schedule is very tight and fortunately most of us have toured together before which makes it easier". For each new venue they have twenty four hours before opening night with just enough time to do one tech run of the show. "The run through is mainly for the local crew to experience how it all happens, the rest of us have been touring the show since November." So far they have toured the UK and performed in Japan and Hong Kong and will spend until the end of May touring Australia and New Zealand.



They are leapfrogging two and a half complete sets on tour, with the second one currently en route to New Zealand from Hong Kong. The main set pieces are a wrap-around cyclorama, a raked stage floor, a back wall, seven bars of huge yellow bulbs, two hydraulically operated doors and a power winch system for flying people and their huge pink umbrella.

Since all the RSC tours originate out of the repertory seasons they perform in England, the brief for both lighting and staging has nothing to do with touring but has to be able to service several shows at once. Caro MacKay who is both production manager and deputy administrator for this tour explained:

"When our workshops are building the sets, they're building them for rep and they have to be able to change over in an hour and a quarter. In Stratford, our home base, we have to be able to perform a different show at the matinee to the evening. In our main house we can be performing four shows in rep so that people can have the opportunity to see all four shows over two days. So often the sets are on huge trucks that get wheeled on, tacked to-

continued on page 86

LXbizzBITS

PRODUCTS

THE LOBSTER
Following the success of their Crab, Botex have launched the Lobster Mini Graphic. Brighter than the Crab, the Lobster has 48 preset built-in patterns and has an unlimited amount of patterns under manual control. All functions can be controlled by an infra red remote controller and an additional infra red receiving connector can be used. Auto. Remote/Music functions can be selected, and the unit can be linked up to 10 other units.
READER SERVICE NO 408

CONSTELLA DMX DEVICE
Constella have released a new handheld DMX controller dedicated for the mobile DJ and small club market. It can control the new range of intelligent lighting effects from Constella and provides an instant lightshow selected from it's 8 factory set programs. It also features a facility key in the BPM of a track and have the units activate precisely to that tempo. Price is $459 inc tax.
READER SERVICE NO 409

VIVID FX
Now available from Rosco Australia is the Vivid FX range of fluorescent paints which has a palette of 13 vibrant colours. Vibrant under ordinary light and spectacular under a 'black light' source, Vivid FX paints are pure and clean enough to be intermixed for immediate fluorescent colours and can be mixed with other Rosco paints to match Pantone colours. Available in 0.473cl and 0.946cl cans and in a starter kit comprising a 30cl sample of each of the 13 water-based colours.
READER SERVICE NO 410

THE FORERUNNER
Wybron Inc. have released a new 16-frame colour changer called The Forerunner which comes in seven and four inch units and has a separate 16-head power supply. Other features include: daisy chaining without power loss; compatible with competitor systems; autoload gelstring loading; individual DMX addressing; and durable sheet metal construction.
For more information contact Wybron 0011 1 719 548 9774.

What do you use yours for?



Masterpiece

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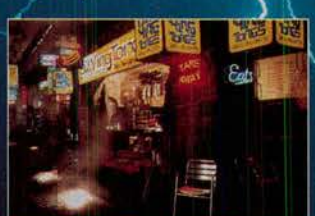
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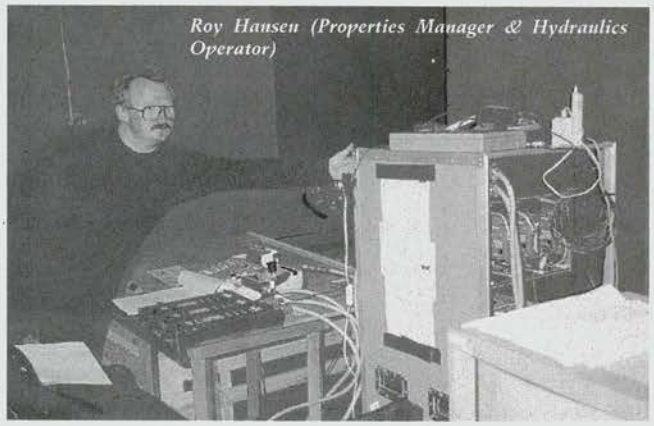
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A Midsummer's Night Dream

continued from page 84

gether and off you go. For touring we usually have to do a major re-think."

This year RSC are increasing their touring schedule and for the first time ever main house shows are going to be designed for both repertory and touring. MacKay believes that this will be good for the construction crews because it will teach them new ways of working; "Obviously one of the big things will be keeping the weight out of the set which up until now has not been a major consideration."



Roy Hansen (Properties Manager & Hydraulics Operator)

A major feature of the set for "Dream" is the back wall which has four practical doors in it. It was originally put together on stage and then raised on chain hoists, but for touring it would have taken over the whole stage for two hours while it was being built, denying stage access to any other department. The touring version is now in three sections with the doors butted up to it and a fibre optic cloth stretched over the frame.

Though RSC is touring two complete sets there is only one flying system and one hydraulic system which are air freighted around with the company. The motors for flying, which are state of the art, are made by *Stage Technologies* and are a new acquisition for the company.

There are four half tonne motors, three standard for flying people and one larger motor for the umbrella pulley system, with an electric screw ram which pulls the cables apart and allows the back cable to travel more slowly than the front cables so the umbrella tilts forward as it flies in with the fairy queen on board. They are controlled by an optimiser and micro processor and run by an MS DOS program.

During one Perth performance the computer had a little hiccup and decided to keep suspended in the grid, the four performers who were awaiting their cue to descend. The house curtain was lowered and the performers rescued.

The grid for "Dream" is a fairly busy place and to add to this there are seven bars of large amber light globes tied onto the bars so they hang at different heights. They created a wonderful ambience for the fairy kingdom and were worthy of a collective audience gasp when they first appeared. They are randomly plugged into transformers on each bar and controlled by nine channels split into upstage and downstage. Each globe has a 12volt, 21watt car bumper bulb inside.

For Michael Gunning there is plenty to keep him busy. There are two touring electricians who are responsible for getting the onstage lighting rig working while he concentrates on the flying and hydraulic systems; then he focuses and plots.

"I set up the hydraulics and the flying system, though the hydraulics are actually run in by somebody else but I make sure the accumulators are charged and the power packs and motors are all running properly. I also make sure the trusses are rigged and cabled properly, the electronic crates are plugged up and if necessary re-program any deads into the flying system if, for example, we get a particularly low grid and have to have a lower 'bottom' dead than usual."



Caro Mackay (Deputy Administrator for Touring), and Michael Gunning (Chief Electrician & Systems Engineer) with Michael's son Samuel - youngest tour member.

Gunning is responsible for redesigning the lighting for touring. The original rig is designed, like the set, to work around the repertory system. "We have a huge capacity in the Barbican and Stratford theatres, with a large proportion of the rig allocated to basic coverage. This is the fixed focus aspect of the rig. Then we supplement that with specials for individual shows. We use about 350 chan-

continued on page 91

LXbizzBITS

NEWS

SELECON NEWS

East Coast Lighting report the sale of more Compact 1200w fresnels and Acclaim zooms to the Caloundra Civic Centre. **Chameleon**'s lighting package for Cam Mac's Phantom Bus & Truck tour includes 30 new digital Rainbow Pro33 8" scrollers. **Osmond Electronics** have installed Selecon 650w and 1200w Zooms as well as new Aurora 1250w cyc lights into Adelaide's Faith Baptist Centre. The Gold Coast Arts Centre has the largest installation of the new Aurora 1250w cyc lights - 16 x 4 way linear units. WA's newest Arts Centre, Mandurah Arts Centre, has a full range of Selecon equipment supplied by Perth's **Ashton Admor** including Acclaim and SF1200 7" fresnels and PC's, 650w and 1200w Zoomspots and Condensors and 30 Rainbow Pro33 scrollers.

FRONTIER EXPANDS

Brisbane's Frontier Lightings Hire Department has just taken delivery of three High End Nebula hazer systems and are also adding more ALE truss to the department.

animated GOBOS

Make those gobos move - Rain can fall, flames flicker, water will ripple and clouds will flutter.

Rosco dealers have motor units and animation discs to suit all popular fixtures to give life to your gobo. Put a Rosco animation unit and disc on your Fresnel or Pebble Convex and produce moving, swirling shafts of coloured light. It's easy and you don't need a gobo for a great effect

The gobo rotator will spin a gobo on it's axis or the double rotator will spin two gobos in the same or opposite directions at different speeds with the DMX or DC controller. Different effects and very easy to achieve.

A free gobo catalogue is available from Rosco stockists

Write in Reader Service Number: 133

American DJ arrives in Australia

Following its success in America, American DJ Inc, one of the largest and best known lighting and audio companies in the U.S.A. has expanded it's overseas operations to include Australia.

American DJ Inc has appointed Rick Chisholm, the man who originally set up the ELSTA group with the task of making American DJ Supply Pty Ltd Australia as successful in Australia as it is abroad. American DJ will be officially launched on stand F-18B at this year's ENTECH trade show. American DJ Inc will be run as an autonomous company in its own right - American DJ Supply Pty Ltd Australia.



American DJ's product range, containing just the one brand, consists of beacons, black lights, bubble machines, chase controllers, dimming systems, fog machines, helicopters, intelligent lighting, lasers, light stands, mirror balls, mixers, pinspots, rope light, snow machines, speakers, strobe lights, theatrical lighting, touch panels and a wide range of accessories. In addition, they have recently expanded their audio range, offering, amongst other products, a range of new mixers and other related products.

"American DJ sells an 'entire concept and image' which focuses on providing quality products, competitive pricing, and a high standard of customer service and dealer support," said Rick Chisholm. "They only sell ONE brand. Nothing else compares to the outstanding product range of American DJ."

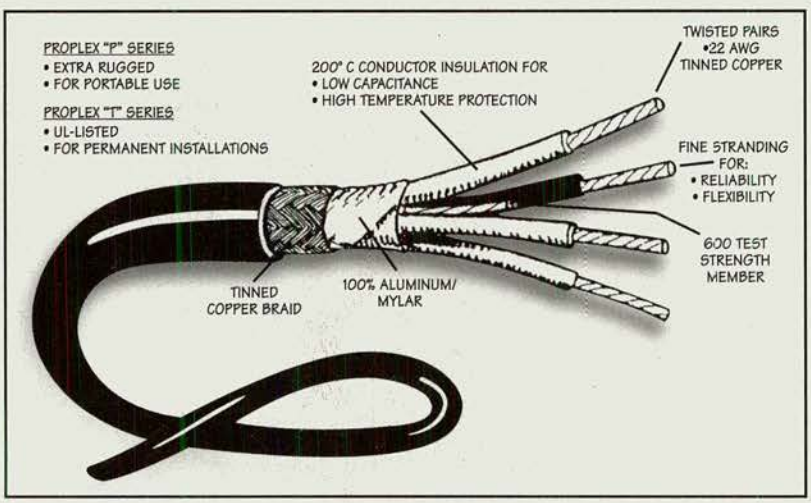
A marketing and promotional campaign will be launched nationally and internationally to coincide with the release of the American DJ product range in Australia and will consist of marketing materials and Point-of-Sale goods. These goods include caps, denim and leather jackets, t-shirts, pens, posters, candy, slip mats and videos, and a 54 page full colour catalogue which will feature every American DJ product on offer in Australia.

Rick Chisholm is proud of the latest addition to his growing group of successful companies and says that "once American DJ is established here, you can be sure that the Australian operation will be just as aggressive as the group in America". Mr Chisholm points out that "American DJ is number one in the States and it is only a matter of time before American DJ Australia is number one here too."



Interested in becoming an authorised American DJ dealer? Want more information on American DJ products? Phone Rick Chisholm on 1800 643 111 or fax 1800 643 411

ProPlex™ DATA CABLES



ProPlex Control Cables are made to withstand years of pulling, twisting and hard-knocks. They coil and handle well in all conditions. They have superior transmission and noise-rejection characteristics. They are available in single or two pair configurations with black polyurethane jackets, ideal for DMX512 applications. A hi-spec Scroller cable with power and shielded data conductors is also available.

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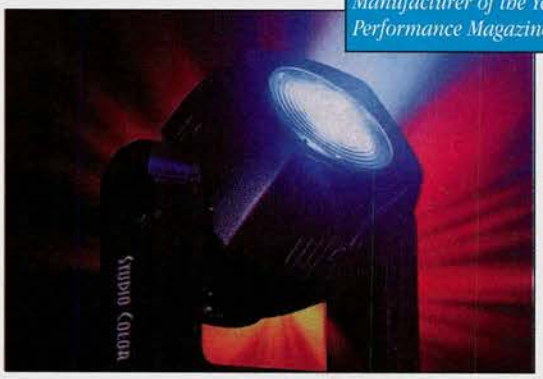
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Compelling New Tools for color tex

High End Systems:
WINNER, *"Equipment Manufacturer of the Year '96." Performance Magazine*



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The STUDIO COLOR™ automated wash luminaire...

Colour, motion, and beam shape come under total control in a powerful and practical new fixture.

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The CYBERLIGHT® automated luminaire is the world's most sophisticated, versatile pattern and effects fixture, combining unprecedented light power with stunning optical capabilities.

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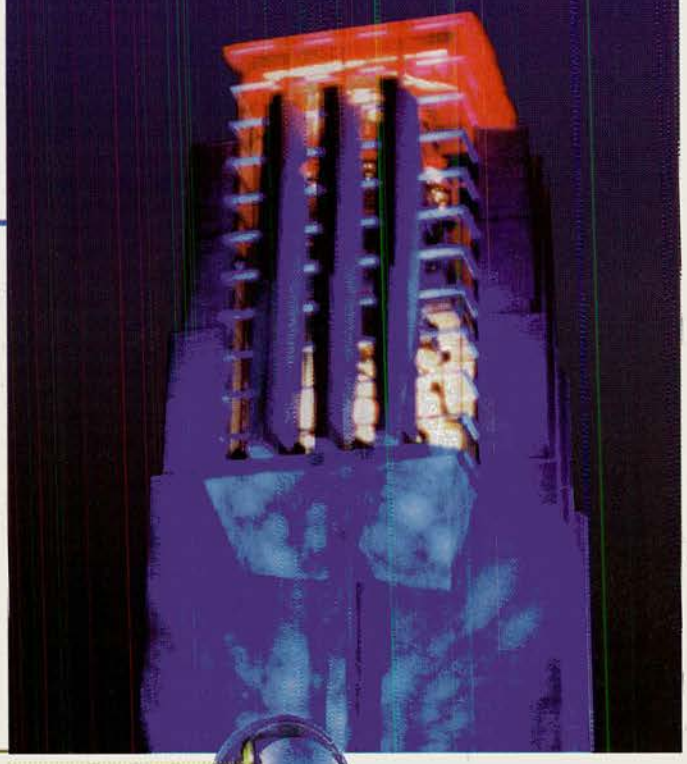


Studio Color and Ecodome offer the ArchiTEXTURAL designer total control over form, colour, texture and movement.



Write in Reader Service Number: 111

Archi·Textural Lighting



STUDIO COLOR™

automated wash luminaire

WINNER, "Entertainment Lighting Product '96," Lighting Dimensions International 1996

WINNER, "Product Innovation," Professional Lighting & Sound Association 1996

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ecodome

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High End SYSTEMS

THE HOT NEW PRODUCTS AT ENTECH

continued from page 70

fects" effects budget light range for the DJ rental markets.

Selecon *Stand P19*
Feature Products: Rainbows 4" and 8" scrollers; Aurora 1000/1250W cyc and floodlights; 50W to 2500W Fresnel, PC, Zoom and Condensor profile spots; Astral MR16, tungsten, metalhalide and PL Display range; Followspot range.

Show Structures *Stand S16*
Constella's NEW Handheld DMX Controller ideal for mobile DJs offering instant stunning lightshows with no programming. A selection of powerful stand-alone disco effects including NEW Chameleon 2 will also be exhibited.

Show Technology Australia *Stand U1*
Show Technology represents Martin, Pulsar, Jem, Kupo, Geni, ADJ, Studio Due, Elektralite and MEC Truss. Show Technology's sister company Show Lighting Australia represents Clay Paky. From Clay Paky there will be the new Miniscan RG, Stagescan, VIP Display Range and Combicolour 575. From Martin there will be the first Australian showing of the new MAC600, Lighting Director and Punisher as well as the recently released Imagescan, Robocolour 3, Destroyer, Lynx and MAC1200. From JEM there will be the major release of the HOT Technology machines while from GENI there will be the Australian launch of their intelligent projector range which is running worldwide acclaim together with the Ultima display projector with accessories.

MAC 600



Showcraft *Stand P5*
New at ENTECH 97: The Gam Command II with an LED display features a smart DMX reading capability.

Stage Technologies *Stand L1*
The PLASA award winning "Acrobat" and "Juggler 3D" control consoles with full graphical interface, the "Explorer" radio controlled truck system and a range of mechanical winches and revolve drives.

Sylvania Lighting *Stand D1*
PAR lamps - 36, 56, 64; BriteArc Single Ended (MSR Equivalent); BriteArc Double Ended (HMI Equivalent); Halogen Single Ended; Halogen Double Ended; Halogen Burners/Reflectors; many more lamps.

TECHSCAPE *Stand A8*
Created from GUVT's Special Effect Lighting Division, TECHSCAPE is a distributor for High End Systems, Anytronics, Mad Lighting, Wildfire and Citronic - among others. New to ENTECH 97 include: Lightwave Research's Ecodome, the architectural housing for Studio Color, Nebula 1200 Diffusion Hazer and Status Cue Version 3; Mad Lighting's new plastic-cased range of effect lighting fixtures; Anytronics Universal mounting DS410 Dimmer and 193 Series Dimmers.

Three Arts Services Pty Ltd *Stand P19*
Three Arts Services will show Selecon theatre studio and architectural lanterns, including the new 1250 watt Aurora ground row, pole-operated Cyc Lights, 2.5 K high performance fresnel and follow spots. New lamps for Altman Shakespeare and Source Four lanterns will be shown and major lamp and gel manufacturers represented. JKL Productions will show Motion Development Industries submersible and 20 light MD16 based colour scrollers, drop zone automated display apparatus plus Australian Suntrak curtain track.

TOMCAT U.S.A *Stand W10*
New/Special Feature Products: The TOMCAT 12 metre by 12 metre roof system; the 18 metre by 12 metre roof (featuring optional 6 metre PA wings); the new 25 metre by 18 metre roof system, also featuring optional PA wings. The largest roof system design offers a clear span of 38 metres.

Total Fabrications *Stand R13*
Total Fabrications' range of industry compatible trussing, world patented fold flat truss, ground support systems, outdoor roof systems and custom constructions on show for the first time.

Universal Lighting & Audio *Stand A13*
Brands distributed by ULA include Abstract UK Moving & effect lights, Le Maitre smoke machines and pyrotechnics, JB Lighting Germany moving lights and colour changers, NSI Corp. USA lighting control desks and dimmers, and their own brand of Infinity and Litecraft.

LXbizzBITS

NEWS

A.C.LIGHTING REPRESENTATIVE

Alex Cross has been appointed to represent A.C.Lighting in the Australian market and he will be at Entech with a full range of products. Products that A.C.Lighting distribute include: **WYSIWYG** lighting visualisation software; **Chroma-Q** 16 frame colour changers; **Vision Light Enhancer** portable light enhancing haze machines; and **Procolor** lighting filters.
For further information contact Alex Cross on (02) 9369 2826 or 0414 46 1968.

LSC UPDATE

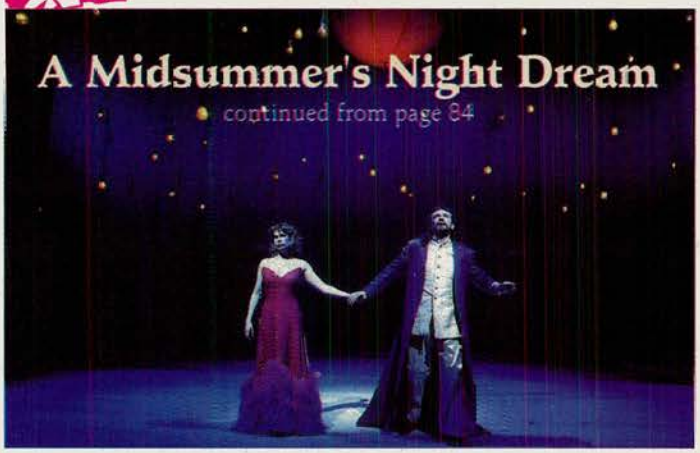
The **Phoenix Theatre** at Deakin University Vic has undergone a complete re-fit of stage lighting and dimmer systems and are now utilising 4 Wallpak dimmer units and Flexipatch circuits. Lightmoves Melbourne have ordered an Axiom 48 for the **Camberwell Civic Centre** refurbishment as well as 51 DMX Isoports for the **Melbourne Casino.** Lightmoves Sydney have ordered a large range of coloured Uni-Par thermo-plastic par cans for **Segaworld. QPAC** has ordered Isoports, Datasplitters and Proplex cable as part of their recent upgrade specifications.

GREEN ROOM AWARDS

Jamieson Lewis, Resident Lighting Designer for the Melbourne Theatre Company, was recently bestowed an Outstanding Technical Achievement Award by the Green Room Awards Association. Jamieson, who has worked on more than 500 Melbourne Theatre Company productions ,will be a guest speaker at the **Meet The LD's** seminar at Entech.
Ben Cobham won awards for his lighting design work on *The Black Sequin Dress* and *Descansos*.

LIGHTING THE RED CENTRE

Darwins' Integrated Media are in the final commissioning stages of *The Desert Park* in Alice Springs. With lighting design by Geoff Cobham and technical integration including projection by IM's Rod Louey Gung, this complex interactive indoor flora and fauna array draws on both display and theatrical technology. A wide range of equipment has been supplied including Selecon Accent profiles and spots, discharge 150w Astral profiles and fresnels, 1200w Condensors, Rainbow's new Pro33 scrollers, Trackspots and new Astral display wall wash luminaires.



nels but for touring I have to get that done to about 170. The rig obviously changes because of this."

Chris Farry is the original LD for the show but the redesigning is mainly left up to Gunning. "As soon as I take it over it's up to me to decide what to do as long as I don't take liberties, Chris gets the glory and I do the work, but I don't mind," he laughs. Gunning is responsible for all the documentation, lighting budgeting and liaising with the various venues. During performances he acts in a trouble shooting capacity while the two touring electricians operate the front-of-house follow spots.

Gunning is touring the generic onstage rig which is supplied by *Chameleon* in Sydney and using the in-house front of house rigs to provide warm, cool and decal washes. Touring the onstage rig saves a lot of rigging time since much of the equipment is pre-rigged on bars which are then slung straight onto the bars in each venue. He has brought 20 Rainbow scrollers with him and the two onstage follow-spots which are Reich & Vogel 500watt beamlights. He also tours the rock n roll chairs rigging and safety gear for the operators. I have it on good authority from Erryn Hanson, one of the local Perth operators that they are wonderfully comfortable chairs!

The on-stage follow spots are a crucial part of the lighting design, "the humans are always lit from the front and the fairies from the on-stage spots which are in a high side position, so that they are technically invisible when they are onstage with humans."

According to Gunning the lighting is not about "spectacular pyrotechnics but about creating a series of atmospheres for the different scenes There are subtle design concepts in there that will probably be missed by a lot of people, but hopefully if you have enough of them it will be an accepted style." An oil cracker assists in the creation of mood.

When Gunning is not touring he is the deputy crew chief at the Barbican theatre, RSC's London base, but he is the first choice for the touring electrician role according to Caro MacKay. "Two other electricians are currently being trained for this role but until they're ready Michael is the obvious choice. As a company we work very much from our in-house staff who may not therefore have much touring experience when they begin, but they're ours and they know what we want to achieve as we train them up and they begin to look at things in a touring manner."

As expected, with the international reputation the Royal Shakespeare Company has, I met a touring crew with high standards and a professional attitude. I was pleasantly surprised by their friendliness and their obvious sense of camaraderie. It really did appear to be a case of all hands on deck wherever needed and multi-skilling was the norm. As Caro MacKay explained, "Roy, (properties master), Mike and I look after the hydraulics. Roy and I are the only ones and Mike takes care of the electrical bits." You won't find that listed in the program credits!

★ *Jacqueline Molloy*

DNA
Distributed Network Advantage

The Link to Providing a Healthy System

Designing practical and versatile DMX512 networks is now made easy with the components of LSC's new **DNA** range.



Venues such as the **Sydney Opera House, Victorian and Queensland Performing Arts Centres** and the **Crown Casino** have chosen the **DNA** system. Contact LSC to find out why the "Advantage" will work for you.



ISOPORTS - a system of isolated DMX512 wall mount inlet and outlet boxes providing up to a maximum of 1536 channels. Available in 3 models, the ISOPORT provide venues total integrity of their distributed DMX512 system.





ISONODE - an intelligent wall mount DMX512 inlet that can detect activity on its DMX512 input and automatically switch the downstream DMX512 to its input and isolate the upstream data.



ISOPOWER - a 19" rack mount power source for the **ISOPORT** and **ISONODE** network modules. Providing three isolated and buffered DMX512 inputs and outputs with a 24VDC output, the ISOPOWER is short circuit proof and can be linked to another ISOPOWER to provide full redundancy.



DMXchange allows the crosspatching of a large number of DMX512 outputs to a smaller number of DMX512 inputs. Master unit has integral LCD and function buttons to setup crosspatch and electronically label each input and output. Additional slave units each provicing an additional 6 inputs and 12 outputs can be connected to the Master providing up to a maximum of 24 inputs and 48 outputs.



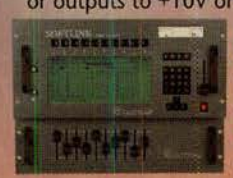
DMiX - a DMX512 merge unit providing 2 inputs to 1 output. Fully isolated and buffered, the DMiX allows the second inputs DMX start address to be offset against the first.



Multisplit - a splitter/amplifier giving maximum isolation of a single DMX512 input to a choice of 5, 10, 15 or 20 DMX512 outputs.



Linklight - a 19" rack mount bidirectional multiplexer converting DMX512 inputs or outputs to +10V or -10V analog signals.



Softlink - a large system softpatch unit provicing up to 3 DMX512 inputs fully proportionally patched to 3 DMX512 isolated and amplified outputs.

L.S.C. Electronics Pty. Ltd.
7 University Place, Clayton, Vic 3168 Australia
Tel: (03) 9561 5255 Fax: (03) 9561 5277

Write in Reader Service Number: 190

BUYERS GUIDE

TV & STUDIO LIGHTING continued from page 79

light PAR HMI for portable use. Complete kit weighs 14.5kg and fits into travel case (optional) 30cm x 42cm x 43cm. Available with a complete range of accessories including electronic ballast, barn doors, fresnel and wide lenses. (*Kit includes lamp head, ballast, lamp, power cable, barndoors, 4 x focussing lenses.) $3870 (Lamp head)/$9660 (Joker 400 Kit*).

Joker 1200 portable PAR HMI High output daylight PAR HMI for portable use. Complete kit weighs 31kg and fits into travel case (optional) 35cm x 40cm x 64cm. Available with a complete range of accessories including electronic ballast, barn doors, fresnel and wide lenses.(*Kit includes lamp head, ballast, lamp, power cable, barndoors, 4 x focussing lenses.) $6300 (Lamp head)/$14700 (Joker 1200 Kit*).

DYNAMITE

Disco World (03) 9735 0588

PAR 56 Pro Can thick drawn aluminium, rolled front lip, heavy duty yoke including disc yoke lock, square colour frame with 4 clips, silicone cable. Fully assembled, available in black or polished. $65.

PAR 64 Pro Can thick drawn aluminium, rolled front lip, heavy duty yoke including disc yoke lock, square colour frame with 4 clips, silicone cable. Fully assembled, available in black or polished. $77.

PAR 56 Stubbie drawn aluminium, 4 clips, silicone cable, short barrel, fully wired. $39.

ETC SOURCE 4 PAR

PAR EA 575 watt 115v or 240v operation. Five interchangeable lenses, die cast aluminium construction, rotating lens. Holder for easy beam orientation. $405.

PAR MCM as for PAR EA except fitted with ETC's metal cold mirror (MCM) dichroic coated cool beam reflector to remove 90% of heat from beam. $569.50.

ARRI, SUNRAY

John Barry Group (02) 9439 6955

Arrisun Family of Lampheads gives you a range of options from the new 200w Par to the unique 6000w Arrisun, with flicker free and induction ballast options. $3000 - $35,000.

ADJ

Show Technology Australia (02) 9898 1111

Par 64 Industry workhorse is available in black or chrome. Long life PAR 64 lamps are commonly used and are available in VNSP, NSP, WFL & MFL. The can is extremely affordable and includes gel frame, lamp socket, lead and 4 gel clips. $66.39.

Par 56 Budget style yet sturdy can designed for PAR 56 300W lamp. Available in black or chrome this can comes complete with 240V plug, silicone cable, gel fame and 4 gel clips.$63.93.

Par 46 Perfect for displays, shopfronts or touring this can looks like its bigger brothers but you can use PAR 38 lamps, PAR 30 or even simple RS80 globes, excellent for Bands or DJ's on a budget! $61.48.

Par 16 Tiny PAR's designed for MR16 type bulbs, comes complete with Gel frame and lamp base. Excellent for display highlights or accents. $23.77.

KUPO

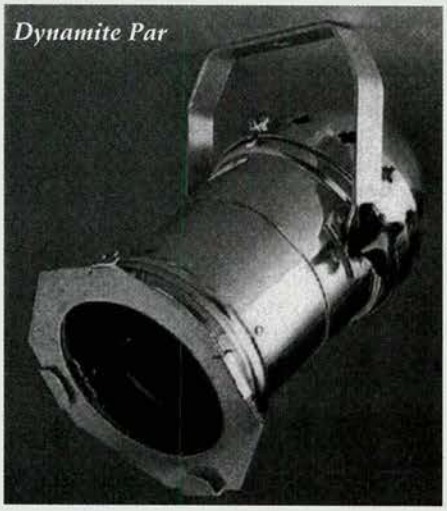
Show Technology Australia (02) 9898 1111

Par 64 Industry standard workhorse. Cans are strong and roadworthy. Aluminium is a minimum of 1.8mm thick and all rivets are aircraft grade. $77.87.

Par 56 As for the 64 above - other points include thick 32mm yoke, locking devices and 4 Gel clips. All enforced edges are rolled so hands aren't cut when handling. Barndoors are available for ALL Kupo cans. $73.77.

Par 46 The PAR 46 version of the above offer the same features but utilises cheaper lamps like PAR 38 or PAR 30. $72.13.

PAR 16 Available in Black, chrome and white these units are perfect for display. 'Shorty' versions allow greater beam spread and/or smaller footprints where space is at a premium. $28.69.



CYCLORAMA/GROUNDROW

DE SISTI

Coemar De Sisti Australia (03) 9467 8666

Giotto Compact stainless steel units in asymmetrical or symmetrical c/w wire guards & colour frame. Available in Manual or Pole Operated versions. Range through 1K & 1.25K. Cyclorama luminaires are available in any configuration (Vertical/Horizontal). Groundrows feature adjustable hinged configurations from one to four compartment unit. From $490.

Duccio Groundrows are available in configurations from one to four compartment units and can be added to for most configurations required. Multiple units feature unique hinged assembly to allow curved or right-angle sets to be easily catered for. From $500.

COEMAR

Coemar De Sisti Australia (03) 9467 8666

Sequenza cyclorama/groundrow aluminium units range through 500W, or 1K/1.25K fixtures in asymmetrical/symmetrical configurations. Complete with colour frame, safety glass & stirrup, they feature a unique locking wedge system which allows for any multiple configuration both horizontal or vertical to be assembled and disassembled in seconds. From $290.

SELECON

Refer to ad in this issue

Aurora Cyc 1 Pole Op 1000/1250w single cell top cyc, extended filter life, safety glass, high performance optics, pole operated tilt, small profile, relamp without removing filter. $500.

Aurora Cyc 4 Pole Op 1000/1250w four cell linear top cyc, extended filter life, safety glass, high performance optics, pole operated tilt, small profile, cabling options. $1900.

Aurora Cyc 2x2 Pole Op 1000/1250w square format four cell top cyc, extended filter life, safety glass, high performance optics, pole operated tilt, cabling options. $1900.

Aurora Flood Pole Op 1000/1250w single cell flood ideal for hard to access displays and showroom lighting, barndoor option, pole operated tilt. $500.

STRAND LIGHTING

Bytecraft Pty Ltd. (03) 9587 02555 (02) 9550 3955

Iris top mounting cyclorama range, exceptionally even beam distribution. Designed for 650W, 1000W or 1250W linear tungsten halogen lamps. Wide range of versions available. From $719

Orion floor standing groundrow units; single, 4 compartment fixed and 4 compartment hinged versions available. Supplied with wire guard and colour frame. From $593.

Iadi compact high power cyc and fill light ideal for small studios and location. Supplied with integral wire guard and barndoor with colour filter clips. $500.

BALCAR

Miller Professional (02) 9439 6377

Fluxlite Six-lamp 300W fluorescent housing with equivalent light output to 3K tungsten fixture. Available with 3200° or 5600° lamps and 20°, 30° or 40° focussing grid spots. Dimmable through standard triac dimmers. $4520.

Quadlite Four-lamp 150W fluorescent housing with equivalent light output to 2K tungsten fixture. Available with 3200° or 5600° lamps and 20°, 30° or 40° focussing grid spots. Dimmable through standard triac dimmers. $3280.

Duolite Two-lamp 75W fluorescent housing with equivalent light output to 1K tungsten fixture. Available with 3200° or 5600° lamps and 20°, 30° or 40° focussing grid spots. Dimmable through standard triac dimmers. $2010.

Twinlite Portable Fluorescent lighting system comprising 2 x single lamp housings with separate dimmable ballast. Plugs straight into GPO outlet. Available with 3200° or 5600° lamps and 20°, 30° or 40° focussing grid spots. $2260.

ADJ

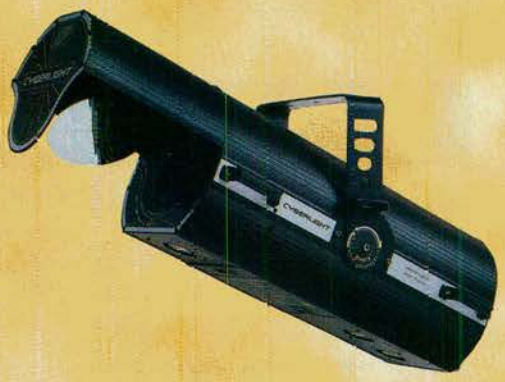
Show Technology Australia (02) 9898 1111

Ribalti A sturdy 4 way Cyc, great for bands, DJ's and small installations. Comes completely wired and with 4 gel frames and uses R7 300W linear lamps. $225.41.

MR 16 Blinder A small footprint but a large output - 500W total power provided by 2 x ENH lamps





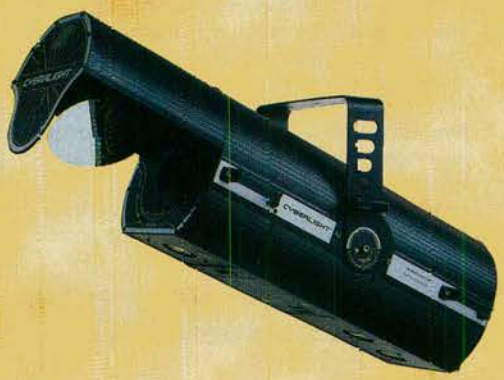


Architectural Superstars

Cyberlights, Studio Color and the new Ecodome the world's finest architectural outdoor lighting combination. Available right now at super low prices.







Entertainment Superstars

Cyberlights, Studio Color and Dataflash the world's finest indoor and outdoor entertainment lighting combination, buy or hire right now at super low prices.

ENLIGHTMENT

AUTOMATED LIGHTING & SPECIAL EFFECTS

Hire, Sales & Service Superstars

Gold Coast 16 Taree Street, Burleigh Junction, Queensland 4220 Phone: 61 7 5593 4656 Fax: 61 7 5593 5048
Melbourne 23 Boundary Road, North Melbourne Victoria 3051 Phone: 61 3 9329 3008 Fax: 61 3 9329 3081
Kuala Lumpur C 19-2 Jalan Ampang Utama 1/1 68000 Malaysia Phone: 603 451 8373 Fax 603 451 8375

A division of THEME Corporation

BUYERS GUIDE

TV & STUDIO LIGHTING

continued from page 92

(not included.). Great for audience washing or whatever large amounts of light is needed. $81.89.

KUPO

Show Technology Australia (02) 9898 1111

Cyc Professional Cyc in 500W or 1000W versions. Lightweight yet rugged, with diecast aluminium side panels and extruded aluminium rear housing. Side panel fittings allow yoke mounting or interlocking of multiple fixtures. Fixtures are supplied complete with anodised aluminium reflector, lampholder, yoke glass and colour frame. $286.00

4/8 Way spot bank The unit consists of lightweight aluminium construction, black finish, heavy duty yoke with positive lock off and T bar to enable this unit to be set at any angle. Each bank can be adjusted independently. Suitable for all the major brands of colour changers. Units are unwired so any PAR 36 lamps can be used. $572.95/$818.85.

MR 16 Audience Blinder The unit consists of lightweight aluminium construction, black finish, heavy duty yoke with positive lock off and T bar to enable this unit to be set at any angle. Each bank can be adjusted independently. Suitable for all the major brands of colour changers. Units is wired ready for work! $818.85.

Mini Strip With a compact size and weight the mini strip consists of a rugged aluminium housing, screen back plate for good ventilation, U.V.filter for each lamp, LED indicator for easy identification and replacement lamp. Optional Kupo dichroic filter is also available. $736.88.

PORTABLE

DE SISTI

Coemar De Sisti Australia (03) 9467 8666

Varibeam compact "Redhead"-style and "Blondie"-style units ranging from 50W, 250W, 800W, 1K & 2K on stirrups or gaffer grips. Compact Flood units also available in 1K versions. Complete and variable kits available in sturdy flight cases and complete with stands and accessories. Complete range of accessories including barndoors, scrim sets, etc. From $150

LOWEL-LIGHTING

Miller Professional (02) 9439 6377

Lowel Portable Kits Portable lighting kits for television and corporate production. Comprises combinations of Lowel's versatile lighting fixtures (Tota, DP and Omni) and incorporates a wide range of accessory options including stands, barndoors, cases, frames, lenses, clamps and flags. From $1200.00 to $3500.00

Lowel i-light on-camera fixture Camera mountable light with 50W or 100W quartz-halogen lamps. Available in kits with camera mount accessories and built-in diffuser. Accessories includes swing-in barndoors, diffusers, dichroic filters and scrims. From $290.00 - $325.00

ANTON/BAUER

Miller Professional (02) 9439 6377

Anton/Bauer Ultralight 2 on-camera light Camera mountable light fixture including 25w quartz-halogen lamp. Comprises folding lamp base (for camera storage) and removable lamp housing with built-in cable to attach to Anton/Bauer Gold Mounts. Accessories include dichroic, diffusion, wide angle filters and barndoors. $395.00

STRAND LIGHTING

Bytecraft Pty Ltd (03) 9587 2555 (02) 9550 3955

Redhead The Original Redhead! 800W open faced light with P2/13(DXX) lamp. Lightweight and portable. Range of accessories available and featured in a number of lighting kits $308

Blonde Lightweight open-faced floodlight widely used for ENG, outside broadcast and location. Supplied with FEX 2000W lamp, barndoor, safety mesh, power cable. $710.

Pulsar Designed for portable and video lighting, supplied with A1/233 650W lamp, barndoor, power cable. Also features in a number of portable kits. $448

Iadi Compact high power cyc and fill lights ideal for small studios and
on location. Supplied with integral wire guard and barndoor with colour filter clips. $500

FLUORESCENTS

DE SISTI

Coemar De Sisti Australia (03) 9467 8666

De-Lux Broad range of compact and linear fluorescent units to suit either PL compact lamps or linear lamps. Feature HF electronic ballasts, interchangeable symmetrical/asymmetrical (no lamp removal necessary), Manual or Pole operated, dimmable (100% to 25% approx.), DMX, Analogue, and switch controllable. Fixtures "sandwich" mount and are ultra-lightweight for easy transportation. From $2200.

SELECON

Refer to add in this issue

Astral Fluorescent Flood high frequency PL 36 low profile flood, 2700, 3000 and 4000k colour temperatures, ballast options, filter cassette, ideal for display and location lighting. $240.

STRAND LIGHTING

Bytecraft Pty Ltd (03) 9587 2555 (02) 9550 3955

Videolux 72D Compact fluorescent softlight and baselight supplied with intensifier, stirrup, power cable and 2 x 36W CRI compact **fluorescent lamps. Dimmable. $1663**

Videolux 216D Compact low energy fluorescent softlight. High output from efficient reflector design and optically matched intensifier. Supplied with 6 x 36W CRI compact fluorescent lamps. $4008.

ARRI, SUNRAY

John Barry Group (02) 9439 6955

Fluoro Softlights Australian designed and manufactured. Available in three sizes: Sunray 300 (2 tube); Sunray 500 (4 tube); and Sunray 1000 (6 tube). From $1150 - $2700.

all prices are ex tax

Next Month:
EFFECTS LIGHTING

ENTECH LX SEMINARS

Confirmed panelists to date

Wed 23rd 4pm -
Themed Environments

Mal Nichols of *Mal Nichols & Associates* will talk about the Kay Street Hotel Development where a church was converted into a nightclub, a scout hall into a saloon bar and an amenities block into an up-market restaurant.

Jonathan Ciddor of *Lightmoves Technologies* will talk about recent work on the following Sydney clubs: Eastern Suburbs Leagues Club and City Tattershalls.

Lloyd Bond of *Theme Corporation* will discuss 'The Theme Revolution".



Thur 24th 1.30pm - DMX & Beyond

Gary Pritchard *LSC*
Phil Lehmann *Strand* Asia
Richard Lambert *ETC* technical services
Trevor Chirchiglia, Australian distributor for *Colortran*

Thur 24th 4.30pm - Meet The LD's

Chris Newman
Troggie
David Murray
Jamieson Lewis

Fri 25th 10am - PCs as Lx desks

Andrew Sherar *Lightmoves Professional Entertainment,* enduser
Jonathan Ciddor *Lightmoves Technologies* distributor of Rosco Horizon & Artistic Licence
Richie Mickan *Coemar De Sisti Australia* distributor
Tech from *Total Concept Prods,* enduser
John Culverhouse *Ashton Admor* distibutor DASLight French software

Fri 25th 1pm - Dimmer Technology

Gary Pritchard *LSC*
Steven Found *Bytecraft*
John Gunton *Dynalight*
Ian Baseby *Entertainment Technologies/Rosco* distributor
John Culverhouse *Ashton Admor* RVE (France) distributor

Venues

• Compiled by Caroline Grafton

METROPOLIS
CONCERT CLUB

The recently opened Metropolis Concert Club (MCC) in Perth, Western Australia (WA) is the first purpose built venue of its kind, constructed in Australia.

The Metropolis Group (TMG) are well known in WA, having operated the Metropolis Club in Fremantle for the past fifteen years. The older Fremantle club hosted performances by many big name touring acts including INXS, Midnight Oil and the Hoodoo Gurus. The only limitation on the Fremantle Club was the audience capacity, only holding approximately 2000 patrons. The next size concert venue was the Perth Entertainment Centre holding in excess of 15,000 people. The Metropolis Group saw the opportunity to design and build a unique medium size venue, with a capacity of up to 5,000 people in comfort.

From conception to completion, the MCC has taken four years to achieve. With the architectural decisions finalised and implemented, two of the owners flew out to ENTECH 1996 in Sydney to research and purchase the extensive lighting and audio required to fill the sizeable venue. Several lighting brands were carefully inspected and after extensive negotiations TMG decided on the JBL Lighting, Abstract and the LeMaitre range of products. The Metropolis owners were also looking for companies who were capable of designing the intricate trussing/rigging support systems, lighting and audio to suit the unusual design of the building.

The public opening of the MCC in December saw the venue packed with a capacity crowd, partying to the sounds of Midnight Oil and Cheap Trick, followed by the MCC resident DJs. In addition to



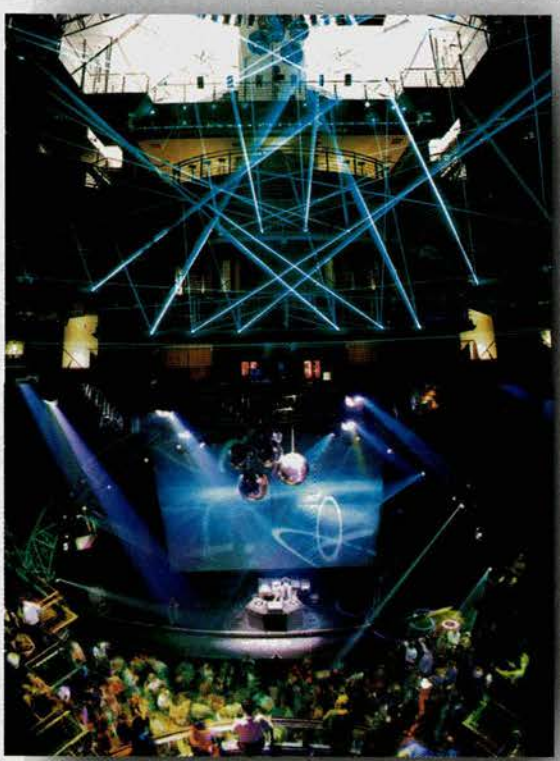


Venues

METROPOLIS
CONCERT CLUB







the lighting and audio, a 10w Argon laser was installed, providing spectacular projection scenes. A Griven Sky Tracer, permanently positioned outside the venue, projects light beams across the night skies of the Perth CBD, providing approaching patrons, with a small taste of what they are about to experience.

The free standing venue boasts 7 levels, VIP bars, VIP elevators, 2 band green rooms ~ complete with spa baths and underground service tunnels. The MCC also caters for corporate functions.

METROPOLIS
CONCERT CLUB

THE PEOPLE & THE PLACE

Venue:	Metropolis Concert Club
Address:	146 Roe Street, Northbridge WA 6003
Owner:	The Metropolis Group
Promoter:	Eric Fazio
Audio Designer:	Audex Concert Sound
Lighting Designer:	ConBiviano (Universal Lighting & Audio)
Trussing Design	Tom Brooking & Con Biviano
Video Designer:	Optel Audio and Visual
Decor/Interior Design:	Tom Brooking
In-House Tech:	Jason Pickett
Disc Jockey's:	Steve Spinner & Birdie
Lighting Operator:	Jason Pickett
Audio Engineer:	Tony Bryan
Video Joc:	Janine Groos
Hours:	Wednesdays and Thursdays ~ Live Touring Acts ~ approx. $27 Fridays and Saturdays ~ Themed Dance ~ from $10

METROPOLIS CONCERT CLUB EQUIPMENT SPECIFICATION

THE AUDIO SPEC

FOH ~ Front of House and Dance Floor

26 x Turbo TMS 3 Cabinets; 16 x Single 18" Sub Cabinets; 24 x Jands S920 Amplifiers; 1 x Soundcraft 40/8/2 Vienna VCA Console; 1 x BSS Omni Drive; 2 x Klark Teknik DN360 Stereo EQ's; 4 x DBX 166x Dual Compressor Limiters; 2 x Drawmer DS404 Quad Gates; 1 x Yamaha REV 5, 2 x SPX900, 1 x SPX1000, 1 x SPX 990 FX Units; 1 x Yamaha D1500 Delay Unit; 5 x Shure SM58, 10 x SM57, 3 x Carlec Condensor, 1 x Beyer TGX50 Microphones.

FB ~ Foldback

12 x JBL Bi Amped 15" & 2" Horn Wedges; 8 x Turbo TMS 3 side fill cabinets; 5x Klark Teknic DN360 Stereo EQs

1x Yamaha MC32/10 Monitor Console with 10 x sends

Additional Audio

4 x EV S200 Speakers ~ VIP Bar; 4x RCF Monitors & Speakers in the Cafe & Cocktail Bar powered by 2x Crest Amplifiers;

DJ Box ~ Fixed Console

2 x Technics SL1210 MK11 Turntables; 1 x Cloud CXM8 Modular Mixer; 1 x Denon 2500 Dual CD Player and 1x 770R Dual Cassette Player; 1 x Sony MDPA3 Laser Disc Player; 1 x Yamaha SPX990 Sound FX Module; 1x Shure SM58 Mic.

THE LIGHTING SPEC

20 x JB Lighting Varyscan 4 1200HMIs, 20 x Varycolour 2000 colour changers, 10 x Varyscan 3 Special Plus', 10 x Varyscan 3 Specials ; 4 x LeMaitre G300 DMX Smoke Machines; 20 x Abstract Futurescan 3 CEDs, 10 x Gladiator CEDs, 6 x Galactic Moon 2CEs, 6 x Monster Moon 250s, 4 x Twister 3s, 4 x Hypermoon 100s; 1 x Griven Sky Tracer 4000, 5x 400w UV Projectors; 100 x Infinity Chrome Par64 Cans, 9x 24"/20" Mirror Balls & Heavy Duty Motors and 6 x 1500w DMX Strobes; 1 x Show Cad Control System with MIDI/SMPTE PCB; 1x IBM Compatible 586 PC; 2 x Abstract 64 Ch CE Controllers; 5x Lightprocessor Q Buffer DMX Splitters.

Laser

1 x Lexel Laser Beam Pro, 10 watt Argon Laser System; 30 x 8" x 8" Bounce Mirrors; 40 x 4" x 4" Bounce Mirrors; 2 x Mirror Barrel Effects; 1 x G120 12 way X/Y/Z Scanner Bed; 1 x Smartmax Software Package; 1 x Lasermax Graphic Software Package; 1x IBM Compatible 586PC

Trussing ~ Rigging

28 x Yale 1.5 Tonne Chain Motors; 200 x Litecraft Safety Wires; 50x Litecraft Half Couplers; 100 x CLS 50mm Hook Clamps; 500mtrs x custom made Concert Truss.

THE VIDEO SPEC

3 x Panasonic WV-BM900 Video Monitors; 41 x Sony Room Display TV Monitors ; 3 x Sony TV Monitors; 3 x Sony CCTV Cameras; 1 x Vicon Phase 8 Camera Controller; 1 x DFS-500 Vision Mixer; 1 x Autopatch Distribution Matrix Control Panel; 3 x Panasonic SVHS G-Code Super Drive VCRs; 1 x Character Generator- for advertising; 13 x Sony VPL V500 LCD Data Projectors; 1 x 8m x 10m Motorised Video Screen; 4 x Sharp LCD Data Projectors

THE STAGE SPEC

Electrical ~ 5 x 50 Amp 3 phase outlets; 1 x 100 Amp 3 phase outlet; 11 x 20 Amp GPOs.

Dimensions ~ Main Stage 13m wide x 8m deep

Curtain ~ Motorised Jands Tab Track Curtain System

Access ~ Pantec access to side rear of stage for direct loading.

Green Rooms ~ Under stage facilities include two suites with walk in robes, spa baths, lounges, full length mirrors, make-up mirrors, benches and full bar facilities.

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THE PA PAGE

Equipment Lessons

By Julius Grafton, standing in for Michael Orland

My first PA wasn't mine, it belonged to a cover band who let me learn how to mix at their expensive. At least I made better sounds than Ken, the soccer mad roadie with the Van. The PA grew from 2 x 4560's and horns to acquire W bins, which is why I came along because I had a truck. Quite a few people had PAs like this at the time, which was the end of the 1970's. Our amps were a mixture of Auditech kits and Jands J600's. Life was simple.

One day we outgrew the ETI kit mixer and got a German one, brand MM. It stood for Michael Mouse. At that time the best sound in entire universe came out of Marty Welshes PA. He had Cerwin Vega Double D 'W' bins which made your hair blow back. They had the same effect as the Concert W bin, which was what Bronco Sound offered on their touring rigs. They soon became part of Artist Concert Tours which in turn was taken over by Jands years later. But I digress.

Getting BIG BASS was the ideal. The Angels were touring with Revolver PA's and the engineer, Ashley someone, specialised in chest pounding high air pressure kick drum.

My cover band purchased an AKG D12 mic which helped, but the 'Double W' bins, despite being loaded with 15" 2205 JBL woofers, identical to those in the Concert W's other used, just didn't kick.

I was having such a good time that I bought my own PA.

Capitalists everywhere were doing this, it was easy. Put it in a truck and charge $150 per night. The first week I got 3 nights work.

My PA had Concert W bins, one per side of course. They weighed 110kg and were 5' x 3' x 3'. So they JUST fitted through a common doorway.

On top I had 1 x 4560 per side for mids, and an Altec horn with a 291 driver.

The Altec horns were a pair of 60° spread 511 flairs. They let the 291 drivers down, it wasn't till I got some constant beamwidth Mantarray flairs that the highs sounded reasonable.

With the Concert W's, the 4560s and the horns the whole combination was balanced in terms of output.

It's strange to think, but all that mass on the low end was matched by the humble 291 driver on the 60° flair up top. The 4560 was crossed over at 150hz, which was too low. Every one else crossed at 250hz for the simple reason the 15" 2220 JBL speaker in the 4560 hated to go down under 250hz under high loads.

Subsequently I was cooking 2220's regularly, and Caroline my partner then (and now) had to make hurried journeys to Harman Australia for repairs. They re-coned the 2220's but charged cash, they wouldn't take a cheque! This was a novel promotional move designed I believe by one John Pallais, who today is slightly more flexible in his business, so I hear! (Love you John)

She (Caroline) also had to do the mini skirt routine to get the things re-coned quickly as the re-cone man was a blokey sort of bloke.

Those were the days!

Part of my problem was the J600's were clipping pretty hard, my sole DBX 160 limiter was only just handling the system protection role.

I changed to Yamaha P2200 amps and although the spec said they were identical to the J600 they had appreciably more power - which means headroom.

I had learned a lesson- the specification means little until you try the device for yourself!

My next big improvement was to buy ZPE 1000 mosfet amps for the Concert W's. Now I had a rated 800 watts into 4 ohms for each bin, and again it was a big improvement.

We got tired of dealing with Harman, so we changed the JBL 15's in the 4560's and the W's to Etones - 801s in the 4560's and 805's in the W's. No-one ever noticed or knew better, we started saving serious recone money. The Etones were less efficient by some few dB's, so they wanted more amp power to do the same job. But they were also more forgiving.

The 4560's went soon, replaced by Altec 2 x 12" mid boxes, created by Rank Electronics who decided at the time that there was an *enormous* amount of money to be made building thirty different designs of Altec powered speaker boxes.

They had a different design for every day of the month! They got Jands to build hundreds of Main Air boxes, which sat in the warehouse because the market was considerably smaller than some brightspark had thought.

Whose idea was that anyway?

Sop we got cheap mid cabinets, with some extra half sized 1 x 12" versions too. It let us run 3 x 12" mid speakers from one side of an amp, at 2.6 ohms which was optimum for a ZPE 600 - by now we were all ZPE.

The ZPE was a poor mans Perreaux, rough but they worked fine.

We really had to hand it to Rank, they financed us through the growth years of the early 1980's. Need more microphones? Get some Beyer on account. Need some wedges? Choose from 50 Main Air monitors in the warehouse. Need a limiter? Get a Urei.

Eventually they got paid too, we were paying them 90 - 120 days which was fine by them!

Another time I'll bore you rigid with some more Rank stories - it was just unreal how they operated.

Michael Orland returns next month - thank Christ!

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In addition to the color wheel (CTC, red, green and blue),the MAC 600 incorporates Martin's own (CMY) full color mixing system which uses Cyan, Magenta and Yellow to create numerous shades and color choices and ensures ultra smooth, uniform color mixing.
Beam apertures are available in two angles - 12° or optional 27°.

Naturally, the unit can be controlled via any industry standard DMX 512 lighting desk or Martin PC controller.

Silent Running

Most importantly, due to its convection cooling principle, the MAC 600 does not require a fan, enabling it to run silently during normal operation.

This noiseless feature makes it ideal for applications in the theatre, TV, concert and club markets. Compact, high-tech and functional the Martin MAC 600 has all the features to provide a professional light show for any occasion.



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