

Connections

Entertainment Technology Trade Monthly

The **BIG ROUND SOUND** of **John Farnham**

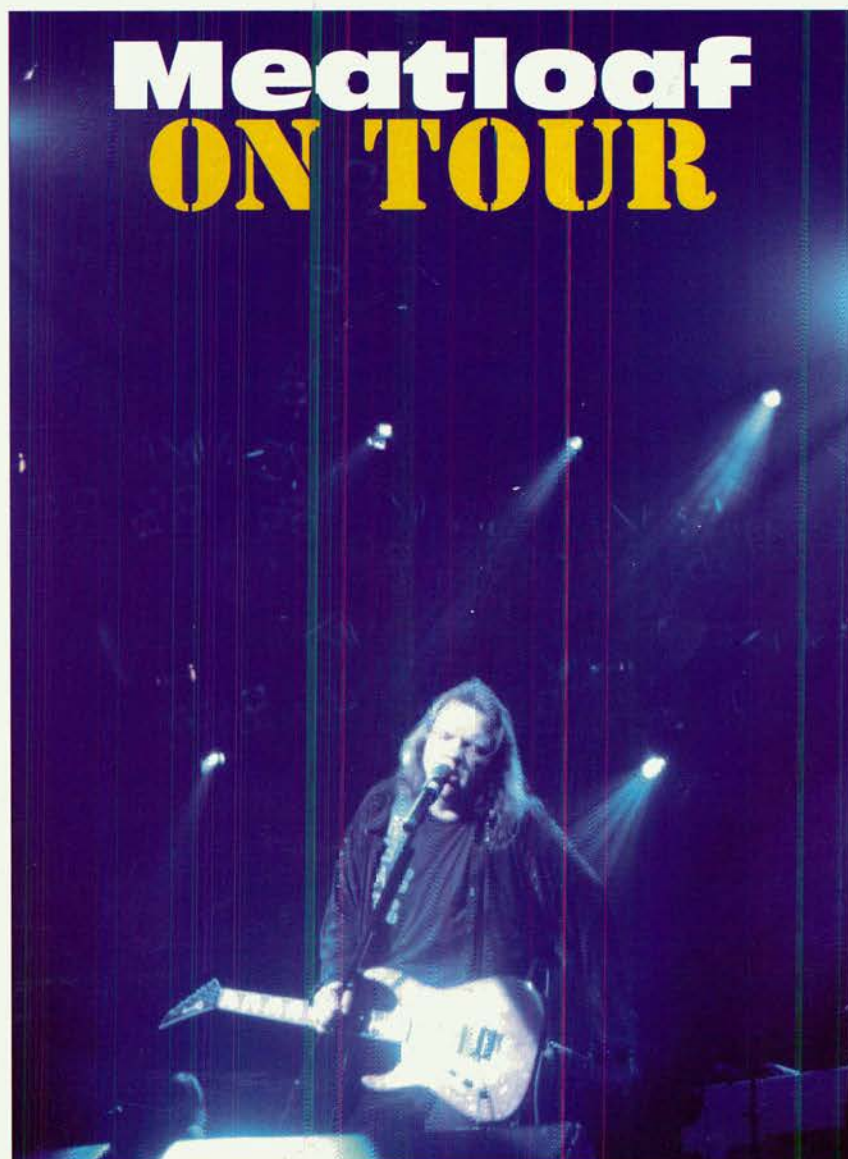
CORPORATE AV:

The barge, the wind and the videowall

THEATRE: Cass Jones on Aussie Technicians and those HUGE musicals

LIGHTING: Inside Blue Heelers

- Farnham & the 150 Vari*Lites
- Buyers Guide: Fcg machines

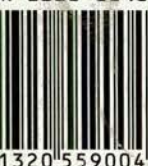


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Write in Reader Service Number: 120

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SUBSCRIBERS and READERS PLEASE NOTE:

○ Next month - **December** - we will be out LATE, a December issue trend these last four years. Subscribers in Eastern States should receive their copies by Monday 16th December, with newsagent sales from Wednesday 18th December.

There is, as usual, no January issue, so the December issue is on sale throughout January.

○ This month Connections will despatch Aussie's to cover the AES Convention in LA, and LDI in Orlando.

○ Any New Zealand and Pacific subscribers who are suffering late delivery should call Nicole, reverse charges on +61-2-9876-3530. We suspect a glitch

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STOP PRESS

Connections

NOVEMBER 1996. Number 38

The BIG round sound of Farnham

■ Jands debut new system on biggest tour of the year

ON THE ROAD: The PA assembled by Jands for the current John Farnham tour is every bit new and contemporary - and wholly uses Meyer speaker systems. New MSL 4 self powered speakers (65-18kHz, 140dB SPL) were flown in eight clusters of six boxes. Beneath these were a pair of UPA 2C cabinets for nearfill.

Any show in-the-round has logistic problems for speaker cables and amplifier placement, so this system cured that, with just a couple of small racks of amps on the floor needed to power the UPA 2C (60 - 18kHz) cabinets alone. Considerable real estate was saved.

Down on the floor were four groups of subwoofers, Meyer 650P's. These comprised six cabinets in each group, placed against the circular stage, well within four break out ramps. A further 2 UPA 2C cabinets were placed in each floor group for front fill.

The whole speaker system thus comprised 48 x MSL 4's, 24 x UPA 2C's, and 24 x Meyer 650P's. As mentioned, the only external amp racks were for the 24 x UPA 2C's. These were Crest 73C1 amps, racked on their sides with a Meyer processor to each rack of 2 amps.

FOH drive was all new and impressive too, with 7 BSS Vari-Curve programmable equalisers used. These allow either stereo 6 band parametric or mono 12 band parametric equalisation (EQ), with 50 user memories. Parametric EQ is variable, allowing you to slide into a troublesome frequency and adjust it to varying frequency centre width.

• Go to **ON TOUR:** page 67



FOH mix position

■ Lots Of Watts make surprise Turbo system purchase

THE PA PEOPLE EXIT CONCERT PRODUCTIONS

With outstanding secrecy, an outright sale of The PA People's Concert Production interests to Sydney firm Lots Of Watts was negotiated earlier this year, but that sale collapsed. The PA People then listed their entire concert production inventory for piecemeal sale, with Grey Eisdell Timms shedding the equipment for auction last month.

Then Lots Of Watts purchased the majority before the sale.

The PA People had a 56 Turbo Sound TMS 3 cabinet based system, which was arena capable for almost any venue in the region. It formed the main part of an inventory which also included smaller speaker systems, a half dozen Yamaha mixing consoles, and considerable trussing and flying equipment.

Lots Of Watts now own a com-

plete Turbo TMS 3 arena capable PA system, comprising 40 TMS 3, 10 TSW subwoofers, proprietary Australian Monitor amplification to suit, drive, FOH, FX, monitors and consoles. The sale also netted all PAP's lighting, 250' of concert truss and 16 chain motors.

Lots Of Watts are one of the fastest growing production firms in the country. Based at Rydalmere in Sydney's geographic centre, the firm was established in 1992 by Greg Kean and Phil Lewis with others. Until now its lighting inventory which includes a significant number of Clay Paky Golden Scans has outweighed audio, although they have sub contracted a lot of audio to provide complete packages for the business theatre market.

By purchasing a complete system for \$700,000 Lots Of Watts have taken a considerable short cut. As-

Key Points -

- Other PA People businesses strong
- Lots Of Watts buy complete Turbo PA

sembling a complete turn-key system from components is a costly and drawn out process, requiring considerable know how and expertise - with assembly and commissioning costs often approaching 25% of the system component outlay. Buying a working system saves time and money.

The challenge now for Lots Of Watts is to properly manage their audio inventory which before now included EHT speaker systems and Soundcraft consoles.

• The PA People thrive. Page 6

This magazine published by:

**Connections
Publishing
Pty Ltd.**

ACN 058443182.

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Publisher:

Julius Grafton.

(Unrelated to 'Graftons Sound & Lighting')

Printer: Maxwells, Waterloo

Film: Omnicron, Dulwich Hill

Database: David Fisher-Dobbin

Newsagents Distribution:

Newsagent's Direct Distribution

Direct Outlet Distribution:

Call us direct: (02) 9876-3530

SCHEDULE/DEADLINES:

Published MONTHLY except
January. **Deadline 15th, month**

prior. ie: Feb. 15 for March.

DIAL 1-800 635-514

(freecall) for

SUBSCRIPTIONS

+61-2-9876-3530 from O/S

AUSTRALIA: \$39.90, **NZ:** \$65,

Asia \$70, **USA** \$95,

Europe/UK \$110. **Int. airmail,**
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INDUSTRY NEWS

AMX Continues Pattern of Growth

DALLAS, TX - AMX Corporation's recent flurry of announcements regarding acquisitions and OEM partnerships bodes well for systems contractors, as AMX continues down the path begun when the company went public last fall.

In May, AMX acquired 100 percent of the stock of AudioEase in exchange. That acquisition combined the product, engineering, and marketing resources of two prominent companies in the home automation and control industry, with AudioEase (approximately \$3 million in 1995 revenue) bringing to the table its hardware and software products for upscale home theatre systems, whole-home audio/video control and distribution systems.

Recently AMX announced that it was forming an OEM partnership with Tech Electronics to mar-

ket the latter company's new computer classroom control system, InSight. InSight is a control and display routing system designed to give an instructor control over the learning environment, allowing instructors to monitor student progress by viewing their screens, and to interact with individuals or groups through their computers or intercom.

AMX has also announced its acquisition of Camrobotics Systems, of Delray Beach, FL. Camrobotics Systems designs, develops, and manufactures remote video camera positioning equipment. With the Camrobotics controllers, pan/tilt cameras can be better integrated with AMX Axxess Control Systems.

In a typical boardroom installation, touch panel systems can average about 20 percent of the cost

of the entire system. According to Joe Hardt, president of AMX, "the premise behind the acquisitions is that if we put more things on our price list, then many of the contractors will have more incentive to buy from us, because they know that we will support them, and they would rather place one PO rather than two or three." Hardt also sees a maturation of the market, with large contractors—doing very well, getting larger, and going after more complex jobs in command-and-control, and other high-return arenas. As this trend continues, Hardt reports that AMX will be seeking further acquisitions of companies with desirable technologies but who may lack good distribution and marketing support, including international marketing.

(Reprinted from Systems Contractor News.)

It's Business As Usual At The PA People

BY JULIUS GRAFTON

Although now out of Concert Productions, (see story previous page) The PA People are in fact thriving on several fronts. They have a growing contracting business, a manufacturing division (Creative Audio) and retail outlets in several states.

Presently the contracting division is working on the stage management console contract at the Sydney Opera House, believed to be worth over \$2 million. They have in recent months commissioned a major PA system at Optus Oval, previous major work includes the complete AV fittout at the Brisbane Exhibition Centre.

The PA People (Sydney) entered the concert production market through a natural expansion of their rental business in the early 1980's, which still operates from their Enfield retail outlet. They built a reputation doing festival work, with an unrivalled 10 years as primary contractors for the Festival of Sydney.

Ironically they pioneered a device which kept the competition away because no-one else could

field a sound design like it. The system comprised some 200+ Bose 802 cabinets on unique ground mounted 'Bose towers' which allowed un-interrupted audience view of the stage. Delay rings of mini-Bose towers were used.

The alternative was the traditional tower of stacked speaker cabinets.

The 802's have since been replaced with a 30 cabinet Panaray LT2 system, which can cater to 100,000 people - which they intend to retain for rental as a specialist speaker system alone.

With good business on the Festival circuit, The PA People moved into the Concert PA business in 1991 by purchasing 56 Turbo TMS-3 speakers from Mick Privitera's Australian Concert Productions in Brisbane. These had been first imported for Expo 88 in Brisbane.

Adding amplification, rigging and additional consoles, monitors and cabling the move propelled the firm into the concert market against dominant market leaders Jands Production Services. First

seen on the Gloria Estefan tour in late 1991, The PA People's new system impressed many, offering more amplifier headroom than any other similar system in the region.

Events conspired to reduce demand for such a system, when in early 1994 Jands acquired Arena Technical Services - which headed by the late Denis Braham had specialised in combining firms like The PA People with Arena's considerable lighting inventory as a package for tour promoters.

Subsequently the Festival Of Sydney underwent a management change, reducing and then replacing The PA People as primary production contractors.

Finally the circle turned fully, because traditionally The PA People had provided specialist solutions to clients rather than just renting systems after winning a tender. Over time the market has changed to the use of independent sound producers - and eventually most work is now won on tender. Which any production company will attest is fiercely competitive.



~NEWS~

DISTRIBUTION

○ RCF VIDEO PROJECTION equipment is now handled by DM Marketing (Lilydale Victoria) for Pro sales, and Home Theatre World for - Home Theatres. The master importer is Musitronics of Birkdale, Queensland. Call (07) 3822-3906.

○ Meanwhile, STUDIO CONNECTIONS (Euphonix, Lexicon, etc) have appointed Sinclair Communications as their West Australian representatives. Call Studio Connections on (03) 9646-0544.

○ DYNAUDIO ACOUSTICS are now represented in Australia by Amber Technology. Dynaudio make professional monitor loudspeakers and nearfield monitors. Call Amber on (02) 9975-1211.

○ THE SMOKE EFFECTS is a UK maker of - smoke effects and smoke machines, natch. They are now represented in Australia by DM Marketing Pty Ltd. Call (03) 9739-5255.

MOVES AND CHANGES

○ Michael Hewitt has departed Premier Lighting Sydney to take up the position of Manager at Intercity Gearhouse in Canberra.

○ Mark Franklin has joined Studio Solutions in Sydney as a senior service engineer.

> More news on Page 14

~ REVISION ~
FARNHAM SOUND

After page 5 went to print we got a revision from Jands. The PA is as described but some of the smaller Meyer speaker cabinets are made up differently. In essence the PA comprises the main 48 MSL 4's, then instead of 24 UPA 2C's as reported, there were 16 MSL-2's and 8 UPA 2C's. The 24 Meyer 650P subs were the same as reported.

● Broad based industry-wide awards gather steam

AVID sign on to sponsor Awards

MELBOURNE: The ENTECH Awards return next April, now in a yearly format. Given for Technical Brilliance in Entertainment Technology, the Awards are the only industry based recognition process in place today.

AVID Technology Australia have signed as major sponsors, and will present major vision and audio awards to people and institutions. Nominations for people and institutions are open now, with all voting processes handled by Connections magazine and audited by a returning officer.

Product categories have been split this time, with New product awards and Most Popular 'Classic' Products. This is because on the one hand a product may be well known and loved through much usage, a new product will not have an immediate reputation.

Because of this Connections Readers will vote for 'Classic' Products from nominations published early next year. To have a 'Classic' (Most Popular Product) nominated, manufacturers or distributors must obtain three user refer-

ences. This reduces excessive nominations, and the references count towards acceptance of the nomination.

New Product awards are also nominated by manufacturers or distributors, and must have been released for sale during this year.

Product award nominations close at the end of December.

Typically the ENTECH AWARDS include categories in pro audio, recording and film sound, contracting, lighting, video and associated fields.

AWARDS NIGHT AT PLAZA BALLROOM

The ENTECH AWARDS will be handed down during ENTECH tradeshow. The function is at the newly renovated Plaza Ballroom under the Regent Theatre in Collins Street Melbourne.

Complete nomination kits have been sent to over 300 manufacturers or distributors known to Connections. Anyone needing an additional kit, or not having received one should contact Nicole Morris on +61 (0) 2 9876-3530.

Apology to Gavan Swift

In the October issue of Connections a review of the lighting of Little Shop Of Horrors we inserted a comment which caused some disquiet and offence to Gavan Swift and other people he knows.

The story dealt with the time frame for lighting the production - and everyone involved in any production of any kind will attest that, as we know, these can be long and arduous days.

The line said that being in theatre, not rock 'n' roll, Gavan couldn't take drugs to help him. This line of text was not a quote from Gavan Swift, nor was it surrounded by quotation marks. It was placed by the writer as a throw away line or a comic observation.

Connections accepts the follow-

ing propositions put by Gavan:

1. Drugs have no place in any workplace.

2. That the insertion of the line of text could infer to some that taking drugs in some workplaces is acceptable.

We apologise unreservedly to Gavan Swift and anyone offended, and also state that throughout the history of this publication we have forcefully advocated that drug usage in the entertainment industry has no place, function or role whatsoever. Our position is that drugs are a short sighted 'non' solution some people use to artificially prolong their work day when they have failed to keep themselves healthy. Or worse still, they have wasted sleeping hours socialising and thus 'need' drugs to 'normally' perform their working duties.

■ Strange behaviour at a Tracy Bonham gig at Sydney Uni - the student audience didn't raid the stage, trample and climb all over the rig, rip off the microphones, didn't brawl, and didn't disgorge the contents of their stomachs all over the mixing console, multicore and/or wedges, and didn't pass out. The show was strangely orderly, the first orderly uni gig the editor has been to in 25 years. Production company owners and promoters everywhere will be scratching heads about this one

■ Gutsy and admirable behaviour from a Sydney contracting firm who resigned a major contract before work started when it became apparent the job would stretch their resources. Of course they had to endure sniping from other firms. No names here.

■ The 10th Annual ARIA awards were technically excellent. Sound, light, staging, camera work, vision - the whole telecast worked seamlessly without apparent glitch. Deni Hines carried off a song without the TV audience knowing she couldn't be heard in the house. The mic worked through foldback, but a channel on the FOH failed. Live sound and light came from Jands Production Services, while Foxtell provided the OB services. Jands fronted a crew of 14, Foxtell 37. The event producer was Eric Robinson, who heads Jands Production Services. Image Design Technology provided videowall, Staging Rentals did FOH and banquet production, and White Bay Film Services built the set.

■ The failure of the Audio Engineering Society Convention to draw reasonable attendance had one good outcome. An exhibitor had a suppliers sales manager in attendance who hadn't been happy with sales to date. At the conclusion of three slow and quiet days the manager told Connections he'd decided not to seek a new distributor at this time "because the pro audio market here is obviously a lot smaller than I thought". It was all we could do not to say anything....

■ Meanwhile the brave blue polyester jacket wearing AES Melbourne Chapter officials are staging exhibitor meetings this month to draw some consensus on what they should do next.

■ Americans doing business west of the land of hope and glory really need to remember that pesky dotted thing near Tonga, called 'The Date Line'. Sure, one guy I recall on a flight was loudly telling his wife the sun would now rise in the west because they had crossed it. But at Replitech I saw a display missing a vital part and sitting dark because an American thought getting on a late flight on the 21st got you to Asia on the 22nd. So his firm loses 33% of its trade show investment and considerable face

Gossip line: (02) 9876-3530

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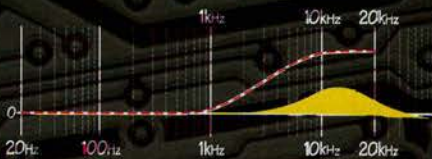
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shelving EQ does (red line). You've gotta hear AIR to believe the "high fidelity" effect it has on PA systems, especially those with horns and compression drivers.

CHS. 1-20 are mono with 1/4" TRS balanced line inputs, and the same renowned high-headroom, low-noise XLR mic preamps found on our 8•Bus console series (including individual mic **TRIM** controls & globally-switched phantom power), **HI SHELVING EQ** with 15dB boost/cut at 12kHz, **SWEPT MID EQ** from 100Hz to 8kHz (1.5 times wider bandwidth than other consoles), and **80Hz LO SHELVING EQ** and **LOW CUT FILTER** with 18dB/octave roll-off at 75Hz just like on our 8•Bus console.

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STEREO AUX RETURNS also feed Aux Sends 1 & 2 via separate controls for returning delay or reverb to stage monitors.

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Technology

WHAT'S NEW, HAPPENING & IMPORTANT FOR THIS MONTH

■ DLP heralds brighter era for Video Projection

First DLP Projector

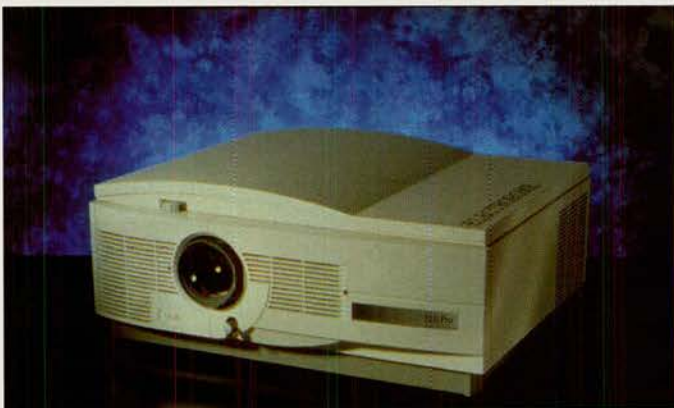
Electrohome say the new Vista Pro video projector (pictured below) is the first commercially available unit based on the Texas Instruments 3-chip Digital Light Processing (DLP™) engine.

It boasts over 1100 ANSI lumens and is powered by a 500w Cernax Xenon lamp. DLP means no alignment so setup time is reduced - making this a rental friendly unit.

The DLP engine has a colour splitting prism to separate white light into red, blue and green - and the DLP system uses micro (very small) mirrors direct mounted to a chip which wobble like crazy, rather quickly.

Size: 677w x 560d x 299h, weight is 33kg. Takes all formats including Windows and Mac.

• From Amber Technology



Write in 402 on Reader Service Card for more info

■ Cable for PA or Lighting use

Mains and Mic Cable

Every now and then a cable comes along which every technician admires - and thinks: why didn't someone think of this before? Such a thing is the DMX control cable from Eurocable, which as its name implies is beaut for running moving lights.

It also is really good for powered loudspeaker systems, because it has one or two balanced

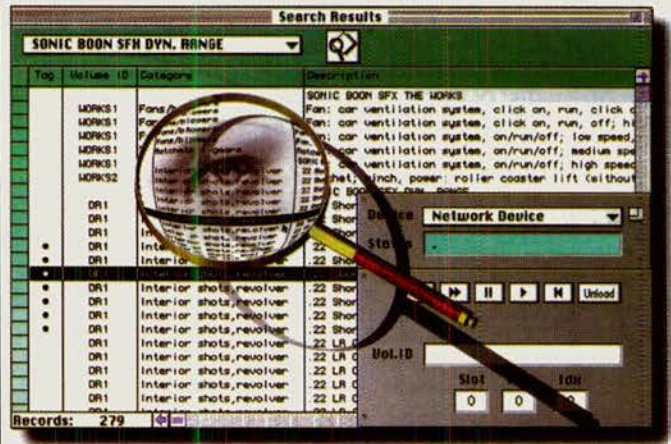
run one neat cable to your moving light, with a power connector and DMX signal connector on each end. Or if you have a Meyer or Eon self powered speaker, likewise you run power and balanced signal to the box on one cable. It makes sense because your mains all run to one point too.

The cable is called DMX1 (with 1 balanced mic line) or DMX 2 - with 2. The mains line has 3 x 1.5sqmm conductors. Outside diameter is 13.9mm.

•from The Resource Corporation.



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Find Your Sounds - Fast!

Sonic Search is a retrieval system which not only searches and finds your sounds / music / effects - but also can lopad and play them too!

It'll control CD autochangers, create edit lists, control digital audio workstations (DAW's) and upload to DAT. Best of all you can import lists of most famous and not so famous special effects (SFX) databases - so it's there for you.

Other good things this software (for the Mac) does - it'll upload to a CD-writer; use any Mac network; search by word, category, volume ID or library, and hold up to a million records per file.

It supports Denon, Pioneer and Sony CD autochangers, works with Digidesign, Fairlight and Sonic Solutions, and more.

• From Sound Devices.

Write in 404 on Reader Service Card for more info

More Meyer Self Powered

Meyer Sound continues to reinvent itself with another two self powered speaker systems. The concept means the control electronics and the amp are in-built into the box - which is a powerful argument when you consider that each box, anywhere, offers identical performance. Every box has the same output and the same 'tweaking' of input signal. Speaker cable signal loss is eliminated. See our Farnham story this issue for more on this!

The two new are the CQ-1 and CQ-2. They have a new horn for consistent coverage of all frequencies in the verti-

cal and horizontal, CQ-1 covers 80°H x 40°V, CQ-2 does 50° x 40°. The woofer is a 15" unit. Response is 40Hz to 18kHz at +/- 4dB.



Write in 403 on Reader Service Card for more info

Amps with limiters



Feature wishlists for power amplifiers seem to grow. Nowadays some kind of system protection is becoming familiar. Phonic's new MAR 4 and MAR 6 power amps pick up this trend with a switchable output limiter. This in addition to amp fault protection, which is an essential for any amp. Fault protection will close an amplifier channel if a short circuit arises on the output - an occurrence made possible if a speaker connector gets wet, for example. The other most common fault scenario in pro-

fessional use in thermal overload, simply the amp gets too hot. Power-up mute is another compulsory amp feature these days too, because when first turned on a power amp is capable of amplifying the mains spike created by a large transformer sucking large amperage from your mains. Phonic's MAR amps have these prerequisite protection features.

The MAR 4 and MAR 6 have dual fans, one at front and one at rear, to push/pull air through. Inputs are on barrier strip (for permanent install) and also on combo connectors, which accept either a 6.5mm jack OR a 3 pin XLR. Outputs are binding posts. Bridge or parallel operation, ground float, and limit functions are controlled by rear switches.

Maximum average output is quoted at 425w/ch at 4Ω (MAR 4) and 650w ch at 4Ω (MAR 6) at a THD of 1%.

Volume controls are detented, with 41 'clicks'. Signal presence is indicated by an LED on the front panel. Size is 2 rack units tall, weight is 15 and 18.5kg respectively. Prices: \$1250 and \$1550. A smaller model, MAR 2 costs \$995.

• Distributed by CMC.

Write in 405 on Reader Service Card for more info

EV Condenser Instrument Mic

The EV RE 200 is a cardioid, true condenser instrument microphone designed for the exacting acoustic reproduction of choirs, strings, percussions and brass instruments in live performances and sound recordings.

The RE 200's frequency response has a continual presence rise. The response is gently lifted above 1,000Hz (1kHz).

RE 200's transducer is a true, externally biased condenser element based on the RE 2000 design.

The clipping level is 130dB SPL, and dynamic range is 109dB. Retail price: \$539. Requires phantom power.

• From Mark IV Audio, Australia.



Write in 407 on Reader Service Card for more info

THEATRE PROJECTS

Jands is Australia's largest supplier of fabric, drapes, screens, tracking systems and stage machinery to the theatre and cinema industry.

- Theatrical fabric
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- Cinema masking systems
- Fire doors
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- Installation

Jands Electronics Pty Ltd ACN 001 187 837 578 Princes Highway St Peters NSW 2044
 Sydney: Phone (02) 9618 3622 Fax (02) 9617 1045 Melbourne: Phone/fax (03) 5629 2300 Mobile 019 185 196

NEW JBL PRO CINEMA SERIES

JBL Professional has introduced the JBL Cinema 3000 Series of compact, loudspeakers for small to mid-sized theatres.

The new range is designed for a worldwide trend towards smaller multiplex theatres says JBL Professional president Mark Terry.

"There are now more than 90,000 cinema screens in the world and the number grows larger each year - particularly in India and China. The global cinema revolution gives dealers a new challenge: to design and install compact, powerful, but clear sound systems that can perform optimally in a multiplex theatre environment. The Cinema 3000 Series allows dealers to provide that system solution".

The range comprises:

- JBL 3677 Screen Channel Sys-



tem: designed for budget conscious non-THX approved theatres; passive network, 380mm (15-inch) woofer, 90° x 40° horn; RRP: \$1595.

- JBL 3678 Screen Channel System designed for THX-approved theatres that still require maximum performance value; active or passive network, 380mm (15-inch) woofer, 90° x 90° horn; RRP: \$2995
- JBL 3310 Surround Sound Speaker: features high and low frequency protection, 200mm (8-inch) woofer; RRP: \$495
- JBL 3635 Subwoofer: small and compact, features 380mm (15-inch) woofer; RRP: \$1695
- From Jands Electronics.

Write in 406 on Reader Service Card for more info

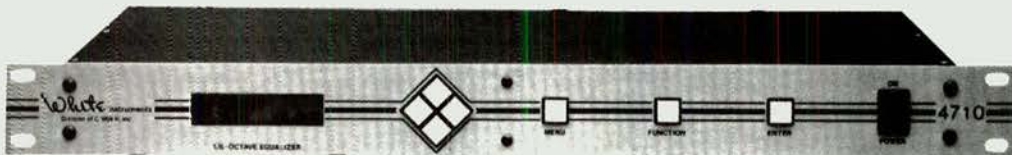
6th octave EQ: 1 R/U!

It mightn't be cheap at \$5170 (retail), but the White Instruments Model 4710 digital 1/6th octave equaliser is a *precision* tool. It has 55 one-sixth octave filters between 25Hz and 12.5kHz, then a 1/3 octave filter at 16kHz. These are +/- 10dB range adjustable on 0.5dB steps. Optional serial interfaces allow the unit to be programmed or joined to a network.

Memory is on EE PROM so you don't loose it all when the memory battery fails.

• From Horwood Australia.

Write in 408 on Reader Service Card for more info



FOR A LIMITED TIME ONLY

~~\$849~~
RRP

Impulse 652S

\$599 RRP

The new Peavey Impulse 652S will fit the bill in a wide range of applications - inside, outside, in schools, churches, offices, restaurants or anywhere else where quality sound and high reliability are essential. With a 6 1/2" high compliance woofer coupled with a 19mm titanium tweeter the 652S delivers 91db of sound with a frequency response of 60hz - 18khz, and will handle 360 watts of program material! An internal 12db of octave passive crossover ensures smooth performance, and the integral inraded inserts allow for a wide range of mounting options. The cabinet offers an unobtrusive yet elegant profile. The Impulse 652S - So much sound for so little money!



Australis Music Australia: PO Box 601 or
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Ph (02) 9698 4444 Fax: (02) 9698 4545

Australis Music NZ:
5 Amokura Street Henderson Auckland
Ph: (09) 837 3230 Fax: (09) 837 3232



Write in Reader Service Number: 177

BUYERS GUIDES

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

Feb Studio Monitors. Truss, Flying systems, rigging

March Wireless Microphones, Video Projectors, Moving Lights

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

May Effectors, Reverbs, delays. Effects Lighting

June Live Mixing Consoles. Profile, PC Spots

July Lighting control, **NEW:** Video splitters, interfaces & 'black boxes'. **NEW:** DJ mixers and samplers.

August Studio Mixing Consoles. Dimmers

September Microphones. Fresnel spots, Floodlights

October Amplifiers, Samplers. Followspots

November Loudspeaker systems. Fog Machines

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

* TO GET A BACK COPY OF ANY ONE CATEGORY: Send \$5 to BG, PO Box 439, Epping NSW 2121. Or call (02) 9876-3530- we fax or mail it to you.

DOLLAR HISTORY

HOW the A\$ has fared over time.
One Australian dollar would/will buy:

	SUS	Yen	£	DM	\$\$in
1965	1.14	403	0.39	4.46	3.25
1970	1.12	400	0.46	4.05	3.22
1975	1.33	392	0.59	3.11	3.15
1980	1.16	251	0.49	2.03	2.52
1985	0.66	165	0.51	2.02	2.10
1990	0.77	98	0.39	1.18	1.45
NOW*	0.79	89	0.50	1.22	1.12

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

NZ\$ at publication: \$1.12 ▼

*At 21/10/96. All rates indicative only. Check with your bank.



MAJOR TRADE SHOWS

- **NAMM 1997:** January 17 - 20, Anaheim LA. Call + (619) 438-8001
- **NAB '97:** April 7 - 10, Las Vegas. Call +1 202-775-4988.
- **NSCA 1997:** April 16 - 20. New Charlotte Conv. Centre, USA.
- **ENTECH '97:** Melbourne Exhibition Centre, April 23 - 25, 1997.
The entertainment technology trade show and convention-
ENTECH Conference: DVD and Pro Audio - April 22nd.
ENTECH Conference: Industry Technical Training-April 22nd
ENTECH Conference: Hi-Tech Retail & Issues - April 23rd.
THE ENTECH AWARDS: Plaza Ballroom, April 24th.
Seminars. Clinics. Events each day at ENTECH 1997. 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. Held in association with ENTECH. Call (02) 876-3530 for details.
- **SHOWLIGHT '97,** Flemish Opera House, Ghent, April 28 - 30. Details from PLASA, +44 1 323 642-639.
- **PALM CHINA '96,** 25 - 28 May, Beijing. Call +65 227-0688.
- **INFOCOMM,** June 5 - 7, LA Convention Centre. +1 703 273-7200
- **NIGHTWAVE '97.** June 7 - 10, Rimini, Italy. +39 541 711-249.
- **SMPTE,** Sydney Exhibition Centre. *Dates changed,* now July 1 - 4. Biannual TV/Film equipment trade show and convention.
- **PALA '97.** July 14-16, Singapore World Trade Centre. +65 227-0688
- **PLASA 1997.** Sept 7-10th, Earls Court, London. Call +44 323 410-335. Fastest growing ent-technology show.
- **AIMS '97.** The Australian International Music Show. Early October.
- **Vision & Audio '97,** Nov. 4-6, Earls Court, London.

Cultural Festivals: Australia:

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



World Weather trend, NOVEMBER

*NOT a forecast!

Where?	Temp °C	Rain mm			
Auckland	19/22	89	Manila	31/22	138
Bangkok	31/22	57	New York	12/4	89
Beijing	10/-1	11	Paris	10/5	51
Chicago	08/00	56	Perth	24/14	23
Dubai	31/18	10	Rome	16/9	129
Frankfurt	8/3	55	San Francisco	18/8	41
HoChiMinhCity	31/23	115	Seoul	11/0	36
Hong Kong	24/19	35	Shanghai	17/7	53
Jakarta	30/23	142	Singapore	30/24	251
Kuala Lumpur	32/23	259	Sydney	23/16	74
London	10/05	64	Taipei	24/17	71
Los Angeles	22/11	28	Tokyo	16/6	101
			Toronto	7/2	63

CASH!

SALES TAX FRAUD

By Julius Grafton

Sales tax evasion in the computer retail industry is under investigation. Some retailers had incorporated as a shelf company, obtained a sales tax number, purchased all stock exempt of sales tax, then blown through 11 months later without having paid a cent of sales tax. Genuine retailers were unable to match their prices which were of course artificially low.

The pro markets which make up the entertainment technology markets are less prone to tax fraud but with many retailers forced to buy on a tax number, some stories circulate.

First, the cashed up customer presents a company order and buys equipment exempt of sales tax. Turns out they have forged the 'order' or borrowed some one else's tax number. In this case would you believe, the retailer is liable for the sales tax!

Moral: check all new / cash sales like this carefully.

There are so many organisations capable of purchasing exempt of sales tax that a retailer is often forced to operate a tax number to originate the goods exempt of tax.

On the other hand, a scam is worked by some retailers themselves who also operate hire departments. Goods are passed over to hire, or 'applied to the retailers own use' which is when sales tax should be paid. But it isn't, the goods are rented for gain but stay on the books as 'sales stock!' Very naughty.



GOING to:

LDI, Orlando, 21 - 24 November or:

NAMM 1997, L.A., January 17 - 20

Just call Rhonda: SYDNEY 9237-2905 for travel!

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KF852 Mid/High & BH852 Low Frequency Stadium Array Systems



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EAW
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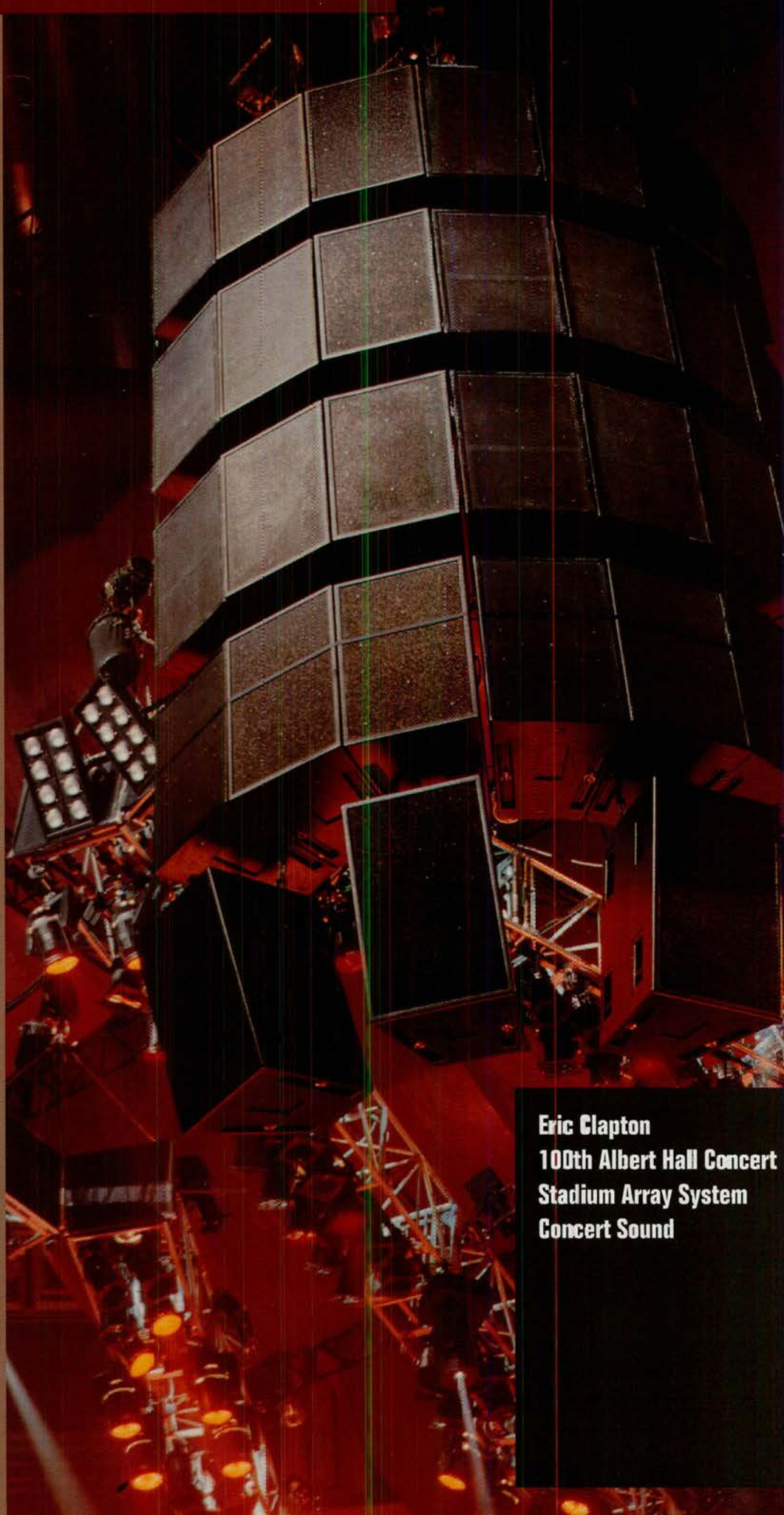
In Australia:

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 1585 Fax: (03) 9415 1595

Write in Reader Service Number: 123



**Eric Clapton
100th Albert Hall Concert
Stadium Array System
Concert Sound**

~NOTICE~

ENTECH AWARDS

AWARDS NIGHT: APRIL 24TH 1997
VENUE: THE PLAZA BALLROOM, COLLINS
STREET, MELBOURNE

Nomination Information

Product nominations from distributors, manufacturers and exporters are open, until December 31st 1996. People & Institution Nominations from Connections Readers are open until January 31st 1997 (see item 3 below).

Categories

Distributors, manufacturers and exporters may now nominate products in the two different categories below.

1. New Product awards

Product must be released for sale in Australia on or after 01 January 1996 but before 01 January 1997. Released for sale means orders taken on or after 01 January 1996 for firm delivery date within the year, but *no later than* 31 December 1996. * *Requires nomination kit*

2. Most Popular Product awards

Products have been available for sale anytime prior to 01 January 1997. *Requires three customer references in writing with nomination.* * *Requires nomination kit*

3. People and Institution Awards

Every product nomination (1 and 2, above) must be accompanied by at least one nomination for people and institutions. Connections readers may nominate people or institutions they consider worthy of an award. Each nomination must include detail as to the nominee's achievement, and full contact details for the person making the nomination. People and Institution awards are open until January 31st 1997. Send nominations to Entech Awards, PO Box 439, Epping NSW 2121 Australia, fax +61 (0) 2 9876-5715, or email to: mail@conpub.com.au

** Nomination kits for New Product awards and Most Popular product awards are available now. Call Nicole Morris on +61 (0) 2 9876-3530 or fax 9876-5715. Anyone wanting a copy of the Awards Rules may also obtain these from the above contact.*

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AVID TECHNOLOGY AUSTRALIA
STAGE AND SCREEN TRAVEL
CONNECTIONS MAGAZINE

INDUSTRY NEWS

MISCONCEPTIONS

○ **Q RECORDING** in Sydney are the target of rumours to the effect that they are a Government Funded organisation. Connections has sighted a fax from another Sydney studio which lists three studios and states: "If you want to help wipe out small business all you have to do is use one of these state, federal government owned or subsidised recording studios and watch all the tax paying studios go out of business" etc. Q Recording state they are part of the Australian Institute of Music's (AIM) Division of Technology and that AIM has never received any Government assistance in its history.

○ **THE PUBLIC ADDRESS CO** is owned by Connections columnist Michael Orland whose popular 'PA PAGE' features on page 98 of this issue. A recent report on the touring production used by Def FX wrongly stated that the 'A RIG' uses a Soundtracs Solo 8 desk. In fact the 'A RIG' has for several years featured a Soundcraft Venue 40 channel console. This system has just been upgraded again with the addition of a new Soundtracs Sequell II console with assignable dynamics.

The PUBLIC ADDRESS CO has also just purchased 16 TMS-3 speaker cabinets, which expands their available speaker cabinet options, including JBL Modular, JBL Soundpower and their extensive Martin range.

The firm is busy with 'Legends of Rock', Fishbone and Cheap Trick. They also have an increasing number of installation rental systems. Call them on (02) 9799-7219.

○ **NIEL SMITH** insists he is not dead at press time. A voice that was almost certainly that of Smith, famous trader and less famous musician, called this office and insisted that he was alive. It seems someone has been telling others that the main SMITH, known well as 'SMITHY' has passed on. SMITHY has taken every possible step to ensure he is known to be still living. We think. We will check.....

STRAND LIGHTING SALE

○ As reported earlier in this magazine, **Strand Lighting** has been sold. Strand was part of the Rank Organisation, a massive international conglomerate. Recently Rank announced it was selling the Precision Industries Group, which contained Strand. A private equity fund manager, Schroder Ventures has bought Strand, and assert that they will maintain current global manufacturing and trading activities. Strand are represented in Australia by Bytecraft Pty Ltd. Call (03) 9587-2555.

SIGNIFICANT SALES

○ **TOTAL CONCEPT PRODUCTIONS** have recently installed a major system into a 40,000 seat stadium in China. The system comprises 22 EV P19415 3-way stadium speaker systems, amps, long throw horns, monitors and microphones.

○ **ACE RADIO NETWORK** recently took delivery of a lot of equipment from Amber Technology for upgrades to 5 stations.

REGULATION ALERT!

○ **Electronic Emission Control** is the aim of a new regulation which affects much of the Technology contained within these pages. A little known new standard from the Spectrum Management Agency requires that ALL electrical and electronic equipment be assessed for compliance. This is a requirement passing to the importer or manufacturer if locally made. The implications here are for **dire penalty** in the event of non compliance. A 'C-Tick' mark **must be displayed** on conforming equipment from 01 January 1997 - very soon now.

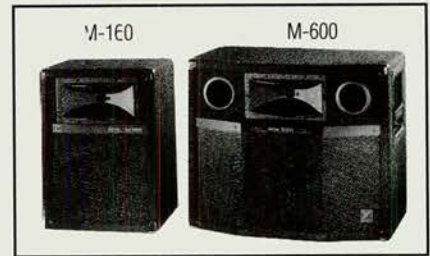
Connections suggests anyone importing or making equipment contact the Spectrum Management Agency as a matter of urgency. Ask for a copy of the EMC standards.

Call them on (06) 256-5555.

YORKVILLE PRO AUDIO

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SPEAKER ENCLOSURES



The Best in Sound Reinforcement Technology

Yorkville elite Speaker Systems are the result of years of research, pushing the limits of modern state-of-the-art sound reinforcement technology. The elite concept is based on the following criteria:

- High power handling, high efficiency, high SPL
- Linear, full-range frequency response
- Proper time alignment with low distortion
- Integrated driver protection
- Compact design
- Simple operation

How do we do it?

- Components - High efficiency, high excursion, linear response drivers from world leaders in driver technology such as RCF and B&C.
- New enclosure designs to accommodate greater driver dynamics. Yorkville has been utilizing trapezoidal designs since the early 1930's.
- Newly designed high-definition internal passive crossovers with 18dB/octave slopes.
- Unique protection networks capable of reacting equally to power overloads and input distortion levels.
- Dual purpose electronic processors specifically designed to enhance bass response or act as active stereo crossovers when bi-amping with subwoofers.

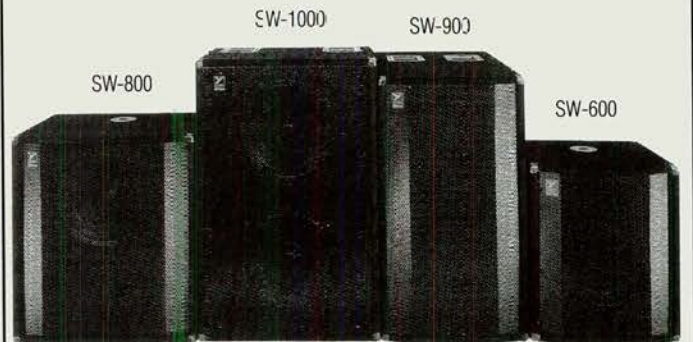
Special Features

- Speakon™ connectors.
- 3/4" poplar plywood construction with optimised bracing.
- ATM Fly-Ware™ options available.
- Heavy-gauge, perforated metal speaker grilles.
- Flush-mounted steel stand adapters.
- Built-in wheels on large enclosures (EX-1000/2000, SW-900, 1000) for easier manoeuvrability.
- Jet-black Ozite™ carpet covering and back hardware for durability and reduced on-stage glare.



élite

SUBWOOFERS



FEATURES & SPECIFICATIONS

MODEL NUMBER	M-160	E-161	EX-350	EX-401	M-600	EX-601	EX-1010	EX-2000
Type	2-way	2-way	2-way	2-way	2-way	2-way	3-way	3-way
Power (Program)	150W	160W	350W	400W	600W	600W	1,000W	1,000W
Impedance (ohms)	8	8	Available 4 or 8	4	4	4	4	4
Sensitivity @ 1W/1m	99dB	100dB	102dB	102dB	101dB	102dB	102dB	100dB
Max. SPL @ 1m	121dB	122dB	128dB	128dB	129dB	130dB	132dB	130dB
Freq. Resp. ±3dB	65-19kHz	65-17kHz	60-16kHz	45-16kHz	50-16kHz	50-16kHz	55-19kHz	55-20kHz
Woofer -Type	1" RCF	1" RCF	2" E&C	1" RCF	10" (x2) RCF	10" (x2) RCF	12" (x2) B&C	15" (x2) RCF
Horn	RCF	Yorkville	Yorkville	RCF	Yorkville	Yorkville	Yorkville	RCF
Horn Driver	F C- N252	RCF N252	1" B&C	1" B&C	1" RCF	1" B&C	1" B&C	2" B&C
Tweeter	NA	NA	NA	NA	NA	NA	L3 Son (x2)	1" B&C
Crossover Frequency	4kHz	3kHz	2kHz	2.2kHz	2.5kHz	2.6kHz	2.8kHz	2.2kHz
Horn Dispersion	0°x60°	60°x40°	30°x40°	30°x40°	100°x60°	60°x40°	60°x40°	60°x40°
Stand Mount Adaptor	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Optional Fly-Ware™	No	ATMx3	ATMx3	ATMx3	Pan w/ringx3	ATMx3	ATMx4	ATMx4
Dimensions (in.-DWH)	13.5x14.5x18	4.5x13.5x19.5	14.5x17.5x22.5	18x21.7x27	13.5x23x19.5	17x16.5x30	20x19x43	13x26.5x45
Dimensions (cm.-DWH)	5.37x46	37x34x50	37x44x57	41x53x69	34x59x50	43x42x76	51x48x109	45x67x114
Weight lbs./kg.	13/15	13/15	60/27	70/32	77/35	81/37	110/50	187/85

FEATURES & SPECIFICATIONS

MODEL NUMBER	SW-600	SW-800	SW-900	SW-1000
Type	Bass Reflex	Horn-Loaded	Horn-Loaded	Bass Reflex
Power (Program)	400W	300W	600W	1,000W
Impedance (ohms)	8	8	8	4
Sensitivity @ 1W/1m	100dB	105dB	103dB	103dB
Max. SPL @ 1m	124dB	135dB	131dB	133dB
Freq. Resp. ±3dB	55-300Hz	40-180Hz	40-150Hz	45-300Hz
Woofer -Type	18" RCF	8" RCF	18" E&C	18" (x2) RCF
Dimensions (in.-DWH)	22x23x28	2x29x34	38x25x41	24.5x28.5x43.5
Dimensions (cm.-DWH)	56x59x71	6"x29x89	97x58x104	62x72x110
Weight lbs./kg.	95/43	117/53	141.64	185/84

Specifications subject to change without notice.

Distributed in Australia by **DYNAMIC MUSIC**

2 CN 350 463 593

2 - 6 Short Street, Brookvale, N.S.W. 2100 Ph: (02) 939 1299 Fax: (02) 938 2072

Write in reader service number 150



Unfair Dismissal Debated

I have been an interested if not avid reader of your magazine since its inception, and have seen it progress from a boorish, roadie mag into what could pass as an industry reference journal on most good days.

It dismays me, then, to find in the October issue, your article 'Suing the boss' occupying two full columns of magazine space near the front of the industry news section. News this is NOT!

I am not interested in your personal vendetta against the person mentioned. I do not wish to have YOUR side of a particularly spiteful personal row with YOUR former employee passed off as NEWS. As mentioned, the case was settled on confidential terms, and it seems that you, as the loser just had to have the final word. As if an article wasn't enough, you also included a photo just so we could all recognise this person, and ensure she never worked in this industry again...well, that was the intention wasn't it?

Please do not belittle yourself and your magazine by including such worthless articles. Keep your office machinations to yourself, and stick to the task at hand. You

will be respected all the more for it!

- **Tony Hystek, Action Sound, Sydney.**

I don't know whether to thank you or burn you for your article on unfair dismissal. On the one hand I'm now much more aware of my obligations as an employer.

On the other hand so are my staff. - **'A small boss', Queensland.**

Guess what - I'm lucky. I fired a guy three months ago for crashing a company van whilst pissed. Guess what - he could have sued me for unfair dismissal, because I didn't give him three written warnings before I fired him! He's lucky too, I nearly punched him out. - **'Bitten Badly', Sydney.**

My friend had just been dismissed from a regional radio station for no reason after someone outside the firm made some untrue allegations against her. After reading your story she laid a complaint. This drew her ex-boss into mediation under this law - she had the truth established. She accepted an apology and was happy with that.

- **Paul Jacobsen, Oak Park, Vic.**

Strand in Australia

The one page on Strand in Australia is clearly a condensed version of what could have been practically a small book. The editing down does not do justice to the remarkable support I received from a small, loyal staff from the early 50's onward, supplemented mightily by commission agents in all states.

It is hard for contemporary readers to understand that, when we began, there were no other specialist suppliers (other than audio, where Wulf Gray's team were predominant) in the entertainment industry - we were treated as just another electrical contractor.

So we had an enormous education task, which went on for many years as we were always bringing new technology in.

This is quite unlike the present situation where the market, the users, the specifiers and so on all know about memory systems, moving lights, electronic dimmers, DMX or whatever, and are more concerned with the merits of one brand vs another, or, more

importantly the quality of customer support.

For example, the Adelaide Festival Theatre was originally budgeted to have a manual 3 preset lighting board. We had to fight to get this changed to a memory system knowing that the Festival Theatre (in 1973) would set the standard for all major Australian venues to follow. That job nearly had an IDM, but I learnt early on about European failures, and converted the contract to DDM. Five or six years later, we, in Australia, revised the DDM specification to what was to become Galaxy, won the VAC contracts after a horrendous tender process, only to be told by Rank UK that "all UK memory system development was stopped". Hence, a large part of the initial costs were paid by Australia, otherwise the system would never have existed.

Strand Australia managed to survive quite well, until becoming owned by Rank Industries Australia. That group was headquartered in Sydney, hence (continued over)

F-Type explodes the price myth

The Cadac F-Type and Cadac Monitor boards herald the latest direction for Cadac. These live production consoles aim at the cost-conscious customer without compromising Cadac's renowned top quality audio and rugged reliability

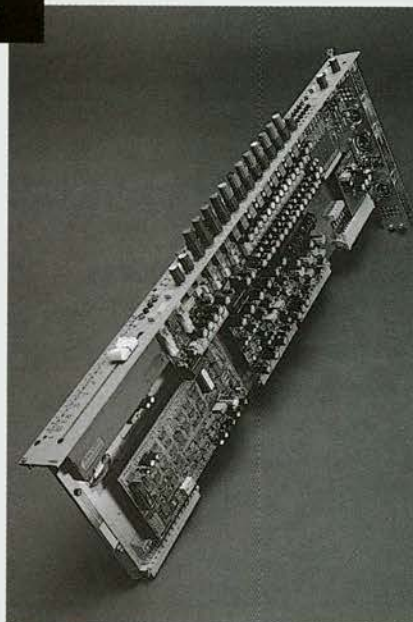
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EASY SOLUTIONS

The Problem

Dave Marshall of TCF picks up the story. "It was fearsome, a cacophony of sound. Echos everywhere. All speakers were on at all times, irrespective of the use of the church. There are 80' high ceilings, arches and naves. We involved Bose® from day one to find a solution".

With a huge structure like this any audio solution requires extensive analysis, otherwise any system design is pure guesswork. However the Diocese had a limited budget at this stage. Part of the problem was also the finishes used, because the resulting system needed to be aesthetically suitable. The cables needed to be run out of sight too, and with solid finishes they couldn't be chased into the floor or walls.

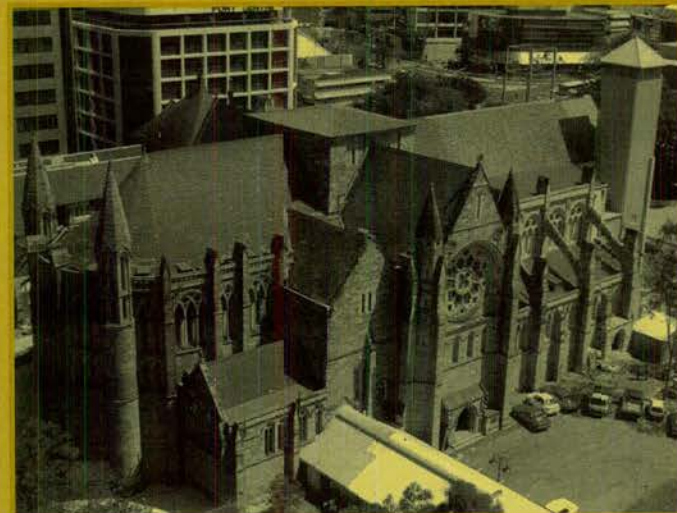
The Plan

TCP and Bose brought in a TEF analyser, to establish the audio characteristics of the venue. Various acoustic measurements were recorded and later analysed to establish the optimum system. A design was conceptualised after particular attention was paid to microphone use and positioning.

A distributed system based on Bose Panaray® 502A speakers was designed, with the speakers being painted the same colour as the sandstone columns to which they would be mounted. Each bank of speakers had a separate amplifier, so they could be turned off if not required.

Think of a church and speech intelligibility immediately comes to mind. At Australia's largest and only Gothic cathedral - St Johns in Brisbane, continual expansion had created an audio nightmare. Solid granite floors, sandstone ceilings, wooden seating and stained glass are all audio hostile finishes - and common in churches. St Johns had been extended in stages, and now can seat over 3,000 people. The existing audio system featured valve amplification and column speakers. Before the latest expansion the Anglican Diocese of Brisbane called TCP (Total Concept Productions, Brisbane) to repair the PA system.

They ended up replacing it



Bose Panaray 502A array is a high quality professional sound reinforcement product which offers uncommonly even coverage. Namely, the frequency response is consistent throughout the coverage area. Being small it is less obtrusive than most other speaker systems. It comes in Professional Grey or Arctic White finishes, and can be painted to suit. A Bose Acoustimass® 502B bass enclosure can be added - even hidden away at floor level - when extra bass is required.

You have the problem - Bose have the solution!



Total Concept Productions are mostly better known as TCF. The firm started in Sydney and now comprises outlets in Brisbane and Melbourne. They have recently started winning a lot of contracting work in Asia. TCP also operate a hire/production division in Sydney, and provide high end laser systems.

The System

Despite the age of the previous system and its relative simplicity, the church always had a PA operator. This meant the new system design would be simpler, and not rely on automation. Training would be required for all operators.

A Soundcraft mixing console was located at the control position, and the system relied upon a Sabine ABX 2400 feedback eliminator. All speakers were on the same time zone, being roughly equal distances from the source. Microphones, both fixed and wireless were specified. New cables to microphone positions and speakers were required. The microphone cables would be up to 250 metres long, because of the need to run them via a tortuous route through the roof cavity - above a suspended sandstone ceiling which moved slightly when walked over!

The Solution

The first stage sound system was implemented with immediate benefits. However some residual intelligibility problems remained, due to the original requirement that the Panaray 502A speakers be flush mounted on the sandstone columns. Bose and TCP again analysed the venue and convinced the church that the Panarays needed to be angled downwards.

This entailed a complete Bose Auditor® survey. Original plans of the building were unearthed and fed in to Bose Modeler® software. Auditor was then used to evaluate the design. Thus the proposed system could be auditioned from any seat in the cathedral. Auditor allows actual real-time simulation of what a system will sound like before it is actually installed. The church then commissioned TCP to install an expanded system which catered to all areas of the cathedral. The result was a huge improvement.

A design utilising Panaray 502As on nine Feavey time delays was installed and commissioned. Twelve operators were trained and given a system handbook with checklists. The cathedral is being expanded again, and a spokesman told Connections that because TCP were very professional and the system so good, Bose would again feature when the PA was expanded.

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Strand in Aust

(continued from previous page)

philosophically opposed to a division working autonomously in Melbourne. Especially as we (a) broke the corporate rules and (b) contributed largely to the profits. This combination was an anathema to the directors, hence our enforced removal to Clayton, and the pressure on most of us to conform or leave.

RIA heads genuinely believed that financial and administrative constraints necessary to the cut-throat consumer brown goods industry could and should be enforced on everyone.

If we had a system failure interstate, I was supposed to get written authorisation from Sydney before a service engineer could get an air ticket - the fact that our service people were trusted, indeed expected, to travel first and explain afterwards, was enough to

cause extreme apoplexy in Sydney, sadly not terminal though.

I take some satisfaction that the name Strand still means something in Australia, and hope that now the group is free of the gong man, it may be able to improve, although life can never be the same again. Many a successful supplier the world over can be grateful for the opportunities created for him/her by Rank stupidity, pun intended.

I am also gratified to see a significant number of ex Strand Australia employees with successful careers in the industry, whose training was in Port Melbourne or Trent Street.

Names such as Peter Kemp, Bob Prouse, Stephen Found and Bruce Harvey come to mind. John Murdoch (Osmond Sound SA), Clive Robertson (Mc Culloch Hobart) and Pat Cahill (Perth) all began directly or indirectly with us, and there are many more with

varying degrees of Strand experience, which my aging memory can't immediately recall.

It might be amusing for readers if a few wrote in with their own experiences - especially some stalwarts who went separate ways, Reg Bartram and Brian Goldsmith for instance.

Enough of this rambling, I'll sit back and see what happens. Thanks for a steadily improving magazine

-Denis Irving, Terang, Victoria.

Tandberg number one?

I am pleased to see some coverage in Connections over recent months of videoconference products. I must say I was surprised to see in the TECHNOLOGY section of the October edition the statement that Tandberg is the "Euro-

pean codec market leader".

I think the people at PictureTel, Sony Vtel, BT, CLI and others would all claim to have a greater market share in Europe than Tandberg.

-James Waldren, Sony Australia, Sydney.

**Editor replies: It is fairly common for press releases (from which that story originated) to contain a lot of subjective claims we can't verify.*

So we usually chop them out. That particular claim didn't get the chop, and that was a sub-editing failure here at Connections. We wouldn't know Tandberg's status in Europe. But we should have been more careful.

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Write in Reader Service Number: 114

Audio Engineering Society fallout

I have just finished reading the report on the 1996 AES. I am very sorry to hear of the decline in attendance at this very fine show. Having my business in North Queensland I find it very hard to get away to trade shows in the Southern Capitals, and since the start of ENTECH I have had to make the choice of which one to support.

At the AES the Workshops and Technical tours are the shining lights in a sea of misinformation in this industry, whereas with exceptions the majority of workshops (seminars) at ENTECH are not quite up to the mark.

BUT if you want to do business with manufacturers and wholesalers ENTECH is the place to go. If you want to see a broad spectrum of pro equipment ENTECH is the place to go.

Why not combine the two great trade shows with the AES doing what they do well and the guys and girls from Connections doing what they do well?

The exhibitors will only have the one show which means low cost and we as the visitors can only win - win - win!

- Dale Kennedy, Kennedy Amplifier Hire Service, Mackay QLD.

**Editor replies: Well before ENTECH (which is owned by the publishers of this magazine) was launched in 1993 we suggested AES and SMPTE merge as we could sense it was too small to remain viable.*

When ENTECH was first staged it was timed not to clash with AES. After the first ENTECH a number of exhibitors approached us with the suggestion the two shows (AES and ENTECH) combine.

In late October 1994 after ENTECH (attendance 3,150) a written proposal was sent to AES, we suggested that AES and ENTECH could operate a combined event. We indicated we would guarantee AES a minimum fee to secure their activities. We had no reply to this.

In early November 1994 at the AES Convention in San Francisco we approached Michael Falk, Chairman of the forthcoming

1995 Australian AES Convention, and made the same offer. He was rather direct in his response, which was emphatically negative. We also suggested that AES could merge with SMPTE.

Then at the April 1995 AES held in Sydney (1050 visitors) we attempted to make an appointment with committee member Tony Hambling to again make an offer. He couldn't meet with us, so we approached Brian Horman and made the proposal. He indicated he could see no reason for the AES to combine with anyone.

On October 16th 1995 we wrote to Rod Brown, the current AES Convention Chairman, offering the same kind of deal. It entailed postponing the September 1996 AES event, running it alongside ENTECH in Melbourne next April. The offer included financial and other guarantees. He called after the next section meeting to advise AES would push on alone. At least he was polite.

At the April 1996 ENTECH (attendance 4,390) AES declined our offer of a free stand at the show from which to promote their activities - and their forthcoming 1996 Convention.

At the September 1996 AES Convention in Melbourne I had an encounter with section Secretary Graham Haynes, who indicated AES planned to push on alone and that New York would back them. And a whole lot more. Rod Brown also poured water on the suggestion that AES and ENTECH combine. He did suggest that we write direct to AES headquarters in New York with a proposal. However he declined to support our initiative.

Finally it must be added that ENTECH is popular, developing, evolving and certainly doesn't and never did NEED to run alongside AES. We just thought it made sense to try to get AES involved so as to stage the best possible show for the visitors.

Exactly as Dale Kennedy suggests in his letter.

Your AES report last month was restrained. My firm totally wasted a week there, spent a packet on freight and hotels, and were ignored by the AES officials the whole time. We saw them, wearing Blue Jackets, sweeping about looking officious. They ignored the people who paid for the whole event - us. No hello, no enquiry as to how we were settling in (before the masses didn't arrive) and no apology after they didn't.

I congratulate Connections for having the courage to say it like it is, and commiserate that some AES minorities choose to try to punish you for doing so. Regretfully I too am forced to sign this letter with a non deplume. This is because I know I could suffer if I speak out.

- 'Waste of time', NSW.

Engineer is found!

The identity of the missing engineer written about in the letters column of the August issue is Glenn Helmut. I spotted him at the recent AES Convention, so I presume he is living in Melbourne and still involved in the industry.

I would have to echo the sentiments in Michael Roberts letter although in the days of lugging around dinosaur double 4 way PA's and notorious rock and roll road crew we used to think that Glenn never quite fitted in, and was a bit eccentric. He was obsessed with achieving audio perfection and would always be moving PA stack, shifting horns and mid boxes to time align them, and get the optimum punter coverage, and hassling lighting crews for drapes so he could hang them to correct room acoustics.

Glenn's leads cases would have to have been the heaviest on the road as they were always filled with pieces of wood, metal tubing, rubber and carpet along with hammer, nails, spirit level and tape measure that would be used for rigging and to make his speaker system adjustments. Most of this stuff frequently got 'lost' by the rest of the crew when pulling down the show, just to avoid loading it

all in and out.

We may not have understood him at the time, and thought he was a bit off the air with his experiments and ideas, but he did get the results and everyone respected him for it. The truth is he was ahead of his time and was rewarded by picking up some of the premier gigs around the country. I remember Glenn as a great guy to have on a crew who had a passion for the work he called his art, and would share it with anyone who cared to listen.

-Paul Arnald, Melbourne.

DVD: not blase!

While the DVD format is, on the face of it, an exciting new development in the data storage field, I suspect that it may be very slow to catch on.

If DV disks are readable in current day CD and CD-R players (which I suspect they are not) then maybe they will penetrate the market quite easily.

If the consumer is forced to buy a new player to accommodate the format then I don't think that they, or we, will be investing in another new format.

I suspect that one of its initial uses will be as a vehicle for the major record companies to repackage their back catalogues. I really can't see any band sitting down to write music for an album that is 740 minutes long instead of 74. I also can't see the consumer sitting down to listen to it!

Your lead story that screams "industry unprepared", "Industry blase" etc implies that we are not interested, but I can assure you that the truth is quite to the contrary. However, having witnessed the serious flops of DCC and MiniDisk formats - mainly because of consumer resistance - I think that most of the music industry at our level will adopt a 'wait and see' approach.

-Colin Wright, Troy Horse Studios, Sydney.

**Editor replies: DVD will prevail because the consumer will FIRST buy the player for movies. Impressed by surround sound, they will then buy the music titles that follow. They'll also play existing 16 bit CDs on the same machine. Watch Connections for more!*

A Stack of Cubes, High on a Barge

Image Design Technology and The Olympic Logo launch

By Madeleine Murray

It's a fiercely windy Friday afternoon at Darling Harbour.

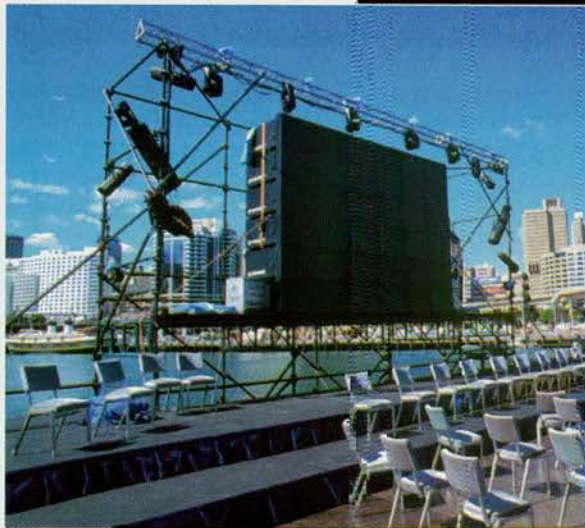
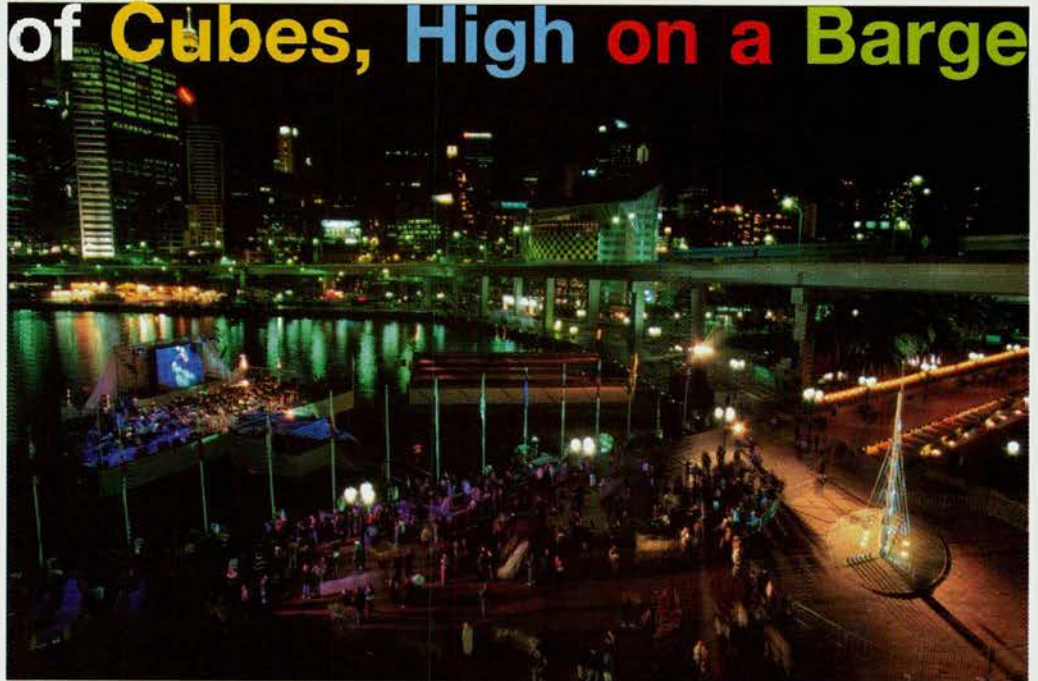
Tomorrow night, at seven o'clock, SOCOG are putting on an elaborate show. The new Olympic logo, the closely guarded secret logo, is to be unveiled, in front of the Prime Minister, 1000 VIPs, and the public.

Out on the harbour, close to the shore, floats a 400 tonne barge. Scaffolding has been welded to the base, and erected above, to form three broad platforms. A 60 piece orchestra will be playing here. And above them, towers a 6x6 video wall, where the compiled and live footage will be shown from the Channel 7 OB van.

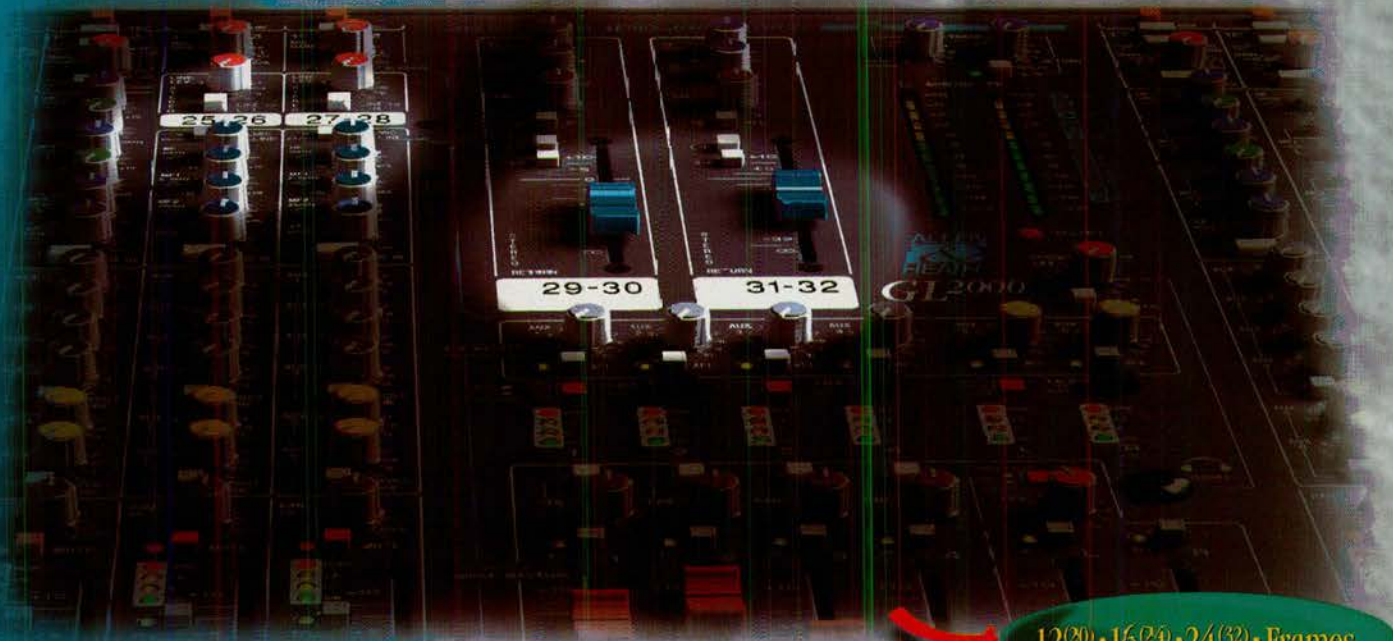
Image Design Technology are praying it won't rain tomorrow night.

IDT was asked to provide the biggest, brightest picture possible, one that could be seen clearly from a distance. IDT had to consider weight when putting the wall

(continued over)



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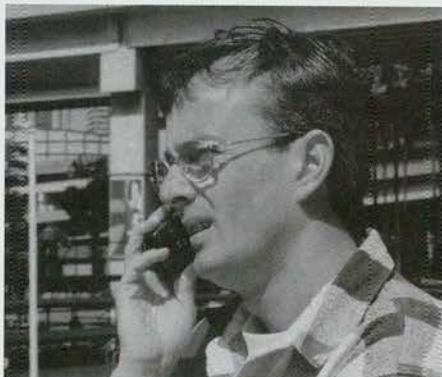
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together, and height as well. "We just didn't want to go too high," said Mark Trapnell of IDT, "because it was just starting to look dangerous. It's already on a 4m stage, and the barge has movement, and there's wind and there's weather. Weight was a big factor, and our screen is 3.5 tonnes."

The screens are the Pioneer RMV4000 series, released earlier this year. They are a video data cube, so they can accept a video signal, or data from computer. IDT is the Australian distributor. On the night, the screens will carry compiled tapes, and live footage. The gap between the screens is 3mm, and gives a pretty seamless image. The unit contains a short throw projector, in a steel cabinet specially built for the rental market. All the cubes lock in together, and are made for loaders to carry it. They are sitting on a box steel frame.

"There's about \$400,000 worth of video cube sitting there," says Mark Cooper, from IDT. "It took twelve guys three hours to build it in. It's a mammoth effort. It was a hard slog for the boys to bring it up so many flights of stairs, but we use Lock & Load (crewing agency) to do all our work, and they're dedicated. They really come to the party every time.

"IDT really developed the video wall market



Producer David Grant (above), Mark Cooper at far right, with unidentified but happy person.

in this country. Gerry Wilkins, our managing director, worked with Pioneer to actually develop the market for the Pioneer product, which is one of the best video cubes in the world. And we sourced Imtech, the best quality video processing units out of the US. We supply broadcast quality product to every show we do. This was an industrial product, aimed at the defence industry. It wasn't really an entertainment product. We've sort of moulded it.

"We spend a lot of time in the pre setup, doing convergence and colour balancing. We actually line up all the reds, greens, and blues on each cube. On this job, we spent three days converging and colour balancing."

IDT have toured these rigs with Janet Jackson, and the Mighty Morphin Power Rangers through Asia, with Jands.

David Hawthorn is IDT's production manager on this show. "Our main concern was the thing getting blown over," Hawthorn says. "It's the scariest position ever to put our video wall."

IDT got called in four days before, went to a meeting, worked it out with the client and Butler, the scaffolders. "Then we had a team of ten guys to actually manhandle the cubes into position," Hawthorn says. "You couldn't put a crane, or a forklift. The only way to build it was to throw men at it, and hope it stays!"

Tony Butler built the scaffold frame onto the barge. Jands is doing all the sound production and the lighting.

The Producer

The urbane, relaxed David Grant is standing on the deck of this nautical setup, advising a man holding a piece of wood with a string through it, near the screens. Grant has done all the public celebrations when the Olympic bid was won in '93, the hospitality in Atlanta, Australia Day, and the Cointreau Ball, so he's not too ruffled by this.

Grant outlines the show to me. There will be a 4min 34sec ceremony of the unveiling, 200 processing schoolchildren with flags of all the Olympic nations, eight past Olympians, and Tommy Tycho and his 60 piece orchestra. They will all move down to the covered logo, and reveal it. Fireworks, lights, raising of the new flag on the new flag pole. More fireworks. Kate Cerebrano comes on and sings Imagine.

The outcome

The show went well, no wind or rain. Thousands of public came. IDT took down the cubes at 10pm. "We were wrapped, stacked, and back in the bar by 11:45," Cooper said, in classic Aussie style.

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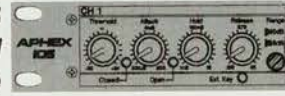
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Sometimes you break the code — sometimes it breaks you

• Ownership of Systems Programming Intellectual Property

By Barry McKinnon

Merely a generation ago, a sizeable chunk of professional sound products on the market had the cheerful glow of tubes to warm the hearts and the equipment rooms of the users. Digital was a word that people would associate with fingers before they would think of computers. The word "software" would have been more likely to conjure an image of a down-filled quilt or pillow than a cantankerous collection of 1's and 0's loosely fixed to a disc (floppy or otherwise).

Now, just 30 years later, you're hard pressed to find a piece of professional audio, video or control equipment that isn't directly or indirectly associated with some type of software and some form of digital control or signal processing. The enormous implications that this issue has for the manufacturers, consultants, and contractors in the electronic systems contracting market—as

well as the potential impact on facility owners—requires a deeper look into the topic.

There has been a great deal of material written about technology convergence and what this means in terms of training and the knowledge base needed to stay with the front runners, but the biggest change we're seeing, as an industry, is where the value is being added in value-added services.

Still doesn't sound all that complicated? Here are a few questions to ponder.

- When the contractor's truck, emptied of components, leaves the owner's facility, precisely who owns the intellectual property consisting of the programming that makes the system work—the owner or the contractor?

- Who is ultimately responsible for the warranty on software and programming—is it

(continued over page)

Contracting

Photokina '96 Update

By Norbert Schmiedeberg

On my way to Cologne I reflected on my first trip to Photokina 28 years ago. For a young sales rep, Photokina was one of the first milestone in the world of imaging business for me. Seemingly endless halls filled with complex reflex cameras, bulky processing equipment, slide projection everywhere and 16 and 35mm film applications. I was greatly impressed and since that time this event never failed to excite me, to the tune, that I only missed one of these bi-annual functions in 28 years.

So what is Photokina? It is the most important event for the imaging and presentation industry held bi-annually in Cologne Germany. Photokina is huge by our standards, with 210,000 square meter of exhibition space, 14 exhibition halls and 1238 exhibitors and an additional 372 manufacturers represented. It takes 45 min to walk from one end to the other (without stops). So huge that a bus service carries people between hall 1 and 14. Naturally the majority of these exhibitors are from the photography and photographic

accessory and processing and printing industry, but nearly a third come from presentation, projection and staging related industries.

Photokina '96 saw the release of a new generation of compact digital cameras. Specifically targeting the desktop publishing and Internet market. These cameras are compact with resolutions to screen levels and slightly beyond. Here is where the imaging revolution takes place. However film is by far not dead film and camera



manufacturer put great trust into their new APS film format, which aims to make photography again more simple, reliable and attractive, as did

the Kodak Instamatic system back in 1964.

Nearly one hall was devoted to large ink-jet printing with water-proof colours and another hall to digital professional photography.

In the presentation field, Photokina saw the first projection shoot-out in Europe, staged by ICIA, the release of DVD (Digital Video Disc) and DVC (Digital Video Cassette), large screen colour (continued over page)

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Sometimes the code breaks you....

part of the product manufacturer's warranty, or is it part of the contractor's system warranty?

- What if a programming problem is caused by a fundamental software bug?

- What if a software bug destroys hardware unrelated to the software/equipment manufacturer, such as an amplifier control system causing a condition that destroys loudspeakers?

- Does the owner of the system actually have a license to make use of, and benefit from, the software and the intellectual property that has been added?

- Is it a limited time renewable license or a one time license?

- Can the owner duplicate the software and programming for use in another location, on another identical system installed by a different contractor?

- Is the owner entitled to software upgrades as part of the system purchase, or are they on their own once the check clears?

- When the owner's MIS department wants to know where the documentation for the control system software is before you get your cheque, will you have an answer for them?

- Who resolves the almost inevitable unresolvable conflicts between multiple pieces of system-related software, running on the system control computer, manufacturer A or manufacturer B or C or D, etc?

- Who pays for that, the contractor, out of their slim profit margin, or the manufacturers out of their slim profit margin?

- How do you budget for the time it takes to sort out a system with multiple software components required to run it?

- How do you specify the ownership or licensing of software as part of a system specification?

- Which industry should we be looking to for a model to base our approach on?

- How do you specify the testing of complex software? As an example, think of the now infamous baggage handling problems

at Denver's airport.

- Do you accept the 1-in-100 chance of a catastrophic glitch as a hazard of using computers in the system? Realistically, if your car failed as often as your office computer software, you'd have traded it in years ago, or had it listed in the Lemon Guide.

HOW IT AFFECTS US...

Manufacturers invest a sizeable amount of capital into the research and development of hardware and related software to make the hardware run. They have market pressures on them to release a product early enough so that the market knows they are competing, and hopefully late enough that any software or hardware problems will not produce major failures.

In the computer software world, it appears that every piece of software you buy is a beta test or development copy (release v1.11645a), as it is virtually impossible (in a time frame measured in less than eons) to test every feature under every operating condition to ensure that no bugs exist. Smaller markets make it harder to justify the investment in software, and the systems contracting industry has a small installed test base and less capital available to work with than the computer software giants. So either the software has to remain fairly simple, or the complex software may not always be fully tested or developed by the time it ships.

Manufacturers are also continually responding to market pressure to add features to match or beat their competitors, as well as working on requests or responses from their installed user base. Every new feature has the potential to add a bug in a previously stable section of code. In computer programming, perfection is actually defined as some sort of statistical likelihood of being perfect in the majority of circumstances and operating conditions.

The manufacturer's goal is to ensure that his hardware stays competitive with other hardware, and that some return on invest-

(continued over page)

PHOTOKINA (continued)

plasma display, a large variety of electronic projection systems including DLP (Digital light processing and light valve systems), lighting and system control makers.

Next to the variety of DLP projection systems, which will certainly revolutionise electronic projection, DVD and DVC caught the attention of the visitors. A single DVD can accommodate the contents of 25 CD-Roms with both sides recorded. As the DVD's counterpart in the video and camcorder sector, the Digital Video Cassette was also one of the key themes at

Photokina. The cassette is smaller than a DAT cassette with a storage capacity of up to 60 min of Video and two or four audio channels. The quality is outstanding.

In addition to all the product displays Photokina offers a range of side entertainment ranging from Photography galleries to AV presentations, good for accompanying spouses who are tired of technology talk.

All in all an event not to be missed, by anyone who uses images, light and motion in their business.

PHOTOKINA NEWSFLASH....

DLP/DMD projection

Almost everyone in electronic projection had DLP units on display. Many still in prototype version. Industry sources predict that in 1997 LCD technology will see substantial drops in sales. Though initially DLP will be released in VGA and SVGA only, higher resolutions will appear in the market in the medium term future. Initial quality problems with sticky mirrors, noise and lamp failure are gradually overcome and the product will have a higher reliability level once reaching Australian shores.

More Light

High Light output in data and video projection was again top on the agenda in projection devices. Companies as Eidophore, Digital Projection, Electrohome and Vicom, just to mention a few did display projector with 1000 to 9000 ANSI lumen light output using LCD and DLP or DLP Light valve technology. But even at the boardroom and small theatre level the gains achievable through DLP technology become noticeable. A SVGA DLP unit, using a 270W metal halide lamp is pumping out 500 ANSI lumen, enough for a

presentation in a semi lit room. For reference a VGA LCD projector with a 575W lamp only achieves 300 ANSI lumen.

For more information contact: A+K Australasia, phone 02 9477 5709.

Colour-Plasma-Display

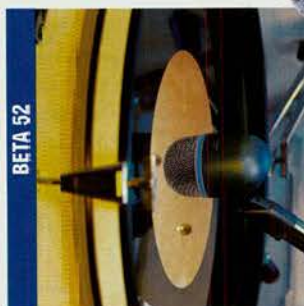
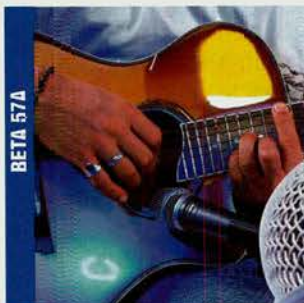
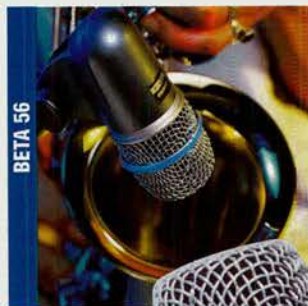
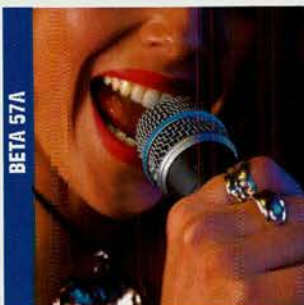
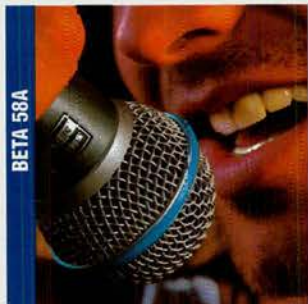
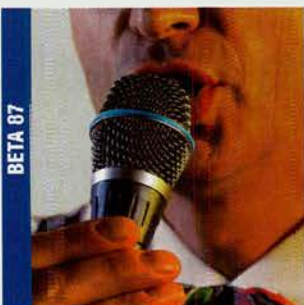
Large screen displays have always been somewhat of a problem due to the massive dimensions of the CRT tube. This is now becoming a problem of the past with the advances in Colour-Plasma-Display. Fujitsu, Sharp and TV-Systems Electronic had 50 - 70cm screens on display with only a thickness of about 20 cm. The image quality has already reached high quality and will certainly further improve. For more information contact: Sharp, Australia, Futjitsu Australia (Rydalemere).

Outdoor Video

Lunar AS from Norway did display a lower cost solution for large screen outdoor video boards. This new design, using liquid crystals is less expensive than the commonly used CRT or coloured lamp displays. The LCD display is backlit

(continued over page)

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Just what is it that makes Beta microphones the world's most respected for live performance? Ask a professional performer, and you'll hear about Beta's remarkable response to both vocals and instruments. While an engineer will talk about their tight, uniform supercardioid pickup patterns and how Beta's technical precision turns every live performance into a studio-quality sound experience.

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It wasn't easy improving upon the Beta range, but once you audition these new microphones you'll agree it was well worth it.

THE NEW SHURE BETA RANGE.

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Audio Visual

PHOTOKINA (continued)

Digital Audio-Video

Repeat video messages are difficult to manage, since the production of laser disk are expensive and both tape and disk undergo mechanical wear and tear. Alcorn McBride Inc. offers a neat solution with their Digital Audio/Video player. Using flash memory or PCMCIA hard disk technology the system can store up to 5 hours of video information using MPEG compression. All this in a compact box, smaller than the average Lap top computer.

For more information contact:

Everything Audio-Video, Melbourne

Multi-Media show control

For many years Dataton, Sweden dominated this market. However forces in Germany and Austria did work on replacing this dominance and at Photokina both companies, Baessgen and Stumpfl did not only display a revamped PC based programming system which offers new means of programming and controlling the presentations and events, including harddisk recording facilities, but also presented a new series of state of the art control systems, which can address RS 232 devices, IR remote, DMX, 0-10V and the good old Kodak Slide projector. The great advantages of these systems lies in their versatility and the ability to run complex programs without the PC on site. For more information contact:

A+K Australasia

17 hours audio: 1GB!

Coping with large amounts of CD's for productions of video, multi-media or in TV and radio broadcast is a common problem and not easily solvable. Omni-Media Sound from Germany has released a system which solves all this. Using MPEG-Layer3 compression with a factor of 1:12, developed by the Fraunhofer Institute in Germany, the system can hold up to 17 hours of CD quality sound on a 1Gb Harddisk. Keyword selection of soundtracks, 4 track editing and transmission via ISDN lines are part of the system. Major TV stations, such as CNN have already decided for MTRAX to save cost and reduce production times.

For more information- A+K Australasia

MIDI/DMX Slides

Using slides as backdrops for music bands. A new trend in Europe. To reduce cost of staging displays, more and more bands are using slides. New systems have been developed to control the projectors and light effects through MIDI and DMX signal, so that the projection device can be incorporated into existing systems and is freely addressable, such as any light source is. A great opportunity for bands and theatre groups to add creative effects and to stun their audience.

For more information- Kodak Australasia, (Brian Hinton), Coburg, Victoria

DMX Recorder

Need lighting control but don't want to carry a lighting desk? Alcorn McBride Inc. has released a new real time DMX recorder. Create your lighting effects, play them from your lighting console and record them in real time. LightCue will now take over the running of the sequence without the need of the lighting desk. Record up to 512 DMX channels and up to 3 hours program. All this in a 2U rack mountable unit.

-Everything Audio-Video, Melbourne

Lighting Balloon

Talking about lighting - a unique approach in lighting large areas has been taken by Airstar. This French company has released the Lighting Balloon. A textile balloon, filled with helium containing a powerful lighting system inside. Tungsten and HMI are available. The range of Airstar lighting balloons goes from 1.6m diameter (2000W tungsten) to 5m diameter (16000W HMI). The Airstar balloon has already lighted some major production in motion picture, video and TV.

For more information contact:

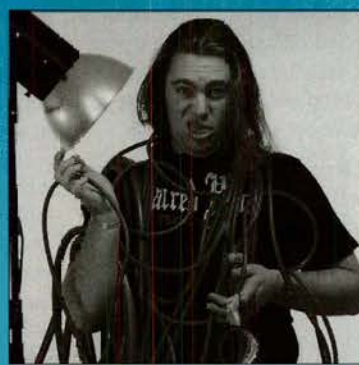
Airstar, France Phone 33-4-76627185, Fax 33-4-76 25 1577

• **Of the thousands and thousands of products this is just a small excerpt of unique and useful products for the entertainment and production industry. The best thing is to go the Photokina '98, in September.**

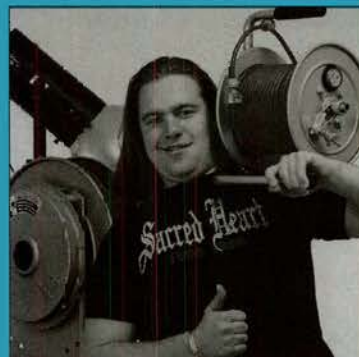
* *Norbert Schmiedeberg is a director of A & K Australasia who will, or do, import some of these products.*



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Sometimes the code breaks you....

investperiod to be able to have it corrected before the system warranty has expired. If it were a hardware problem, the system would not have been accepted.

As an added burden, the consultant has to balance his knowledge of how hard these complex systems are to install and troubleshoot with their responsibility to their client, the owner. Then he must attempt to produce a system design and specification that is achievable.

The systems contractor's goal is to cope with software that may be in a perpetual development state, use it to program the control of a hardware system that is likely fairly straight-forward by comparison to the software, deliver and install it all on time, and ensure that it is working correctly.

In an optimum situation, there will be only one control system protocol to handle.

But in the real world, it is likely that you may have a complete computer controlled DSP-based product at the front end of the system, and it may have to talk to a different manufacturer's amplifier control system, and the user interface may actually have a third component layer in the form of an integrated media control package. All of these may have to talk to one or more likely multiple

pieces of audio or video equipment that have an RS-232 or similar connection that varies from the control protocol of other gear used in the system.

In a complex system, the software debugging can take much longer than the hardware testing and setup. Fine tuning software can literally go on for months after the project is complete, either as bugs are found, or as the owner refines uses and requirements as they uses the system.

The time it will take to complete testing and commissioning of a complex system of hardware and software can be very difficult to predict. This makes it very difficult for anyone to realistically bid on projects that require a fixed price for system programming.

Unfortunately, some systems seem to be non-deterministic (chaotic) where the installation is never quite finished and the service calls never really stop. It is in this quirky computational environment that the systems contractor is faced with questions regarding responsibility for software warranty, and the ownership of the value-added programming. If the software is a bit buggy, who pays for the additional labor to make the system work?

Does the owner own the intellectual property, and is it theirs to do with what they may?

Does that include giving it to another contractor to install in another venue? From both the consultant's and contractor's point of view, it is important that the job have a high enough profit margin that the contractor is truly prepared to take ownership of the project and then cultivate the owner as a long-term client. If the project drags on well past the point of profitability the contractor's interest certainly becomes focused on the bottom line, and less so on the project.

From the user's perspective, he wants a system that does what he needs and does not cost a fortune to maintain or upgrade. In this respect, it is not far different from the purchase of a large computer system. If you've been reading any of the recent stats that point to the high costs of maintaining a network of PC's versus a mainframe computer system, the analogy looks even better.

But in the systems contracting industry you don't have the option of switching from amplifier manufacturer A's control system to manufacturer B's control system.

Adding software components into what was a primarily hardware-based systems contracting industry, there will be increased maintenance costs.

The fact is that any adequately complex system is going to have

additional maintenance costs associated with it. The problem we have as an industry is that we don't know what the magnitude of those costs are going to be for any of the four parties described here. The manufacturers don't really know how much money it will take to stay in the ring developing hardware and software, or how much return they will see before some other company jumps up.

The consultants don't really know what the long-term costs of software-based systems will be. The contractors don't know what the real costs of installing complex software-based systems will be until they are done. The users don't know what the long term costs of owning and operating complex software based systems.

Once you add in the question of ownership of value-added programming and the responsibilities for maintenance of that code and programming, you are talking about the most volatile part of the profit margin equation for all parties. With that in mind you might want to have another look at the questions I asked earlier, and see how easy they are to answer now.

Barry McKinnon is a senior systems designer with Barron Kennedy Lyzun & Associates in Vancouver, B.C. He's spent 17 years in sound contracting.

Reprinted from Systems Contractor News.

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Australia's Techs Tops !

Under the drapery with Cass Jones

By Madeleine Murray

"Generally the attention to detail in this country is much better than England. I think that there is so much theatre in London, that the shows are perhaps not treated with the care and attention they certainly are in this country. The standard of technical maintenance is very very high in this country. And also the artistic maintenance."

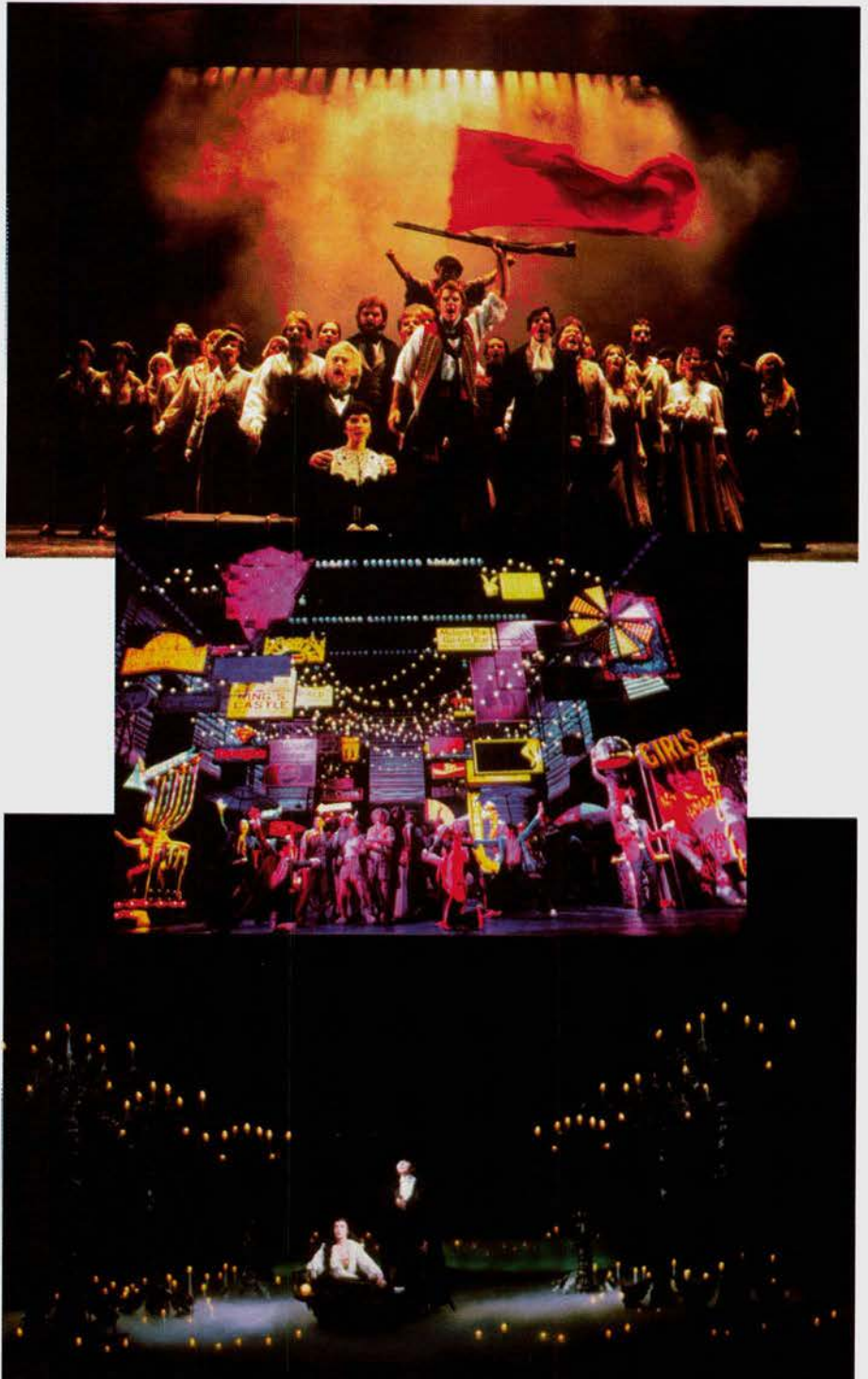
I almost choked on my seared duck liver, and crispy pancetta. (*Things are looking up in the Connections cafeteria! -Ed*)

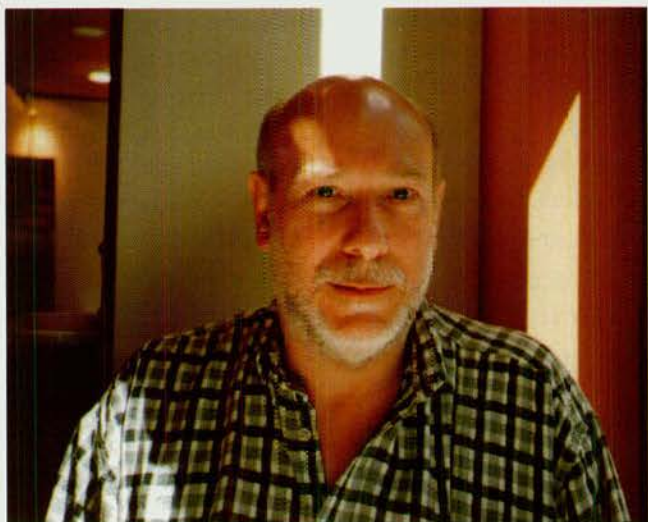
Was Cass Jones trying to flatter me, get a free lunch, or dispel the myth of the whingeing Pom?

Jones, technical director for the Cameron Mackintosh company in Australia, Asia, and Africa, has been out here two years. He has worked extensively in England, including being Production Manager of the Olivier Theatre at the Royal National Theatre in London for seven years.

When the job of TD for Mackintosh in Australia came up, Jones was invited to apply. He came out, looked around for ten days, and signed a two year contract. "I came out here with some trepidation," Jones said, "because I knew nothing about theatre in this country, or the working methods. But very soon after I got here, it was evident that the standards, and the enthusiasm for the work in this country was just so much higher than in London. It was quite extraordinary. I was overwhelmed by the care that the people I was working with gave to the shows."

"Really???" I gasped, blatantly flabbergasted to hear something so different from the usual position of the hallowed West End, cultural cringe, and slapdash Aussie.





The technicians

"I'm not being sycophantic," he said, reading my mind. "In London, it's just another big show, but here, it's an event. You have the opportunity here to look at a problem, and solve it from a clean sheet. For instance, the technical crew. In London, there's a pool of technical crew who've worked in theatre for a very long time. Their restroom is the pub, behind the theatre. The management here took this in hand before I arrived. They said that if we're going to be producing these large shows with lots of moving scenery and lots of machinery, then we must have level headed and clear headed people operating. We now have a system whereby we choose our crew very carefully. And it's no secret within the organisation that there is no alcohol backstage. Once you arrive to do the show, you don't leave the theatre.

"There was an acceptance that the technicians required to operate our shows had to be of the highest standard. We needed a large number of technicians, and there just aren't that number of people with 10-15 years experience in the theatre. So we had a policy of training young people with the right attitude.

"I've found generally that within Australia, that everybody takes it very seriously. It's looked upon very much as a career. Being a stage mechanist is a respectable job. In the West End of London, you're a



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Under the drapery with Cass Jones

stage hand, and it's transient job, a job for someone who really doesn't have much else to do."

Miss Saigon

Jones is ultimately responsible for all the physical aspects of the productions. That is, sets, costumes, sound, lighting, props, and the technical personnel. In September, that was 72 crew on *Phantom*, 63 on *Saigon*, and a touring crew of 24 on *Les Miserables* in South Africa, which comes to a total of 159 people.

When Jones arrived here in '94, *Phantom* had played Melbourne, and was at the Theatre Royal in Sydney. All he had to do was take care of the maintenance, which was handled by the technical heads of departments.

"That was an existing production that was running very successfully, and very smoothly, so that was a question of keeping the thing going," Jones said.

They started work on *Saigon*. Some preliminary work had been done, and some technicians had been to the US to see the show. The show was built and put into the Capitol, during the first year that Jones was here. They had a thirteen week load in and opening period. The show ran for fifteen months.

"It's a very complex production," Jones said. There are 53 automation items, and many other manual flying pieces. Without the computerised automation, it would be an impossible

show to run. *Saigon* has Vari*lites, and light curtains. "The Vari*lites are used because there's so much flown equipment. We don't use them in the rock 'n' roll way, in terms of creating lighting, and moving light effects. We just use the same lantern, to shine in different places. It's one piece of equipment doing the work of several."

Saigon has an extensive radio mic system. Anyone who has a line, has a radio mic when they speak. They have eighteen channels, which means that the cast has to share. "So if you're in the

ensemble, and you have a line, you have to make sure you've got the right radio mic from the person. It's all choreographed through the show, because the sound operator doesn't know which channel a member of the ensemble has, unless it's the one he's been told they have. They have to chase that back all the way through the show. So the right radio mic has to go this particular pattern all the way through the show. They pass the battery packs offstage, and there's a radio technician who looks after that."

There are many scenes in *Saigon*. Sometimes the stage looks quite bare, and other times it is very opulent and furnished. There are times when there is a lot of scenery offstage, and even with a stage the size of the Capitol, they have to hang scenery up in the air. So it comes offstage, the blinds come in to hide it, then it's connected to chain crawlers, and lifted up in the air. "There's a lot of activity offstage, a great deal. There are times when there's far more going on offstage than on," Jones said.

The principals change costume through the show, but the ensemble are changing constantly. One minute they are American GIs, the next minute they are Vietnamese army, or pimps in Bangkok. They don't have time to get back to their dressing rooms, so a large area of the wings is a complete quick change area.

"*Saigon*' is generally recognised to be the most technically complex of all the regular musicals," Jones said.

"The Capitol was very well designed, and taking a show in there was a very straight forward and pleasurable thing to do. The stage side was built from scratch, so there are far fewer compromises than there would be if it were restored. So everything there is 1990s, which is a great help to start with."


In Germany, they have built a theatre outside Stuttgart, expressly to stage *Miss Saigon*. The complex includes a hotel, and they expect the show to run for ten years.

Phantom of the Opera

Although *Phantom* is simpler, it is less logical than *Saigon*. Many of the movements are diagonal, and involve unpredictable items, like huge drapes, which behave differently each time.

There are 35 axes of automation, complicated pyrotechnics, and elaborate costumes. Jones knows people who come to see the show again just for the costumes, because they are "so beautiful." A big part of the show is the costume maintenance.

Phantom is a world wide phenomenon, and some people treat it like a collector's item. They see it in Montreal, Cleveland, London, and Sydney. And they compare them. "Normally, Sydney comes out well on top," Jones said. "The style of the show, the crispness, the level at which it's maintained. This is very much how I feel about how shows are built and maintained in this country. If you go and watch the show in London, and look at it from a technical point of view, you will find fault. If you see it in Sydney, I like to think that those faults do not appear. To be fair to London, they are always the guinea pig, the first venue."

They have understudy rehearsals twice a week, so the replacement would be as good as possible. There is also one technical maintenance afternoon once a week, where everything is checked. The chandelier in *Phantom* is subject to strict regulations because it flies above the audience, and crashes down on stage. In *Saigon*, a helicopter lands on the roof of the US Embassy, soldiers get in, and it flies away. This is one of the famous secret effects, that no one is allowed to see, and those that must, sign a secrecy contract. 

Phantom is a world wide phenomenon, and some people treat it like a collector's item. They see it in Montreal, Cleveland, London, and Sydney. And they compare them. "Normally, Sydney comes out well on top," Jones said.

National Theatre News

Roundup with Dan Cole

• The opening of *Sunset Boulevard* in Melbourne marks the completion of a multi-million refurbishment. The *Sunset Boulevard* production also features high-tech set movement and stage automation. Peter Hodson from Adelaide firm **Automation & Process Control Services** was in town to supervise the installation of the stage automation. The centrepiece of the show is a mansion weighing almost 20 tonnes which is lifted 2 metres in the air.

• **His Majesty's Theatre** in Perth has just completed a lightening quick refurbishment. Builders had a little under a month to complete the half-million dollar refit in time for a new production starting on the 2nd of October. The refit included carpets, comfy seats and acoustic work. Theatre Manager Val McKelvey has oversaw the construction of harder surface areas to make the space more resonant and lively. A new cafe will also be constructed soon.

• Keeping track of everything that the Opera House owns hopefully will become simpler with the commissioning of the **Hardcat Asset Management System** from Hardcat Pty Ltd. All of The Houses' 7000+ assets will now be itemised and barcoded, from technical equipment, tools, to cars and the art collection. The system is written in C++ with a client server version to follow soon.

• The residents of Mosman are hopping mad over plans by Taronga Zoo for a **300-seat lecture theatre**. The Zoo wants to add the venue to their existing function centre and tourism facility yet residents have voiced their concerns via their Zoo Environment Protection Association (ZEPA). They suggest that the *Night Zoo* scheme of last spring caused serious traffic problems late into the evening. They are concerned the new venue would cause similar problems so the residents want restrictions placed on the use of the theatre.

• Toowoomba's **Empire Theatre** renovation continues with its

completion date flagged for June 29, 1997 — 86 years to the day after its first opening in 1911. A theatre manager has been appointed and management are currently negotiating future performances. The theatre is running a revenue raising promotion, the donate-a-seat-scheme where naming rights for any of the 1480 seats can be bought for \$600.

• From *The Cambridge Post* in West Australia comes a letter from Architect Ian H. Dewar who raises concerns over the **Subiaco Theatre development**. He urges that the re-development should 'take account of its historical and architectural significance.' The theatre is in the grand, high-modernist style: in other words, square. It was designed in the mid '50s by Peter Parkinson. Dewar suggests further that the building be heritage listed and is indeed a classic.

• A new Colorbond roof has replaced the **Canberra Theatre's** 30 year-old copper one which had apparently developed leaks. However the ACT Opposition said that it was an 'unnecessary waste of money' and criticised the Government for not assessing the proposal thoroughly, a suggestion rejected (surprise) by the Arts Minister Gary Humphries. Scrap copper at \$2 a kilo? ...

• Further news on the **West End Theatre development**. The proposed \$12M theatre complex for Brisbane's West End has been approved by Brisbane's City Council. Entrepreneur Leonard Lee is behind the venture and is looking to secure capital. The proposed complex would include a 250-seat functions room and 1100 capacity theatre which could be converted to 600 banquet style seating. The proposal aims to relieve the high demand for theatre venues there.

• News from Cairns is that the **Mareeba Repertory Theatre** in Royes St has closed. The building has apparently become too expensive to maintain. Declining audiences also swayed them, according to society President Ken Woodward in *The Cairns Post*.
(continued>)

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Cinema News

- Adelaide's **Rundle Mall** is to have a four screen, 900 seat cinema complex by December 1996 according to Palace Cinemas.
- Sydney Museum of Contemporary Art propose **three cinemas** in a separate cinematheque building.
- Sydney's **ex-Regent Theatre site** will have a hotel, 140 apartments, and a four level entertainment complex including two cinemas and a high-tech. entertainment centre.
- Westfield Holdings will apparently include a **10-screen Village Cinema** complex in its \$150m re-development of the Fountain Gate Shopping Centre near Berwick, Melbourne.
- According to South Australia's *Border Watch*, Mount Gambier's **proposed cinema complex** will only be allowed to operate at half capacity. The \$1m, 3-screened facility will be constructed by early 1997. The operating restrictions are based on the possibility of traffic congestion and parking limitations!
- The concept of a new twin cinema complex for Merimbula (NSW) has been **approved** and development applications are due to follow soon. If all goes to plan, work should commence in February 1997.
- Construction of a proposed shopping, retail, **theatre and cinema complex** for the area around Beenleigh Railway Station is likely to commence in the new year according to the Gold Coast City Council.
- In Merredin, Western Australia, an independent theatre group called Regent Cinemas have proposed a cinema for the **former Centrewest Refrigeration building**.
- Boroondara Council, in Hawthorn, Victoria is expecting a revised application from Village Roadshow for **six cinemas at the Deco-styled Rivoli Theatre**.
- Work is continuing on Morwell's \$8m, **eight-screen cinema complex**; a Village Roadshow joint venture. The cinema will feature an automated confectionary bar and ticketing and Village say the project will employ 50 people.
- US company Showscan will soon enter the Australian cinema industry with a reported **\$50m to spend**. Showscan operate 60 'motion simulation' cinemas internationally and have chosen Darling Harbour as the site for their first Australian cinema. Simulation cinemas are small scale with seating for 24-36; the seats pitch and roll in sync with custom-written on-screen motion.
- The 'new' projectors for the recently refurbished and soon-to-open **Quirindi Royal Theatre** (NSW) have come from the Sydney Opera Houses' Playhouse Theatre. Quirindi's 1930s-style cinema, which seats 275 people, was left to rot in 1981 but was eventually bought by cinema enthusiast John Mitchell in 1988.

Stonnington Council has rejected a re-development proposal for the **ABC Theatre in Waverley Road**, East Malvern. A 300-seat restaurant was proposed for the deco-style theatre yet according to Stonnington Councillor Anne O'Shea there were concerns by residents on the local impact of the development.

• **The Bijou Theatre** in Esperance, one of Australia's oldest functioning theatres, has just celebrated its 100th year. Built in 1896, the theatre could originally hold 600 but now has a capacity of 160 due to fire regulations. Over the years, The Bijou has been a venue for tight-rope walkers, silent films, revues and traditional theatre. The original owner/builder's son, 89 years old, Peter McCarthey was in town for the celebration and remembers as a lad crawling under the floor looking for eggs.

• Manouverings still in Bathurst for a **dedicated theatre space**. A feasibility study is being prepared with City Hall the preferred site whilst the riverbank-end of Russell St is another option. (watch out for the floods!) There is community consensus that Bathurst needs a cultural 'heart and soul' and requires a space to make that happen. There is support from the Mayor Cr Ian Macintosh who said council does have around 20% of the required construction amount but would need to borrow the rest.

• St George's Hall on King St Newtown has reopened as an open-plan performance venue. The heritage listed building was built in 1896 and now has full dressing rooms, rehearsal rooms, a bar and theatre, all spread over three levels. The first show in the renovated theatre is a dance production called *Bodies*. Creative director Mark Cleary and entrepreneur Robert Harrison teamed up to win the 10 year lease.

• Australian entertainment company **Venebles Creating** are in the process of setting up a Halloween spectacular in New York's Madison Square Garden. The display is expected to attract in excess of 100 thousand people.

• Arts administration **accountants** have been left with no doubt that Sydney's Gay and Lesbian Mardis Gras is a financially viable event, apart from its place in the social and cultural landscape. The Mardis Gras receives little Government funding yet it generates in excess of \$38m. Administrators and Commentators are now looking to State based Festivals and asking questions. According to figures published in the *Sydney Morning Herald* Brisbane's festival audience were subsidised by the Government up to \$65 per ticket, to make up a shortfall of \$5.2 m on its \$7m total production bill. This is higher than the other states subsidy averages which for Adelaide, Sydney and Melbourne is around \$46. Critics of State-based festivals propose rethinking direction and 'getting back to basics'.



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The Rolex Bandit: Buddy Can You Spare The Time?

Despite the efforts of other watch manufacturers, nothing comes close to Rolex in terms of prestige. Of course, having never been wealthy enough to own one I can't say whether this prestige is justified by their quality, but I guess if they weren't any good then even the rich would stop buying them.

However, I have owned a couple of fakes. At one stage the discerning traveller could pick them up on every street stall in every market throughout South East Asia, but a crackdown by police resulted in them being available 'by appointment only!'

This belated action only served to make them more popular and gave the sellers an opportunity to jack the price up! The Singapore and Hong Kong newspapers were full of pictures of fake Rolexes being run over by policemen driving McDonald's road rollers.

Like most tourists in Hong Kong I was approached by a fur-

tive chap who offered to sell me a *genuine* Rolex copy.

He took us into his seedy upstairs office where a staggering amount of stuff was on display, counterfeits of all shapes and sizes. Not just Rolex but Patek Philippe, Piaget, and any other brand you could think of.

So, I bought a fake Rolex, a copy of a watch worn by all good submarine captains in WW II, and guaranteed waterproof to 200 fathoms. Trouble was, as soon as I got it wet in the shower it stopped, never to go again!

Of course, as soon as I became aware of the counterfeit culture, I began to see them everywhere. On the streets of New York people with suitcases on street corners would offer you 'Rolex' watches from their huge amount on display. If you asked nicely, they would also offer you ones with a Rolex brand for a few dollars more.

In Tijuana, they even had different grades of counterfeit

watches on display. \$25 would buy you a Taiwanese Rolex fake, but \$50 would buy you a *genuine* Hong Kong fake. These had made in Switzerland on the front, and a Made in H.K. sticker on the back!

But not everyone buys fakes. A lot of people buy the real thing, and they are frequently encrusted with diamonds or in a solid 24 carat gold or platinum case.

So it really came as no surprise to me when I was sitting reading the Los Angeles Times while waiting for the airport shuttle that there was a thief the media had dubbed 'the Rolex Bandit' who had been terrorizing Rodeo Drive and stealing Rolexes all over town.

His method of operation was stunning in its simplicity. He would just walk up to people in the street and ask them the time. If they were wearing a Rolex when they lifted their arm up to have a look, then he would steal it and run off!

The Los Angeles and Beverly

Hills Police departments (without the help of Axel Foley this time!) had launched a massive manhunt for this guy, but couldn't seem to catch him.

Still, he wasn't stupid. He could sense that the net was closing in gradually, and it was only a matter of time before he would be nabbed.

So he apparently rang up a couple of high powered lawyers to arrange a meeting with them to discuss the most advantageous way to turn himself in, and probably organise a book deal on the side.

Since he had become quite famous as the Rolex bandit, the lawyers were falling over themselves to get the publicity of defending him.

However, when the two of them turned up for the meeting, he calmly bailed them up and stole *their* Rolexes!

As far as I know, he's still out there!



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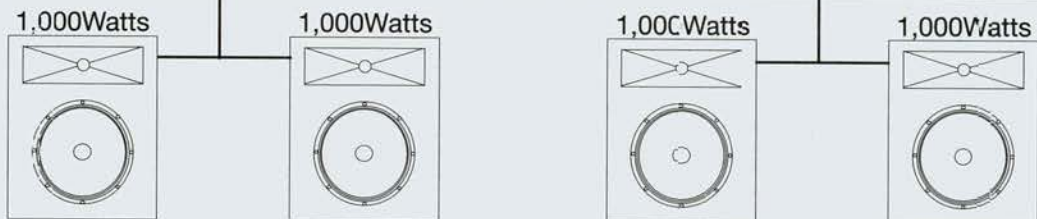
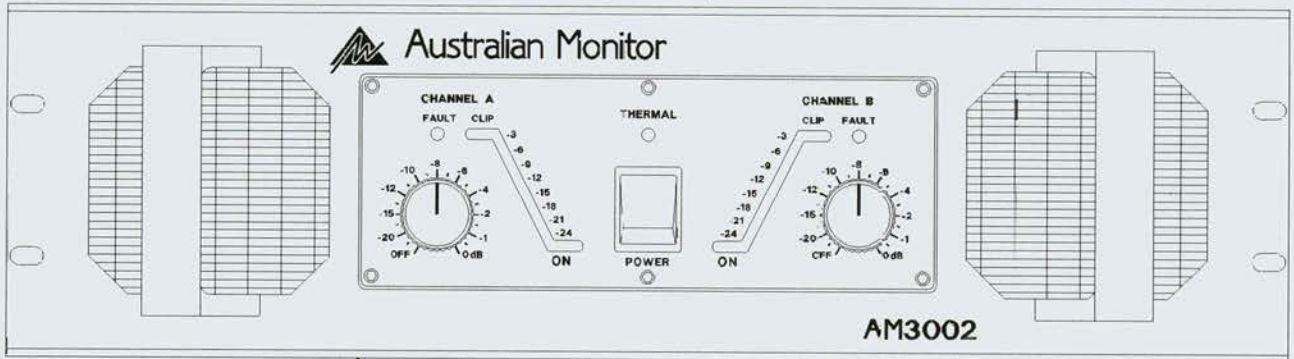


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Recording

Not the Prime Minister of PNG!

PROFILE: Julius Chan, the Sound Recordist

by Madeleine Murray

If people looked like their assets, then Julius Chan would have enormous ears.

Chan must hear more intensely, with more detail and clarity, than most of us. His array of rain sounds, for example, is a revelation. There is rain in alley on asphalt, rain in tropical jungle, rain dripping out of gutters into puddles, rain on wooden roof, rain on tin roof, rain with thunder, rain interior car, rain on sheet glass, and more.

Chan's sound library is built up on a production by production basis. Part of the editor's job when they get a film is to strip away any of the effects that the location sound recordist has gathered. Generally the sound editors hang onto them, and slowly build up their libraries. There are also CDs of sound effects.

brought into a little sound booth, the dialogue is recorded again, and then post synced.

Effects are broken down into spot effects, and atmosphere. These are isolated, and enhanced by the sound editor. Then there is Foley, which is going into a sound studio with a sunken area to record different footsteps, like

confer with Chan. "I could run down and ask, 'What are you thinking of doing in this scene?' and he could come running up and say, 'What dialogue are you going to have here?' So we didn't get in the way of each other," Chan said.

On *Babe*, the composer Nigel Westlake also came and worked at



Dialogue, effects, and music

As a sound editor, Chan works with three main elements, dialogue, effects, and music. When the film arrives, Chan goes through it to decide how much of the dialogue is useable. Some dialogue has to be redone, for technical reasons, like a jet flying over, and some has to be redone for performance reasons. The actor is

walking on pavement, sand, stones, snow, or grass. And there is an area for things like teacup moves, and eating business.

The composer is brought in as early as possible, so that their music is not fighting with the sound track. On *Dating the Enemy*, David Hirschfelder came into Frameworks, and set up a full synthesiser mini suite, so that he could be close to the director, and

the sound editing facility. "It was great, because we knew that our elements weren't going to clash," Chan said. "That's too often the case when the composers aren't working with the sound crews. You can get to the mix, and find in some scene that the music has blown away the dialogue, which we need. So the music has to take a dive, and the musician gets stropy."

The Avid AudioVision

Chan has that funny way of relating to technology as if it were a person. Talking about computers as if they were people. He was on the development team of a system built in Australia, the Editracker. "That was an invaluable experience," Chan said. "That box, for the time, was extremely
(continued over)

PRO TALK

REPLICATION

This month we are interested in Replication, as this is our major special report topic. We asked some of our Tracking Guide studio's what they offer, who they use, and why...

Dave Tozer from CRYSTAL CLEAR STUDIOS said: "We do Real Time Tape Duplication, Cassette Labels and budget priced full colour cassette/CD and Bio artwork. We have a colour (1600 DPI) flatbed scanner. Bands releasing CD's go direct to such manufacturers as Discronics, AC/DC, Dex Audio and Sony. We haven't heard of any negative feedback from the CD manufacturing side of the business. We do hear and see negative feedback on artwork! Mostly being the ridiculously high costs of design, errors in text and excessive printing costs.

For Mastering - We send most of our artists 301 (if they can afford it!) and Turtlerock."

Norman James, C'EST CA A/V says: "For CD manufacture the only plant happening is "Pacific Mirror Image. They have 99.99% quality control and deliver on time everytime. (13 Working days in fact). We've had problems with the other plants."

Kim Horne from PowerHouse Recorders says: "We try to make our clients very aware of Mastering, to the point of including the Mastering Engineer in discussions. Mastering is part of the whole process of recording. Some things sound better on analog, some better on digital, some better in the bin!

Most of the problems in Replication involve printing (artwork).
• *We at Connections can attest to the tricky nature of printing!* -Ed.
(continued over)



All about **DVD** and more, in our special report... from page 57

Julius Chan (continued)

innovative, and worked really well. They are still in use today. And that level of innovation coming out of Australia, I'm really proud of, just like Fairlight. I like this box, the Avid AudioVision. It's doing everything for me. It talks to the picture machines very well. It also talks to other audio machines very well. I feel comfortable with it. It's a box that has said to me, 'Hey, I can do lots of stuff! And I can only get better.' So if I can be of any service in making it better, then great."

Chan is working out of a small room on the second floor of Frameworks. The room is an immaculately arranged array of equipment. The only personal touch is a photo of Chan with his motorbike, a Kawasaki ZXR750. For some reason, he's wearing his red motorcycle leather pants today.

Chan is using the Avid AudioVision, which he likes because it has digital pictures built into the system. "It means I can slow down the show, 'rock and roll' at whatever speed I want to look at the synchronicity, of a gunshot, or lip movement. You can't do that with machines that are linked to a video machine. At the moment, the AudioVision is the best system in this country, in my opinion."

Other equipment

Chan is working on several projects, finishing off the feature *Dating the Enemy*, and all of the *Twisted Tales*, a series produced by Bryan Brown. Machinery in the room includes a CD player, and a portable Sony mini disc recorder. "Not too many people see these," Chan said. "It was a domestic product from Sony that basically didn't kick off. It's like a recordable CD on a very small cartridge, which can store 60-74 minutes of digital audio in stereo. I use that machine when I'm going out location recording. If I'm location recording in a shopping mall, and I just want the ambience of people walking past. If I'm standing there with a big DAT machine, and huge mikes, people walk by and say, 'What's that man doing, Mummy?' With the mini disc recorder, I can be totally discreet. It's in my pocket. It's not as high quality as a DAT machine, but it's good enough for grabbing stuff."

Chan also has a Fostex time-code studio DAT machine.

Chan explains that "the machine at the bottom of the stack is a vitally important one in the film and television industry at the moment for us. It's a SONY PCM800, which is a modular digital multitrack (MDM) machine that records 8 tracks at CD quality, or better than CD quality. When I deliver to a mixer, I have to deliver all the components separately, because it's his job to combine them."

On a film, everything is recorded and edited by the picture people on a few tracks, usually four tracks. Then the sound editors get it, split it up, expand it, add and enhance sounds, and then give it to a mixer, who combines it all back down again. The mixer is balancing all the sounds together, and adding the music and ADR, and special effects.

The mixing board, a Soundtracks Topaz, is for monitoring, so that Chan can hear the eight tracks that are coming out of the AudioVision. Chan gives me a demonstration of some of the tracks in the chase scene featuring Claudia Karvan. The sounds of the rain, the traffic, the rumble, the rain dripping from the gutter on the left hand side. He also lays his sounds for the mixer so that things that happen on the left hand side of the screen, will be on the left hand tracks. He demonstrates a sound moving from the left, to centre, to right, and uses the mixing board to simulate the sound movement.

The early days

Chan's background is an interesting combination of the methodical, and artistic. His mother is the principal of the Campbelltown Performing Arts School, and his father, from Hong Kong, works for the Bureau of Statistics. When he was four years old, Chan's life changed when saw 2001, and heard Sergeant Pepper's Lonely Hearts Club Band. He remembers sitting there for the entire day, playing it on the turntable.

Chan started at Film Australia back in '85, when each track of sound had to be laced onto a huge dubber. He learned how to lace tracks, and was fascinated. "I'd be

lacing a track up, and I'd ask 'What's this?' And they'd say, 'Oh, that's atmos.' I had no idea what that meant. Gradually I learned that an atmos track was like a wind track, or a cricket track, a background atmospheric track, and it started to make sense."

Another track was called a spot, that is a spot effect, like a match being struck, or a car door closing, or a telephone ringing. Chan got to learn the language, and had a very supportive senior mixer, Ian McCloughlin, who encouraged and taught him. McCloughlin left, went to Soundfirm, and asked Chan to join him. "I knew a little bit about the technology, and a little bit about the process. After six months of making coffee, and getting to work with some of the editors, and assisting the mixers, and helping as much as I could, Ian asked me to do the effects work on a mini series, *Fields of Fire*. He basically threw me in the deep end."

The technology was analogue then, no random access digital work stations. There were multi track machines, and sampling keyboards. Chan was at Soundfirm for six years, and is a big fan. "They innovate. They look at the technology that comes from the computer industry, music or film industry, or the military."

Babe, and George Miller

For someone who has only been in the industry ten years, Chan has worked on a staggeringly impressive array of films. *Babe*, *Green Card*, *Lorenzo's Oil*, and *Strictly Ballroom* are some of them, plus about 20 others. Chan was the effects and atmos editor on *Dead Calm*, an intriguing challenge. "There's a flat sea, nothing's happening, but we need an atmosphere," he said. "What's the sound of dead calm? It's nothing, but there is a sound there. That's a hard one."

Babe was great. "George Miller's a genius. He's a hard taskmaster, but that's good, he pulls the best out of his people." Chan was in charge of the dialogue for the animals, as well as being the sound supervisor.

Chan loves working on science fiction, and animation, because he can experiment with strange sounds. A period film is more lit-

eral, with bells, anvils, horses' hooves, and ticking clocks. Some of his favourite films, for sound of course, are the Star Wars films, and *Bladerunner*.

The sound is almost the last department to work on a film, so they begin when the deadline is very dead, and when the budget has been stretched. "It's a fun industry, it can be very stressful," he said. "It can play havoc on your personal life and your social life, like weekends, and late nights. And dealing with egos because we're dealing with directors, and actors."



Pro Talk (continued)

Jeff Cripps from A# SHARP RECORDING STUDIO says: "We do not offer packages. Getting the recording of a band right is an art in itself, but having to cope with C.D. packaging is too time consuming. It ends up detracting from what I'm doing - i.e. making a good recording."

Imagine this - I spend 5 years in a band, make my first C.D., and instead of my credit in the band being **Jeff Cripps** it is listed as **Jeff Crapps** - after 5 years I haven't even got a C.D. with my name spelt right!

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I can wizz out a project for a well rehearsed CD - 10 days recording and mixing - 2 weeks production ... under ideal conditions.

Do I do my own mastering? NO - and I actively discourage any client to go to a mastering suite that is connected to a recording studio - the longer I live the more I can hear the difference good mastering makes - only the places that are dedicated to mastering have the gear and the ear.

I don't want to go through the "pains and arrows of outrageous fortune" with a band or client for 3 months to perfect their songs only to have some mastering whiz kid totally alter what I've sweated over day and night, weeks and months.

interM

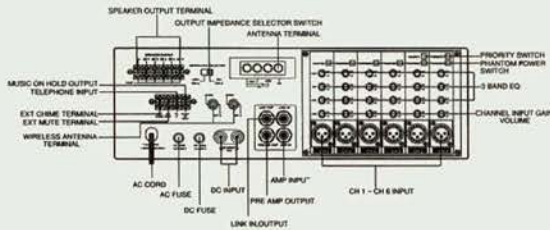
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Phone: (02) 417 1111 Fax: (02) 417 2394

New Zealand:
Magna Techtronics (NZ) Ltd.
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BASF NATIONAL TRACKING GUIDE

ARTIST PRODUCER ENGINEER PROJECT

New South Wales

A#Sharp Jeff Cripps (02) 534 4440 24 Track 1*
 The Burgstrums Kent Stedman Kent Stedman CD
 Elmore Fudd Jeff Cripps Jeff Cripps Demo
 Bart Willoughby Kevin Stanton Jeff Cripps Tracking
 Jason Jackson Jeff Cripps Jeff Cripps Backing Tracks
Bush Tracks Ruth Miller (066) 891 290, 24Track Recording and Multimedia
 Shaman Brad Wann/Highet Dave Highet Single
 Spiffmasters Tonkin/Major/Highet Dave Highet CD-Plus Album
 Kym Pitman Pitman/Highet Dave Highet Album
Charing Cross Studio David Sykes (02)387 8362 - 24 Trk Neve 8000 Series
 Growl Peter Jones Peter Jones EP Mixing
 Tweezer Matt Maddox Keith Cooper EP Mixing
 Knievel Wayne Connelly Peter Jones Album Track/Mix
 Little Hornets Craig Beck Peter Jones Album Mixing
 Doug Trumpet Martin White Peter Jones Album Mixing
 Dave Sykes Andy Wallace Rolf Harris Cowyard Hits of the '70s
Cloud Studios Parris MacLeod (043) 532 429, 32 Dig. 48 Analogue Automated, Hard Disc Editing/Mastering
 Amsterjam Parris Macleod Parris Macleod Album Mix
 Bliss Loche Magoo Loche Magoo EP Mix
 What's Next Band Parris Macleod Jetty Comp. Winners
 CC Area Health SVC Peter Holloman Kim Lemky Video S/Track
 13 Parris Wait for this one!
Crystal Clear Studios Dave Tozer (02) 684 1152 24 Tk. Dig. Adats & BRC, 32 Ch. (66input) Console
 Eternity D.Tozer/Don Dave Tozer Album
 Brian Anderson Dave/Brian Dave Tozer Demo
 Stonehenge Dave Tozer Dave Tozer Demo
 A.D. Dave Tozer Dave Tozer Album
 Barnstorming Dave/Band Dave Tozer Demo
 Wired Dave Tozer Dave Tozer Demo
Damien Gerard Studios Contact Marshall (02) 660-8776 2 x 32/2' 24 Track
 Custard Band Joe Malone Album Trks
 The Boobs Band Russ Pillings GYO II Trks
 Big Joe Rumble Nick Mainsbridge Nick Album
 Fendahlene Band Howard EP/GYO II Tks.
 Sugarmoth Canter Jackie GYO II Trks
 Humpback Ian Russell EP
Enrec Studios Steve Newton (02) 9858 2686, Demo studio - 8 Track Ampex/Hard Drive and Midi
 Bill Campbell S. Newton S. Newton Demos
 Julia Starr S. Newton S. Newton Demos
 Steve Boyd Giles Smith Newton/Aitken Road Tape (CD)
 John Williamson Phil Matthews Steve Newton EP/Single
 John Williamson Phil Matthews Steve Newton Radio Ads for Touring
Festival Studios Catherine Knapman (02) 660 4022 2 x Analogue Multi-Tracks or Digital Multi-Track
 Mental as Anything M.Thomas/Band Mark Thomas Single/Tracking & Mixing

Anthony Field Ralph Lane Kathy Naughton Tracking
Glebe Recording Studio Chris Deegan, (02) 9692 9399, 24 Track, 36 Channel
 Col Joye Marriot/Joye Deegan/Vidale Album
 Thami Deegan/Band Chris Deegan Tribal Dance Remix
 Bass Age Deegan/Xhian Chris Deegan EP
 Audio Image Noel MacDonald Deegan/G.King Advertising
 Shot to Pieces David Jacobsen David Jacobsen Album
 Vulcan (Gadiator) Cliff B/Chris D. Chris Deegan Single
Infinity Digital James Novak (02) 9672 3513 Digital Recording, Midi, Post
 Olaf John Groovetown/Artist James Novak Orch.Tracking
 Power Rangers Lorry Dercole James Novak Post. Mix, Tracking
 Olaf John Groovetown/Artist James Novak Voice Tracking
 Tina Petroni Tina James Novak Transfers
JMF Sound Studio Fran Esther (02) 9790 4097
 Stoker Band Ralph Esther Demo
 S.W.Syd.Health Promo. Band Ralph Esther CD
 Sproule Band Ralph Esther Demo
Main Street Studio Rob Specogna 042 834 515, 16 Track
 Deliberate Strangers Rick Bailey D.Hodges/Rob CD Album
 John Broomhall John B.Robertson/Rob CD Album
 Northern Suburbs Band Rob Specogna CD Album
 Gairden Cooke Gairden Cooke Rob Specogna CD Album
 Freeway Freeway Rob Specogna Demo
 Finn Castle Mill Rob Specogna Rob Specogna CD Album
Megaphon Studios Guy Dickerson (02) 9550 6576 24 Track & 48 Trk Analog.
 J.Rhodes/A. Lee Jamie Rhodes Brett Lunney Tracking
 Casey Green Julian Lee Guy Dickerson Album
 Renaissance Players Winsome Evans Guy Dickerson 3 x Albums
 Carlo Gialco Carlo Lachlan Mitchell Advertising
Nu-Town Studio Greg Hopping (02) 9516 3306, 16 Trk. Analogue, 16 Trk. Digital Mix/Radio Edit
 Dungeon T.Grose/M.Worrall Mark Album - Japanese Release
 Shield G.Hopping/K.Nevin Mark Worrall Single
 ELE Hopping/Worrall Mark Worrall Demos
 Vince Sorrenti Hopping/Ciccione Mark Worrall Single
 Song First Prod. Sam McNally Mark Worrall Jingle
 Lixivius M.Worrall/Band Mark Worrall Demos
Paul Bryant Mastering Paul Bryant (02) 9748 0222, Mastering Suite
 Gashammer Greg Clark Paul Bryant New Demo
 Dave Warner Martin Cilia Paul Bryant Restoration
 Dinesh Dinesh Paul Bryant CD Album
 Swing Team Mark Jackson Paul Bryant CD Mini Album
 Memphis Outlaws Eddy Fraser Paul Bryant CD Album
 Don Morrison Don Morrison Paul Bryant CD Album
Powerhouse Studios Doug Henderson (02) 9318 1220 32 Input Neve Console 24 Trk.Studer A800
 Dark Order Band Gavin Duffield Album CD
 John Rowles Berger/Henderson D.Henderson CD Album
 Bliss Lachie Magoo Magoo/N.Sanning CD Album



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UNLIMITED SOUND

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ARTIST	PRODUCER	ENGINEER	PROJECT
Dry	Band	Nik Sanning	EP CD
Laika	Band/R.Pilling	R.Pilling/N.Sanning	CD Album
Bullrush	Band	John Darwish	CD Album
Q Recording R.Muecre/G.	Sullivan (02) 9212 4851, 24 Track	Recording + 02R Digital	
Sydney Welsh Choir	Margaret Hughes	Richard Muecre	Album
The Clouds	Tim Whitton	Tim Whitton	Album
Red Rivers	David Price	David Price	Album
Tim Finn	Tim	Richard Muecre	Charity Single
Susan Whytze	N.Mainsbridge	Nick	Demos
Red Neck Mothers	Mal Baker/D.P.	David Price	Tracking
Rockinghorse Studio Grant	Hilton (066) 884 131, 48 Trk. Analogue, 24 Trk. Anabgue		
Majik Lift	Murray Burns	Keith Williams	Album
Wild Magnolias	Peter Noble	Greg Courtney	Album
Freaks of Nature	Leigh Ivan	Leigh Ivan	Album
Grinspoon	Grinspoon	Greg Courtney	Demos
Hey Rhino		Keith Williams	Demos
April	Greg Courtney	Greg Courtney	Album
Sony Ross Ahern (02) 9332 0320	24 Track/ProTools		
Human Nature	Paul Begaud	Simon Tonx	Mixing, Single
Chicken Skin	S. Tonx/Band	Simon Tonx	Rec/Mix CD Album
Joy Yates	David Macrae	Ross A'Hearne	Rec/Mix Album
Dead or Alive		Louise Taylor	Edit Video Clip
Deep Forest	Deep Forest	Todd Deeley	Editing Concert Trks.
Sound Level John Scane	(02) 9552 3200, 16 Track Digital Hi-8		
John Field	Jordan Brebach	Jordan Brebach	16 Track Album
Annette Crowe	Randy Franz	Randy Franz	Tracking
Dave Stein	Dave Stein	Dave Stein	Tracking
Brendan James	Dave Rashleigh	Dave Rashleigh	Live to DAT
Full Metal Esky	Dave Rashleigh	Dave Rashleigh	Live to DAT
Colin Bloxom	Colin Bloxom	Colin Bloxom	Solo Pedal Steel Trilogy
Soundwarp Meredith Brooks	(02) 9905 7144 Mastering		
Hey Charger!	Al Creed	Meredith Brooks	Album CD Master
Funky Do-Daas	Terry Morton	Meredith Brooks	Album CD Master
Moniker	Stewart Nestel	Meredith Brooks	Album CD Master
Nadia	Luke Jacks	Meredith Brooks	CD Single
Carlo	Carlo	Meredith Brooks	Album CD Master
Amir Kueswoyo	Aries	Meredith Brooks	CD Master
Studios 301 Fiona Simpson	(02) 9217 7701, X880, Studer A800, SSL 64 Ch, G-Series		
The Clouds	The Clouds	Don Bartley	New Album/Mastering
Regurgitator	Magoo	Steve Smart	New EP Mastering
Automatic	Nick Launay	Steve Smart	New Album Mastering
Def FX	Sean Lowry	Steve Smart	New Single Mastering
Triple J Unearthed	Phillip McKellar	Don Bartley	New Album Mastering
Ed Kuepper	Ed/Phil Punch	Don Bartley	New Single Mastering
Studio Arts Productions Ed Lee	(042) 849 123 Independent Studio		
P. Harness	Ed/Band	Ed Lee	Album Tracking
Grail	Ed/Band	Ed Lee	Demo
Institute of Learning	Main Artery	Ed Lee	Radio Promo
Fifth Sun	Ed/Band	Ed Lee	Album
Movement	Ed/Band	Ed Lee	Album
Trackdown Digital Marcus Leadley	(02) 9550 6890, 24 Track Adat, 16 Track ProTools		
Lee Cutelle		Katrina Schiller	Single
Limelight Medium	Matthew Denton	Simon Leadley	Interactive Audio Presentation
Arizona Productions		Simon Leadley	Commercials
Amanda Hughes		Torei Lista	Demos
Yoram Gross Film Studio		Tim Ryan	Audio Post/Skippy
Mardi Gras		Katrina Schiller	Sleeze Music
Troy Horse Colin Wright	(02) 319 1799 or 0412 240 000, 24 Track 2"		
Magic Lunchbox	Band	Ramesh Sathiah	Album
Tokacross	Band	Mickey Levis	Album
AnD	Band	Colin Wright	Album
Caiseal Mor	Peter Kennard	Colin Wright	Album
Phillips Internat. Language School	Helene Corthals	Colin Wright	Language Course
Dr. Raju	Colin Wright	Colin Wright	Album
Velvet Sound Rec. Studios Dave McCunn	(02) 9264 3420, 32 Ch. 24 Trk. 2" Analogue		
Bon Scott	Ted Yanni	Adrian Grigorieff	Re-Mixing
Relish	Band	Tony Wall	Demos
Deluxe	Tim Rodgers	Jason Blackwell	EP
Mr. Blonde	Band/Tim	Tim Whitton	Tracking
Tex Perkins	Simon Day	Tony Wall	Tracking
Skunkhour	Band	Tony Wall	Demos
Wirra Willa Studios Will Rout,	(02) 9605 1203, 24 Track Analogue @ 2 x 8 Track Digital		
Fab Manzini	Fab	Will Rout	Album Tracking
Loaves & Fishes Orchestra	Stev Gorringe	Ian Cooper	Album
Stuand Phil	Phil Baccque	Ian Cooper	Album
Stone Cold Sober	Dr.Miklos Keretz	Ian Cooper	Mastering

Campbelltown PA H/School Mark McDermott	Ian Cooper	HSC Demonstration Track
World Star	Andy Zarin	Mastering
Queensland		
Brisbane World Record Studios Duncan Wood	(07) 3832 2330, 24 Track ADAT Studio	
Allan Cameron	Duncan Wood	Album
SIS	D.Wood/Band	Duncan Wood
Shebeen	D.Wood/Band	Duncan Wood
Greg Coulsen	Greg Coulsen	Glen Scott
Voices Carry	Wal Newbigging	Duncan Wood
OPM Studios Daniel Seymour	(07) 3374 1668, 24 Track Using Adats & Mackie Console	
Crop Circles	Ian Thompson	Joe Malone
Nutmeg	Ian Thompson	Daniel
Feebles Junky	Band/Daniel	Daniel
Purple Avengers	Band/Daniel	Daniel
Small Fantasy	Bob Moore	Daniel
Subterraneans	Band	Daniel
Prodigious Audio Richard or Marty	(07) 5571 1400, 24HD/16D. Digital Automated Mixer	
Castlemaine XXXX	Webster/Spinks	Marty
Untouchables	Band/Marty	Marty
S.T.C.	Richard	Richard/Marty
Michael White	Michael/Marty	Marty
Michael White	Michael/Marty	Marty
Soul Studio Daniel Winter	(07) 5592 2222 24 Trk. Dig. Tape	Mac Hard Disc Rec. Radio/TV Prod.
Bitter Fit Crack	Self Produced	Mick Stills
Jason Mackle	Mick Stills	Daniel Winter
Lisa Fairchild	Mick Stills	Stills/Winter
Sunshine Studios Leon	(07) 3844 6844, 36 Channel Neve	
China Rhino	Leon Prescott	Leon Prescott
Webster	Mark McElligott	Mark McElligott
Cardigan	Mark McElligott	Mark McElligott
ISIS	McGoo Music	McGoo Music
Loud Eyes	Mark McElligott	Mark McElligott
Taramalin Studio Allan Lahey	(07) 3208 9736	
Ex-DNA	Band	Allan Lahey
Hotshotz	David & Michael Thompson	Allan
Cold Comfort	Band	Allan
Dancing Tivoli Theatre Show		Trevor Green
S/Track for Show		
Big Tuna	Band	Allan
The Snow Fun Factory	Allan	Allan
Vandersound Studios Eric Vandersande	(07) 5546 8100, 24 Trk. ADAT/XT, HDR, 02R, CD-R, Multimedia	
Web Site www.vandersou.r.d.com.au		
Warren Winter	Eric	Eric
Steve Mills	Eric	Eric
Lachlan Blundell	Eric	Eric
Evonne & The Coolcats	Eric	Eric
Ben Burton	Eric	Eric
Threshold	Eric	Eric
South Australia		
Agrofish Studio Andrew Bayfield	(08) 8223 7211, 16 Track Digital, 16 Analogue, Automated Mix.	
Musicshop	Rob Pippan	Andrew Bayfield
Musicshop	Rob Pippan	Andrew Bayfield
Humphrey B.Bear	Rob Pippan	Andrew Bayfield
Beak Music Nigel Sweeting	(08) 8233 7271, 16 Track Digital, Automated Mixdown	
Andrew Bunney	Andrew Bunney/Beak	Nigel Sweeting
Ganga Giri	Ganga Giri/Beak	Nigel Sweeting
Disk Edits N. Clark	(08) 343 1377 Editing & Mastering	
Grimple	Band	Neville Clark
Sthn.Heritage Singers	B.Smith	N. Clark
Snook	Band	N. Clark
Ben Hugh's	Ben Hugh's	N. Clark
Swerve	S.Fieldhouse/Band	A. Mazzone
Dirty House Records	Theo	A. Mazzone
Mixmaster Productions Mick Wordley	(08) 8278 8506, 24 Track 2"	
Sin Dog Jelly Roll	Mick/Band	Mick Wordley
Helga	Helga/Mick	Mick Wordley
Fuzzy	Band/Mick	Mick Wordley
Honey Fix	Band/Mick	Mick Wordley
Travis & The Heeler	Les Karski	Mick Wordley

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STUDIOS

Our Tracking Guide seeks up to date info each month at no cost to you.

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ARTIST	PRODUCER	ENGINEER	PROJECT
Victoria			
C'est Ca Norman James (03) 9419 1506	Automated 24 Track		
Cosmic Party	N. James	Genevieve Coath	Girl Zone Album
Meg Macdonald	Tony Hargraves	Genn Coath	Album
Eleanor Raynor	N. James	Genevieve Coath	Girl Zone Album
Electronic Music Productions	Neil Goudge (0412 363630, 16 Track 1" Studio, 8 Tracks Hard Disk		
Roy Kent	Neil Goudge	Neil/A. Meakes	Album
Ches Haynes	Neil/Ches	Neil/A. Meakes	Album Mastering
Oscar Swaru	Neil	Tom Travecki	Live Comedy
Sam Newman/Doug Hawkins		Neil	
Footy Shows Live			
Sharon Benjamin	Neil	Neil/A. Meakes	Album
Miri More	Andrew Meakes	Andrew Meakes	Demo
Fortissimo	Andy Sarah (03) 9699 5811, 24 Track Analog/Automated		
John Danyi	John/Andy	Andy Parsons	Album Tracks
Vic. Police Band	M. Pyne	Andy Parsons	Album Mix
Bruce Haynes	G. Lee	Andy Parsons	Compilation Track
M. Brady	Mike	Melita Jagic	Commercials
C. Copping	Chris	Melita Jagic	Commercials
Megan Heyward	Phil Kakulas	Melita Jagic	CD ROM S/Track
Kiss Music Recording Studios	Paul Kosky (03) 9827 1500 SSL Console, 48 Trk. Digital		
N.I.L.	Paul Kosky	Paul Kosky	EP Mix/Record
Jeff Wright	J. Wright	Andy Baldwin	Album Recording
Jeff Wright	J. Wright	John French	Album Mixing
The Truth	Craig Portells	Craig Portells	Album Mixing
RB-X (Aust) P/L Bevan Queihurst	(03) 9429 6199 24/48 Track SSL Cons.		
David Hirshfelder	D.Hirshfelder	Ross Cockle	Crown Casino Project
Sam See	Sam See	Mark McDougall	TV Jingle
Bob Valentine	John McCall	Ross Cockle	4 Track CD
Spotlight	Mark McDougall	Mark McDougall	Radio Ads
Greg Champion	Greg Champion	Adam Quaife	Christmas Album
St. Andrews Recording	Mark McCormack (03) 9583 2341		
Harvest Christ Life Centre	Peter Keeley	Mark McCormack	Album
Etheral Scourge	Mark McCormack	Mark McCormack	Album
Bengal Tigers	Mark McCormack	Mark McCormack	Album Tracks
Studio 52	Paul Higgins (03) 9417 7707 Studio A - 32 Tk. Studio B Adat 16 Tk		
Gecko Films	Elizabeth Drake	Trevor Carter	Film S/Track
Arena Theatre Co.	Hugh Covill	Trevor Carter	Theatre Backing Track
Marget Gheorghiev	Petrev Gheorghiev	Trevor Carter	Album of Harp Music
Flaming Hailstones	The Band	Trevor Carter	Album (Tracking Only)
MR.	Simon Segal/Trevor	Simon/Trevor	Song for Nu-Music Series #13
Anxiety	The Band	Frawley/Jarl/Carter	Album
Supersonic Sound	Dave Hannan 0419 349 618, 24 Track ADAT		
Meg Kirby	David Hannan	David	Album
The Changing	Leigh Underhill	David Hannan	Album
Lewis & Young	David Hannan	David	Album
Shoestring Theatre	Di Woodhouse	David Hannan	'Hair' S/Track
Chicken Honolulu	David Hannan	David	Comp. CD

True Form Music Services	Neil Gray 0500 509 509, 20 Tk. (12 Analogue, 8 Digital)		
Star Seven	Band	Neil Gray	Demo EP
Royal Melb. Show	Angus Davidson	Ross O'Driscoll	Voice Overs
Soul Bleeder	Neil Gray	Neil Gray	EP
Ausmusic Hotel	Paul Backera	Neil Gray	Radio Program
The Scotter Generation	Claire Heywood	Neil Gray	Backing Tracks
Wombat Road Studio	(051) 454204 Barry Clissold 24 Trk. Plus full Midi Facilities		
A Tractor Prod	Brian Baker	Brian Baker	Jingle Prodn.
Lindsay Hammond	G & L Hammond	Barrie Clissold	Album Tracking
Peter Chivers	Peter	Barrie Clissold	Demo Tracks
John Mazur	John	John	Album Tracks
Wayne Perry	Wayne	Barrie Clissold	Demo Tracks
Brian O'Keefe	B. Clissold	Barrie Clissold	Sound Effects
Western Australia			
Tropo Sound	Mick Connolly (091) 922 394 24 Track Dolby		
Pigram Bros	Alan Pigram	Brett Lyons	Album
Shoveller Band	Band	James Edwards	Album
Nindji Windji		James Edwards	Compilation
Witzend Recording Studio	Alan Dawson (09) 3311818 16 Track		
Greg Huntley	Greg/Alan	Alan Dawson	Single
Melissa Banes	Melissa/Alan	Alan Dawson	Sound Track
Foil	Band	Alan Dawson	Demo

Northern Territory

Masters Studio & Production	Lindsay Masters, (089) 321 754		
Russell Blacker	L. Masters	L. Masters	CD
Karen O'Shea	L. Masters	L. Masters	Demos

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BUYERS GUIDE

LOUDSPEAKER SYSTEMS

Each month we feature different products from the world of entertainment technology. Each distributor is invited to list four representative models in each category. Prices include tax, and were current at 01 September 1996.

LOUDSPEAKERS UNDER \$1500

AMPOWER Amps Unlimited (03) 9357 8580

AB102 100 Watt 10" bass driver, 180mm x 75mm Piezo. High frequency horn (2 way) 400H x 310W x 240D. Black carpet finish, steel mesh grille. Top Hat stand base, Jack connectors. \$325.00

DL1222 200 Watt, 2 Way system with 12" Lorantz bass driver and 270mm x 100mm Foster high frequency horn. Box size 540H x 410W x 300D. Black carpet finish, steel mesh grille, Top Hat base, Jack/XLR Connectors. \$575.00

AM1525 500 Watt 8 Ohm 2 Way system with 15" Eminence bass driver and 270mm x 100mm Foster High frequency horn. Box size 610H x 520W x 365D. Black carpet finish, steel mesh grille, Top Hat base. Jack/XLR Connectors. \$525.00

VS.1222 400 Watt "Venue Series" 2 Way system, 12" Lorantz Bass Driver and Lorantz 1" throat titanium horn driver. Box size 615H x 386W x 358D. Black carpet finish, steel mesh grille. \$1200.00

ARX SYSTEMS ARX Systems P/L (03) 9555 7859

Ambience 1 1 x 135mm Woofer, 1 x 18mm soft dome tweeter, H: 225 x W: 150 x D: 150, 100 watt program power, push button terminals, 89dB 1W/1M. \$137.50

Ambience 5 1 x 200mm Woofer, 1 x 25mm soft dome tweeter, H: 400 x W: 260 x D: 220, 200 watt program power push button terminal 92dB 1W/1M. \$327.50

Micro Max 1 x 200mm woofer, 1 x 25mm ferrofluid cooled titanium tweeter, 2 XLR inputs, 92dB 1W/1M. \$587.00

Micro Max Sub 2 x 200mm woofers, 1 x XLR input, H: 770 x W: 330 x D: 410. 95dB 1W/1M. \$832.00

CARLSBRO F. Payton & Son. (02) 9439 1822

Beta 115 A 300 watt P.A. cabinet loaded with a 15" Celestion speaker and Constant Directivity Horn. H: 670mm x W: 490mm x D: 330mm. Weight 27kg. \$1012.00

Delta D112 A 300 watt compact P.A. cabinet featuring a 12" cast chassis loudspeaker, a Bi-Radial Horn and High Frequency Bullet Tweeter. \$1310.00

Alpha AX115 A 200 watt cabinet featuring a 15" Celestion speaker and Constant Directivity Horn. H: 625mm x W: 470mm x D: 345mm. Weight 19.2kg. \$782.00

Alpha AX215 A 300 watt P.A. cabinet featuring 2 15" Celestion speakers and a constant directivity horn. H: 1020mm x W: 530mm x D: 490mm. Weight 37kg. \$1225.00

CELESTION Electric Factory (03) 9480 5988

CR102 10", 2 Way system with high frequency horn loaded tweeter. Two hunched watts @ 8 ohms. \$699.00.

CR122 12", 2 Way system with high frequency horn loaded tweeter. 250 Watts @ 8 ohms. \$799.00

R1220 Road Series 2 way, 12" enclosure 250 watts @ 8 ohms. 1/4" + Neutrik speakers, connectors. Weighs 12 Kg. \$1199.00

R1520 2 Way, 15" enclosure features 1/4" Neutrik Speakers and is rated at 300 watts @ 8 ohms, weighs 13 Kg. \$1499.00

CERWIN-VEGA! Ashton Admor P/L (09) 478 3800

12" Woofer 2" V.C., H25 Compression tweeter, 667 x 438 x 336mm, 200 watts, 98dB at 1W/1M, 6mm Jack connectors, 120dB at rated input, 16.6Kg carpeted PA/Keyboard/Playback selectable. \$767.00

V15B 15" Woofer 3" V.C., H-25 Midrange Horn flare, compression horn tweeter, 737 x 476 x 432mm, 200 watts, 100dB at 1W/1M, 6mm Jack connectors, 122dB at rated input 22.5Kg carpeted 3 Way PA/Keyboard/Playback selectable. \$1023.00

M1-MID-TREBLE 12" Woofer 2" V.C., H-25 compression tweeter, 387 x 552 x 380 carpeted cabinet, 150 watts E1A, 100dB sensitivity 1W/1M 6mm Jack Cons. 18Kg Mid-treble often used with L-36-PE \$2742.00, Portable Earthquake bass. \$777.00

PROSTAX 10 SERIES II 10" Woofer 2" V.C., 1" Horn loaded tweeter, 457 x 355 x 337mm Trapezoidal 300 watts, 101dB sensitivity 1W/1M, Speakon Connectors, 128dB at rated input, 14Kg Tolex vinyl covered sound reinforcement speaker. \$1118.00

DAS Magna Systems (02) 9417 1111

Factor 6 Frequency response 70-20kHz. Low end 6" loudspeaker. Power handling RMS 80W, Top end 1" soft dome high frequency unit, Program power 160W, High frequency unit. Sensitivity (2.8V/1M) 90dB SPL, Impedance 4 ohms, Polypropylene Cabinet, Size 23mm x 16mm x 15mm. \$209.00

Factor 8 Frequency response 45 Hz-20kHz, Power handling RMS 100W, Program power 200W, Sensitivity (2.8V/1M) 91dB SPL, Impedance 8 ohms, Low End 8" loudspeaker with 38mm coil. Top end 1" soft dome high frequency unit. Polypropylene Cabinet, Size 44 x 27 x 23mm. \$387.00

MI-8 Frequency response 50Hz - 20kHz, Power handling RMS 150W, Program power 300W, Sensitivity (1W/1M), 93dB SPL, Impedance 8 ohms, Low end 8" loudspeaker with 38mm coil, Top end 2" Titanium compression driver. Polypropylene Cabinet, Size 44 x 27 x 23mm. \$490.00

MI-12 Frequency response 40Hz-20kHz, Power handling RMS 300W, Program Power 600W, Sensitivity (1W/1M) 98dB SPL, Low end 12" loudspeaker with 77mm coil. Top end 2" titanium compression driver. Polypropylene Cabinet, Size 58 x 40 x 31mm. \$999.

EAW, Eastern Acoustic Works Production Audio Services P/L (03) 9415 1585

FR 102HR 2 - Way, full range cost effective loudspeaker system. 10" LF with 1" compression driver. Dispersion 90 x 45. 12" version (FR122H) & 15" version (FR152H) available. \$1360.00

JF50 Ultra compact Hi-Def 2-Way full loudspeaker system. Dual 5 1/4" LF & 1" soft dome. Dispersion 120 x 80, max peak output 112dB SPL. \$925.00

JF60 Ultra compact Hi-Def 2-Way full range loudspeaker system. 6.5" LF & 33mm soft dome on a wave guide. Dispersion 120 x 120, max peak output 111dB SPL. Dual 6.5" version (JF80) available. \$1165.00

UB12 Ultra compact nearfield reinforcement system. Single 4 5/8" LF & 1" soft dome. Dispersion 120

x 120, max peak output, 113dB SPL.

ELECTROVOICE

Mark IV Audio (Aust.) P/L (02) 9648 3455

S40/S40T Ideal for both studio & sound reinforcement, delivering surprising low end as well as accuracy at all frequencies. 4 1/2" woofer, soft drive tweeter. Features Pro™ circuit protection, 160W long term, 640W short term. Available in black or white. (85dB 1W/1M) \$344.50

560/560T S60 compact speaker system available in black or white. Includes 6.5 inch direct radiating woofer in a vented enclosure and a one inch tweeter with Director™ dispersion control. Features auto-resetting protection. 100W long term 400W short term. (88dB 1W/1M) \$599.00

S80 2-Way constant directivity system. Compact package. High in both sensitivity and power handling. 8" woofer and 1" tweeter. 100W long term, 400W short term (91dB 1W/1M) \$699.00

SX100 Easily arrayed, stacked or stand mounted. Features 12" EVG woofer and 1" compression driver with pure titanium diaphragm. 65° x 65° constant directivity. 200W long term, 800W short term. (99.5dB 1W/1M) \$999.00

ESP TECHNOLOGIES ELSTA (02) 9568 2100

LSUB400 ESP Sub bass bin loaded with ESP 15" 800W Bass driver, 50 Hz resonance, Band-pass computer designed technology, made in Australia. XLR canon inputs. \$1045.00

FRB15 Trapezoidal full range/mid-range DUAL application. Single 15 inch and horn, 600W loud speaker box. XLR canon connectors. \$999.00.

L2212 ESP Lorantz Loaded double 12 and horn speaker 400W, front loaded, canon XLR input. Full range, with carry handles. \$595.00

L1112 ESP Lorantz Loaded single 12 and horn speaker 200W, XLR canon input. Full range, lightweight, with carry handles. \$399.99

FENDER Fender Australia P/L (02) 9666 5077

112 ELC 200W Program, 12" Eminence speaker & dual Piezo horn, carpet covered, trapezoidal shape, stand mountable, parallel input jacks. 1 Year Warranty. \$599.00

115 ELC 300W Program, 15" Eminence speaker & dual Piezo horn, carpet covered, trapezoidal shape, stand mountable, parallel input jacks. 1 Year Warranty. \$699.00

1211 Mk II 300W Program, 15" Eminence speaker & 1" compression driver. Carpet covered, full range or bi-ampable, 1/4" jack inputs stand mountable. 1 Year Warranty. \$999.00

1225 Mk II 400W Program, 15" Eminence speaker & 1" compression driver full range or bi-ampable, 1/4" jack and Speakon inputs, Linkwitz Riley cross over, stand mountable, carpet covered. 1 Year Warranty. \$1399.00

KUSTOM Electric Factory (03) 9480 5988

KSC10 60 watts RMS/120 watts program. 1 x custom 10" woofer, 2 x 5" piezo horn, 1 3/8" speaker mount. \$159.00

KSP1 SYSTEM 1 x KPM4360 Powered Mixer 0 60 watts, 2 x KSC 10 Speakers, 2 x Speaker cables. \$679.00

MARTIN AUDIO A.R. Audio Engineering (02) 9810 5300

EM15 2 x 5" ICT (Inductively Coupled Transducer) 2-way trapezoidal miniature PA speakers. 113dB peak SPL. Unblowable HF Driver. White/Black.

RAMSA WS-A80E



OmniMount Fittings. Sub-Woofer Option. \$397.50

EM25 8" 2-way trapezoidal PA speaker with 1" Compression Driver/CD Horn. 117dB peak SPL. 70Hz-18kHz. OmniMount Fittings. Sub-Woofer Option. \$995.00

ICT300 2 x 10" ICT 2-way PA speaker. 125dB peak SPL. Unblowable HF Driver. 55Hz-18kHz. OmniMount Fittings. Sub-Woofer Option. M1 Controller Required. \$1495.00

PAS Australian Monitor P/L (02) 9874 9355

TARGET T1200 2 Way full range speaker system featuring 12" woofer and Phenolic diaphragm compression driver. 98dB/1Watt @ 1 Metre, 140 watts continuous, 560 watts peak. 8 Ohms, Trapezoidal 610 x 381 x 406mm. \$915.00

TARGET T1500 2-Way full range speaker system featuring 5" Woofer and Phenolic Diaphragm compression driver. 98dB/1Watt @ 1 Metre. 140 Watts continuous 560 watts peak. 8 ohms, Trapezoidal 711 x 457 x 483mm. \$1170.00

PEAVEY Australis Music (02) 9698 4444

1120C 75W RMS, 12" Woofer, CDM Horn, Ultra light weight, 7-17kHz, 12Kgs. 8Ω. \$499.00

115DL 15W RMS, 15" Scorpion Woofer, CDM Horn, 60-17kHz Two speaker jacks, stand adaptor, 8Ω. \$729.00

SP5G 25" RMS, 15" Scorpion plus woofer, 22XT Horn, (Compression driver) Sound guard, Horn Protector, Trapezoidal shape. \$959.00

SP2G 30" RMS, 15" Black Widow Speaker, 22XT Horn, Sound Guard, Speaker protector, Trapezoidal, 100dB (1W-1M) \$1199.00

RAMSA Ramsaudio P/L (02) 9477 7377

WS.A200E 12" Woofer, 1" Tweeter, 250W Continuous, Parallel jack or wire connectors, Injection moulded box, black or white. Dimensions : W:395mm x H:577mm x D:273mm, 70Hz to 20kHz. \$1238.00

WS.A80E3 Woofer, 1" Tweeter, 160W continuous, parallel jack or wire connectors, injection moulded box, black or white. W: 434mm x H: 282mm x D: 237mm, 65-hz to 20kHz. \$596.00

WS.A35 8" Woofer, built in 90° constant directivity horn, 8 ohms, push wire terminals, 140W continuous, moulded resin enclosure. 80Hz to 20kHz. Shielded magnet. \$549.00

WS.A10 5" Wide range, injection moulded, parallel jack or push wire connectors, shielded magnet, 50Hz to 20kHz, black or white. \$123.00

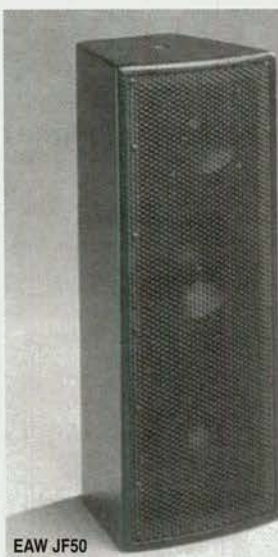
RCF Mustronics Australia (07) 3822 3906

Monitor 3 3" Driver 3 Litre cabinet 30 Watts 107dB 120-20000 Hz, Push Connectors. \$199.00

Monitor 4 5.5" Driver, 3/4" Mylar Tweeter, 4.5 Litre Cabinet, 63 Watts 108dB. 55-25,000 Hz. Push on Connectors \$333.00

Monitor 5 5" Driver 19mm Mylar Tweeter, 4.5 Litre Cabinet, 75 Watt 112.5dB, 55-25,000 Hz. Gold Plated Terminals. \$443.00

Monitor 8 3" Driver, 25mm Titanium Tweeter, 20 Litre Cabinet. 300 Watt 118dB, 42-25,000 Hz. Gold



EAW JF50

BUYERS GUIDE: LOUDSPEAKER SYSTEMS

Plated Terminals and Neutrik Connectors. \$930.00

SESSION *Electric Factory (03) 9480 5988*

SBE112H 1 x 12" with horn, front of house enclosure. Rated at 100 watts with built in crossover. \$399.00

SBE115V 1 x 15" Speaker plus 40 watt horn. Rated at 125 watts with enhanced mid range for vocal use. \$499.00

SBE115D As for SBE115V but with enhanced bottom end for dance music/keyboards etc. \$499.00

YORKVILLE/ELITE *Dynamic Music. (02) 9939 1299*

EX-161 2 Way, 160 Watt, 8 Ohm Cabinet. 10" RCF Woofer, with RCF Horn. Integrated driver protection. Black carpet covering over 3/4" plywood construction. Dimensions (cms - DWH) 35 x 37 x 46. Weight 15 Kg. \$895.00

EX-350 2 Way, 350W 4 or 8 Ohm Cabinet. 12" B & C Woofer with a Yorkville horn. Trapezoid design, heavy grade metal grille and Speakon connectors. As with all Yorkville gear a 2 year unconditional warranty applies. \$1495.00

JBL *Jands Electronics (02) 9516 3622*

CONTROL 1 Personal Size 2-way System, 135mm LF, 18mm Polycarbonate Dome Tweeter, Moulded Enclosure, Shielded Magnet - Black. Also Control 5 (165mm 2-way) and Control 10 (300mm 3-way). \$375.00

CONTROL CONTRACTOR 23 89mm 2-way vented system. Paintable, weather resistant, 90° horn. Built in mounting hardware featuring the Invisiball™. 50W Power Capacity. Ideal for background music in restaurants, bars and retail shops. Also Control 25 (135mm 2-way) and Control 28 (200mm 2-way).

\$298.00

TR 125 2-way Vocal/Music Reinforcement System, 380mm SHG LF Transducer, Fluid Cooled Compression Driver with 25mm Titanium Diaphragm and Optimized Aperture Horn, Integral Stand Mount. Also TR225 (Dual 15" and Horn) and TR126 (Horn loaded 15" and horn). \$995.00

EON 15 2-way Non Powered Speaker System: 380mm LF, 90 x 60° Bi-Radial Horn, Moulded Enclosure, Stand Mount. Also EON 10 (10" 2-way) and EON 15P/10P powered versions with internal Bi-amps. \$1495.00.

LOUDSPEAKERS OVER \$1500

AMPOWER *Amps Unlimited (03) 9357 8580*

VS1524 800 Watt "Venue Series" 2 way system, 15" Lorantz bass driver and Lorantz 1" throat titanium horn driver. Box size 727H x 430W x 379D. Black carpet finish, steel mesh grille. \$1695.00

ARX SYSTEMS *ARX Systems PL (03) 9555 7859*

Power MAX 1 1 x 300mm woofer, 1 x 25mm ferrofluid compression driver, 2 x XLR connectors. H:585 x W: 380 x D: 380 trapezoidal, 99dB 1W/1M. \$1566.00

Power Max 2 1 x 380mm Woofer, 1 x 25mm ferrofluid cooled compression driver. H: 763 x W: 445 x D: 414 trapezoidal 2 x XLR connectors. 99dB 1W/1M. \$1920.00

Thunderbolt 2 2 x 380mm woofers, 1 x 50mm compression driver. Active or passive operation. H: 1200 x W: 525 x D: 585, 2 x Speakon connectors. 106dB 1W/1M. \$3995.00

922 1 x 380mm Woofer, 1 x 300mm mid range (horn loaded) 1 x 25mm ferrofluid cooled compression

driver. H: 1000 x W: 515 x D: 580. 2 x EP4, 2 x XLR. 104dB 1W/1M. \$3720.00

AUSTRALIAN MONITOR *Australian Monitor PL (02) 9874 9355*

QMX DOUBLE 15 Full range concert system, vented, Quasi Bandpass/Double ended reactive loading enclosure. 2 x 15" woofer, 2" mid/high compression driver 105dB - 1 Watt/1 Metre, 136dB @ 1200 watts peak. 4 ohm, 1060 x 550 x 5700 (HWD). \$3025.00

QMX DOUBLE 12 As per QMX DOUBLE 15 but utilizing 2 x 12" woofers. 105dB/1 Watt/Metre. 133dB Peak @ 600 watts, 4 ohm, 870 x 380 x 460 (9HWD), Passive X-over, Dispersion = 60° Horizontal

tal x 40° Vertical. \$2420.00

QMX DS18 Double Bandpass sub-woofer cabinet. 2 x 18" woofers. 800 watts cont. 1600 watts peak. 110 dB @ 1W/1 Metre. 140dB Peak. 4 ohms, 1236 x 700 x 700 (HWD). \$3068.00

NRG500 2 Way (Passive) full range enclosure. Vented trapezoidal enclosure. 1 x 15" woofer, 1 x 1" comp. driver on 90 x 40 constant directivity horn. 99dB 1W/1Metre, 500 watts peak @ 126dB, 8 ohms, 710 x 480 x 400 (HWD). \$1715.00

CARLSBRO *F. Payton & Son. (02) 9439 1822*

De/ta D115 A 300 watt Cabinet featuring a 15" Cast Chassis loudspeaker and two Bi Radial Horns. H: 640mm x W: 473mm x D: 385mm. Weight 30.2Kg. \$1575.00

Delta D158 A 300 watt full range cabinet featuring 15" and 8" cast chassis loudspeakers and a bi-radial horn and Bullet Tweeter. \$1775.00

Delta D600X A 600 watt bass bin featuring two 15" Cast chassis loud speakers. H: 735mm x W: 625mm x D: 545mm. Weight 61Kg. \$1750.00

CELESTION *Electric Factory (03) 948 5988*

CX1520 300 Watts @ 8 ohms, 15" 2-Way enclosure with 5-Way binding posts and Neutrik speakers. \$1695.00

CX1522 As for the CX1520 but 500 Watts @ 8 ohms. \$2395.00

R1522 2 Way dual 15" enclosure. 500 Watts @ 8 ohms. This is a full range cabinet weighing in at 21 Kg. \$2249.00

R1542 Dual 15" Bass system. 500 W @ 4 ohms. \$1999.00

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BUYERS GUIDE: LOUDSPEAKER SYSTEMS

CERWIN-VEGA! *Ashton Admor P/L (09) 478 3800*

PROSTAX 12 SERIES II 12" Woofer 2" V.C., M-130 Mid 2" V.C., 1" Horn loaded ferrofluid cooled tweeter, 718 x 387 x 413mm, 450 watts, 102dB Sensitivity 1W/1M, Speakon connectors, 129dB at rated input, 28Kg Tolex vinyl covered trapezoidal flyable. \$1743.00

PROSTAX 15 SERIES II 15" Woofer 3" V.C. M-130 Mid 2" V.C., 1" Horn loaded ferrofluid cooled tweeter, 719 x 495 x 425mm, 600 watts, 101dB sensitivity 1W/1M, Speakon connectors, 128dB at rated input, 34Kg Tolex vinyl covered, trapezoidal flyable. \$2042.00

T36 INTENSE SUBWOOFER L1815 18" Elephant motor with 14Kg magnet structure in trapezoidal 914 x 609/330 x 914 carpeted flyable cabinet 1000 watts continuous 750 watt E.I.A. 108dB sensitivity 1W/1M, Speakon & Jack connectors, 136dB at rated input, improvement on the legendary portable earthquake. \$3181.00

T250 INTENSE 10" Pistonic driver in folded horn L.F., M-130 Mid 2" exit, 1" exit compression driver H.F. with 2" V.C., 711 x 520 x 533 trapezoidal flyable, 500 watts continuous, 250 watts E.I.A., 108dB sensitivity 1W/1M, Speakon & Jack connectors. \$2157.00

DAS Magna Systems (02) 9417 1111

RF115 Frequency RMS 50Hz - 20kHz, Power handling 500W (RMS), Program Power 1000W, Sensitivity (1W/1M) 98dB SPL, Impedance 8 ohms, Low end 15" loudspeaker, Top end 1" titanium, Cabinet size 76 x 52 x 42mm. \$1644.00

BASS 218 Frequency Response 45Hz - 250 Hz, Power handling (RMS) 1000W, Program Power 2000W, Sensitivity (1W/1M) 105dB SPL, Active crossover frequency 2 way 250 Hz, Impedance 4 ohms, 2 x 18" bass driver. Cabinet Size 101 x 70 x 71mm. \$3600.00

EAW, Eastern Acoustic Works Production Audio Services P/L (03) 9415 1585

KF650e Virtual Array Series, high output 3-way full range loudspeaker. 15" LF, 10" MF & 2" compression driver. Dispersion 60 x 40, max peak output 132dB SPL. Processor & Subs available. \$7595.00

KF300e Virtual Array Series, compact 3-way full range loudspeaker. 12" LF, 7" MF horn loaded & 1" compression driver. Dispersion 90 x 40 max peak output 128dB SPL. Processor & Subs available. \$6,295.00

JF560e Hi Def 2-way full range loudspeaker 15" LF & 2" exit compression driver. Dispersion 60 x 40 max peak output 125dB SPL. Switchable bi-amp or passive. 12" version (JF260e) available. \$4995.00

LA325 Linear activation System, high output 3-way full range loudspeaker. Dual 15" LF, Dual 6.5" MF & 2" compression driver. Dispersion 90 x 60 max output (peak) 131dB SPL. \$5895.00

ELECTROVOICE Mark IV Audio (Aust) P/L (02) 9648 3455

SX200 The SX200 has been one of the most widely used speakers in professional audio. Features 12" woofer with a 7.5 Kg magnet and a DHZ010A compression driver. 80Hz to 25kHz. 300W long term 1200W short term. 65° x 65° constant directivity. (101.5dB 1W/1M) \$1599.00

S181 Thunderous bass in a small space. This Manifold Technology® sub woofer features a single 18" work-horse. 400W long term 1600W short term. 36Hz to 200Hz (98dB 1W/1M) \$1650.00

S1500 A very popular live music speaker, designed and built in Australia using components. Features 1 x DL15M woofer, 1 x DHZ010A on an H794 flare. 300W long term 1200W short term (102dB 1W/1M)

T63 Bi-ampable Hi-level 3 way system. 15" woofer 10" mid and CD horn in a trapezoidal enclosure in full range. 300W long term 120W short term. (100dB 1W/1M). \$2499.00

FENDER Fender Australia P/L (02) 9666 5077

1226 MK.II 800W Program, 2 15" Eminence speakers & 1" compression driver, carpet covered, trapezoidal shape, 1/4" jack and Speakon connectors, Linkwitz Riley crossover. 1 Year Warranty. \$1799.00

SPL 2155C 1600W Program bandpass subwoofer, 2 15" Eminence speaker 69.2cmH x 65.4 cmW x 52.2 cmD, Carpet covered, 1/4" jack and Speakon connectors. 1 Year Warranty. \$1699.00

SPL 2915c 400W Program, 1 15" Eminence speaker & variable 60 or 90 degrees horn with 1" compression driver, 1/4" jack or Speakon connectors, carpet covered, trapezoidal shape, Linkwitz Riley crossover. 1 Year Warranty. \$1599.00

SPL 2912c As above but loaded with a 12" speaker instead of a 15". \$1500.00

KLEIN & HUMMEL Digital Sound Systems (Aust.) (02) 386-1043

0108 Active 2-Way near field monitor for CD mastering, O.B. vans post production magnetically shielded, 170mm woofer, 25mm Titanium tweeter, linear phase crossover, 60 + 60 W RMS, Balanced XLR input. \$2995.00

MM402 Compact active 2-Way near field for O.B. vans, post production sound file libraries, voice editing, Mag. shielded 120mm woofer,

25mm Titanium tweeter, 30 + 10 W RMS, XLR input, 240VOL/230VAL. \$1495.00

0121/TV Active 3-Way studio monitor for CD mastering/critical monitoring High SPL, Low distortion and exceptionally uncoloured Reproduction, 315mm Woofer, 120mm Mid range, 25mm Tweeter, 240 + 120 + 120 W RMS. Balanced XLR input. \$15,000.00.

MARTIN AUDIO A.R. Audio Engineering (02) 9810 5300

EM75 12" 2-way trapezoidal PA speaker with 1" Compression Driver/CD Horn. 124dB peak SPL. 60Hz-18kHz. 10 x M8 Flying points. Sub-Woofer Option. EMX1 Controller Required. \$2395.00

W3 15" 3-way trapezoidal PA speaker with 1" Compression Driver/CD Horn and 6.5" horn loaded Midrange. Active 2-Way. 131dB peak SPL. 55Hz-18kHz. Equipped for Flying. Sub-Woofer Option. WX3 Controller Required. \$3850.00

W8C 3-way trapezoidal concert system with 1" Compression Driver/CD Horn, 6.5" high-mid and 12" low mid both horn loaded with 55° horizontal dispersion. Active 2 or 3-way. 135dB peak SPL. 120Hz-18kHz. Fully equipped for Flying. Sub-Woofer Option. MX5 Controller Required. \$6950.00

MEYER SOUND LABORATORIES System Sales P/L (03) 9529 2633

MTS-4 Self powered, wide range, fully integrated amps & controllers 4-way active, corrected crossover, arrayable, No subwoofer required. (1) 12", (1) 15", (1) 18" cone, 2" horn driver 140 dB peak 127 Kgs. \$20,320.00

MSL-4 Self powered, long throw, High Q, arrayable. 2-Way active, corrected crossover, fully integrated amps & controllers (1) 12" cone, 2" horn driver, 140dB peak. 82 Kgs. \$15,500.00

CQ-1 Self powered, fully integrated amps & controllers arrayable Low Q, H 80°(500Hz to 16kHz) V 40°(1500Hz to 12kHz) (1) 15" cone, 110dB peak. 59 Kgs. \$12,444.00

CQ-2 Self powered, fully integrated amps & controllers arrayable High Q, H 50°(800Hz to 12kHz) V 40°(1500Hz to 12kHz) (1) 15" cone 110dB peak. 59 Kgs. \$12,444.00.

PEAVEY Australis Music (02) 9698 4444

SP4G 600W RMS, 2 x 15" Black Widow drivers, 50-17.5kHz, 22X2T Horn, 4Ω Sound Guard, Horn Protector. \$1999.00

RCF Musitronics Australia (07) 3822 3906

EVENT 1000 12" L12 P520, 1" N300A coupled with H100 Flare, Music Power 600W RMS, Peak Power 1200W, 127dB/1M @ 600W. 2 Neutrik Connectors 90-20,000 Hz. \$1861.00

EVENT 3000 15" L15 P520, 1" N300A coupled with H100 Flare, Music Power 600 Watts RMS, Peak Power 1200W, 127dB/1M @ 600W. 2 Neutrik Connectors, 60-20,000 Hz. \$2030.00

EVENT 4000 15" L15 P530, 1" N200 Driver and Flare. 8" L8L750 Music Power 800 Watts, Peak Power 1600 Watts, 2 Neutrik Connectors 48-20,000 Hz. \$2436.00

EVENT 6000 2 x 15" L15P530, 1" N681 Driver coupled to H100 Flare. L8L750 Driver, Music Power 2000 Watts RMS, Peak Power 4000W, 2 Neutrik Connectors, 48-20,000 Hz. \$4746.00.

YORKVILLE/ELITE Dynamic Music (02) 9939 1299

EX-401 2 Way, 400 Watt 4 Ohm Cabinet. Sensitivity at 1W/1M is 102dB. Contains a 15" RCF Woofer, Yorkville horn and a 1" B & C horn driver. Speakon connectors, carpet covered and 2 year unconditional warranty. \$1595.00

EX-601 2 Way 600 Watt 4 Ohm Cabinet. Contains 2 x 10" RCF speakers, RCF Horn and 1" RCF Horn driver. Speakon & jack connections, 2 year unconditional warranty. Weighs in at 35 Kg. \$1695.00

EX-1000 3 Way, 1000 Watt Cabinet at 4 Ohms. Sensitivity at 1W/1M is 102dB with a maximum SPL of 132 dB. 2 x 15" B & C speakers with a Yorkville horn and 1" B & C driver. 2 year unconditional warranty, 50 Kg. Built in wheels. \$2595.00

EX-2000 3 Way 1000 Watt Cabinet at 4 Ohms. 2 x 14" RCF speakers, 2" horn driver and 1" tweeter. 85 Kg, wheel mounted. 2 year unconditional warranty, heavy gauge grilles, black carpet covering. Flying option available. \$3295.00

JBL Jands Electronics Pty Ltd (02) 9516 3622

MR 925 2-way Vocal/Music Reinforcement System, 380mm SHG LF Transducer, 25mm Exit Compression Driver, 44mm Titanium Diaphragm Compression Driver and Flat Front Bi-Radial Horn, Integral Stand Mount. Also MR922 (12" 2-way), M935 (15" 3-way) and MR938 (18" 3-way). \$1595.00.

SR 4725A 2-way Full Range PA System: 2226H 380mm (15") LF Transducer; 2426H 25mm (1") exit Compression Driver and; 2370A Flat-Front, Bi-Radial Horn. Also SR4722A (12" 2-way), SR4733A (Dual 15" 2-way), SR4735A (15" 3-way) SR4738A (18" 3-way). \$2795.00.

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BUYERS GUIDE: LOUDSPEAKER SYSTEMS

ARCHITECTURAL SERIES Custom built range of speakers comprising standard and specific designs. Optional finishes include weatherproof, fibreglass, bare wood, primer etc. Way too many options to list. Enquire for details. \$2875 - \$8145

ARRAY 4892 High technology prestige, 2-way Compact High Performance Speaker System: 255mm Neodymium LF Transducer; 38mm exit, Large-Format, Titanium Diaphragm Compression Driver; 45° x 35° Horn, Pole Mount. Also Array 4894 (Dual 14"). \$6695

STAGE MONITORS

AMPOWER Amps Unlimited (03) 9357 8580

AB122M 125 watt 8 Ohm, 2 way foldback monitor with 12" bass driver and 270mm x 100mm Piezo high frequency horn. Box size 385H x 570W x 365D. Black carpet finish, steel metal grille. \$380.00

AM1522M 200 Watt 8 Ohm 2 way foldback monitor with 15" "Eminence" bass driver and 270mm x 100mm Foster high frequency horn. Box size 385H x 570W x 365D. \$500.00

AB-P122M 100 Watt powered 2 way foldback monitor with 12" bass driver and 270mm x 100mm Piezo high frequency horn. Box size 395H x 570W x 365D. \$725.00

AL-P100M 100 Watt powered 2 Way foldback monitor with 12" Lorantz driver and 270mm x 100mm. Foster high frequency horn. Box size 395H x 530W x 300D. \$775.00

ARX SYSTEMS ARX Systems P/L (03) 9555 7859
Power Max 3 1 x 300mm Woofer, 1 x 25mm ferrofluid cooled compression driver, 2 XLR connectors, H: 585 x W: 380 x D: 380, 99dB 1W/1M. \$1566.00

Power Max 4 1 x 380mm Woofer, 1 x 25mm ferrofluid cooled compression driver, 2 XLR connectors, H: 763 x W: 445 x D: 414, 99dB 1W/1M. \$2030.00
215M 1 x 380mm Woofer, 1 x 50mm compression driver, 4 x EP4 Connectors or Speakon, H: 460 x W: 770 x D: 460. 102dB 1W/1M. \$3366.00

AUSTRALIAN MONITOR Australian Monitor P/L (03) 9874 9355

QMX D12 WEDGE Floor monitor version of QMX Double 12, 2 x 12" woofers + 2" comp. driver on

90° x 40° CD horn, 104dB/Watt @ 1 Metre. 133 dB peak @ 600 watts, 4 ohms. \$2370.00

F300 Full range 2-Way floor monitor. Vented enclosure featuring 15" co-axial sub woofer + 1" Comp. driver, 60° x 40° CD Horn, 99dB - 1watt/1 metre 500 watts peak for 125 dB. 8 ohms, 550 x 450 x 460. \$1830.00

TARGET T1212 Full range, cost effective, 2 way floor monitor. Featuring 12" cast frame woofer and Phenolic diaphragm comp. driver, 98dB 1 watt/1 meter, 140 watts continuous/560 watts peak, 8 ohm. 546 x 381 x 365mm. \$1025.00

CARLSBRO F. Payton & Son. (02) 9439 1822

Alpha EM12 A 100 watt 8 ohms passive monitor featuring a 12" Celestion speaker and Motorola horn. H: 355mm x W: 505mm x D: 420. Weight 13.6kg. \$480.00

Alpha PM12 A 65 watt 8 ohms monitor similar in features to the Alpha EM12 but with an inbuilt amplifier. H: 355mm x W: 505mm x D: 420mm. Weight : 15.2kg. \$960.00

Alpha M15 A 200 watt 8 ohms passive monitor with 15" speaker and constant directivity horn. H: 360mm x W: 670mm x D: 460mm. Weight 18.1 Kg. \$810.00

Delta DM115 A 200 watt at 8 ohms, monitor featuring a 15" speaker and constant directivity horn. H: 435mm x W: 487mm x D: 620mm. Weight 24Kg. \$1250.00

CELESTION SERIES Electric Factory (03) 9480 5988

CR102M 10" 2-Way system with a high frequency horn loaded tweeter 200 watts @ 8 ohms. \$699.00

CR122M 12" Two-way system with high frequency horn loaded tweeter, 250 watts @ 8 ohms. \$799.00

cr152M 15" 2-way system with H.F. horn loaded tweeter, 250 w @ 8 ohms. \$999.00

CERWIN-VEGA! Ashton Admor P/L (09) 478 3800

MCW-12 12" Woofer 2" V.C. High efficiency Bi-morph drive tweeter in coax configuration, 381 x 470 x 318mm overall, 250 watt program 450 watt peak 101dB sensitivity 1W/1M Speakon Cons., 14Kg low profile wedge. \$1108.00

MCW-15 15" Woofer 2" V.C. 1" Compression driver in coax configuration 381 x 559 x 318 overall, 250 watt program 450 watt peak, 103dB sensitivity 1W/1M, Speakon connectors, 15.9kg low profile wedge. \$1241.00

EAW Eastern Acoustic

Works Production Audio Services P/L (03) 9415 1585

SM500iV High output concert series full range stage monitor. Simple 15" with 2" compression driver. 60° angle. Dispersion 60 x 45, max peak output 127dB SPL. \$3865.00

SM400iH Ultra high output concert series full range stage monitor. Dual 12" with 2" compression driver, 60° angle. Dispersion 60 x 45, max peak output 131dB SPL. \$5595.00

SM260iV High output concert series full range stage monitor. Single 12" with 2" compression driver, 60° angle. Dispersion 60 x 45, max peak output 125dB SPL. \$4275.00

SM200iV High output concert series full range stage monitor. Single 12" with 2" compression driver, 90° angle. Dispersion 90 x 90. Low profile version (SM200iH) available. \$4195.00

ELECTROVOICE Mark IV Audio (Aust) P/L (02) 9648 3455

FM12C 12" Co-axially mounted super dome tweeter. The polythene FM12C offers 35°, 45° and 50° monitoring from an extremely compact cabinet. 200W long term, 800W short term. (99dB 1W/1M). \$999.00

FM1202ER This full range accurate monitor features an EVM12S woofer and a DHZ010A compression driver on a 90° x 40° CD horn. 300W long term, 1200W short term. (101.5dB 1W/1M). \$1595.00

FM1502ER Ideal for situations demanding more low end punch. The FM1502ER includes an EVM15L woofer and the same great Hi frequency components as the FM1202ER (102dB @ 1W/1M). \$1695.00

M12G Designed especially for the guitarist. This monitor is the same versatile enclosure as the FM12C but contains the industry standard EVM12L. 300W long term, 1200W short term. (100dB 1W/1M). \$895.00

FENDER Fender Australia P/L (02) 9666 5077



AMPOWER 1522M FOLDBACK MONITOR

1272A 200W program, 30, 60 degrees or vertical mounting, 1 12" Eminence speaker & dual piezo horn, carpet covered, 1/4" jack, connectors. 1 Year Warranty. \$599.00

1275A As for 1272A but with a 15" speaker. \$699.00

1282 400W program. 30, 60 degrees or vertical mounting, 1 12" Eminence speaker & 1" compression driver, carpet covered, 1/4" jack or Speakon connectors. 1 Year Warranty. \$1199.

1285 As for 1282 but with 15" speakers. \$1299.00

MARTIN AUDIO A.R. Audio Engineering (02) 9810 5300

WMO.5 8" 2-way miniature wedge monitor with 1" Compression Driver/CD Horn. 50° x 70° Dispersion. 120dB peak SPL. 70Hz-18kHz. \$1145.00

LE350 12" 2-Way low profile wedge monitor with 1" HF compression driver on differential dispersion horn. 125dB peak SPL. 70Hz - 18kHz. \$3300.00

LE400 15" 2-way passive or active wedge monitor with 1" HF compression driver on differential dispersion horn. 127dB peak SPL. 50Hz-16kHz. \$3750.00

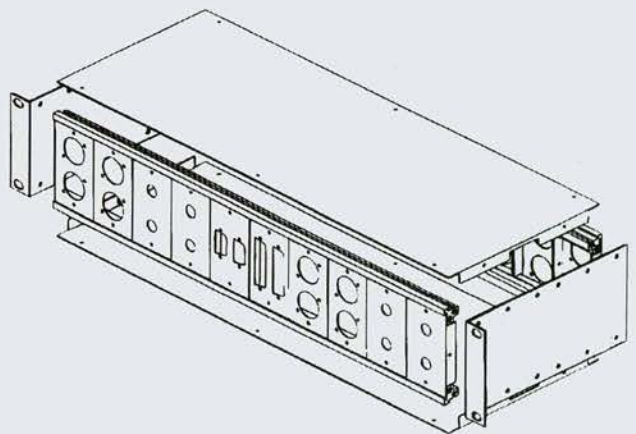
LE700 15" 2-way active wedge monitor with 2" EV DH1A compression driver on differential dispersion horn and 4" voice coil 15" ATC Driver. 130dB peak SPL. 60Hz-15kHz. MX5 Controller Required. \$5500.00

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BUYERS GUIDE: LOUDSPEAKER SYSTEMS

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112M 12" Woofer, Piezo Tweeter, level control, 8Ω, metal grille. \$399.00

115T1 100W RMS 15" Woofer, Metal Grille, 8Ω attenuator, 75-17kHz. \$829.00

1545T1 250 WRMS, 15" Black Widow Speaker, 88-14kHz, 22T Compression Driver, 101dB (1W-1M) \$1199.00

DTM 400W, 15" Black Widow 44T Compression Driver, 8Ω, 68-16kHz, Full Range (Blamp) \$1999.00

MEYER SOUND LABORATORIES *System Sales P/L (03) 9529 2633*

UM-1C High powered, bi-amplified stage monitor, high gain-before feedback, efficient power handling flat frequency response, 135 dB peak M1-A controller - "SpeakerSense"™ driver protection. 30 Kgs. \$5341.00

USM-1 High powered, wide coverage, bi-amplified stage monitor. Excellent control of feedback - efficient power handling flat frequency response, 139 dB peak S-1 Controller - "SpeakerSense"™ driver protection. 37 Kgs. \$6866.00

PSM-2 Self powered stage monitor, Integrated amps & controllers, 60° in both horizontal & vertical planes. High gain before feedback, flat frequency response "True Power"™ limiting, 140dB peak 60Kgs. \$12,444.00

RCF *Musitronics Australia (07) 3822 3906*

EVENT 3000 SM 15" L15P520, "N300A Coupled with H100 Flare, Music Power 600 Watts RMS, Peak Power 1200 Watts, 127dB/1M @ 600W. 2 Neutrik Connectors 60-20,000 Hz. \$1780.00

SESSION *Electric Factory (03) 9480 5988*

SBE112FB 12" 100 Watt foldback monitor with Eminence speaker plus 1 x 40 watt horn and built

in crossover. \$399.00

SBE115VM 15" 125 Watt foldback monitor enhanced for vocal use. 40 watt horn with built in crossover. \$499.00

SBE115DM As above but enhanced for keyboards, dance music and any instrument requiring extra bottom end. \$499.00

SBE112PM POWERED 12" Angled foldback with built in 100 watt power amp 40 watt horn and built in crossover. \$769.00

YORKVILLE/ELITE *Dynamic Music. (02) 9939 1299*

EX-161M A 2 way 160W 8 Ohm Monitor. 10" RCF Woofer and RCF Horn driver. Compact angle styled box for high performance stage monitoring. 2 Year unconditional/transferrable warranty. \$995.00

EX-350M Special "low profile" design 2 way, 350W Monitor at 8 ohm. Features specially angled horn for better onstage throw. 12" B & C Woofer and

Yorkville horn. Max SPL at 1W/1M of 127 dB. \$1695.00

EX-401M 2 Way, 400W 8 Ohm Monitor. 15" Woofer & Yorkville Horn. Full grille front and stand mount adaptor make the 401M a rugged stage box. 2 Year unconditional warranty as with all Yorkville product. \$1625.00

50W Powered 50W at 4 Ohm, 2 Channel powered Monitor. Includes XLR, RCA & phone inputs, ef-

fects loop, 10" woofer and 3.75" tweeter. Separate channel volumes and tone controls add to this most versatile monitor.

JBL *Jands Electronics Pty Ltd (02) 9516 3622*

TR 105 2-way Stage Monitor, 380mm LF Transducer, Fluid Cooled Compression Driver with 25mm Titanium Diaphragm and Optimized Aperture™ Horn. \$1095

MR905 NEW! 2-way Stage Monitor, 380mm LF Transducer, 25mm Exit Compression Driver, 44mm Titanium Diaphragm Compression Driver and Flat Front Bi-Radial Horn. Also MR902 (12" 2-way). \$1595

SR4706A 2-way High Level Full-Range PA System: 2226G 380mm LF Transducer, 2447J 38mm Exit Large-Format Titanium Diaphragm Compression Driver, 2381 90° x 50° Optimized Aperture Horn, Flat Front Bi-Radial Horn. Also SR4704A (with 1" HF). \$4395

ARRAY 4890 Horizontal Format 2-way Controlled Floor Monitor: 355mm Neodymium LF Transducer, 38mm Exit 100mm Large-Format Titanium Diaphragm Compression Driver, and 60° x 40° rotatable, Optimized Aperture Horn, Flat Front Bi-Radial Horn. Also 4891 (vertical format). \$6695

SYSTEM CONTROLLERS

ARX SYSTEMS *ARX Systems P/L (03) 9555 7859*

Power Pro Stereo Processor for Power Max range featuring Interactive System Control, high pass filter, sub woofer output. \$1150.00

Micro Pro. Stereo Processor for Micro Max speaker system featuring Interactive System Control, high pass filter, sub woofer output and system equalization. \$885.00

CU922 Stereo Processor featuring Interactive System Control, Active two way system, high pass filter and system equalization. \$1385.00

EAW, Eastern Acoustic Works *Production Audio Services P/L (03) 9415 1585*

MX8000 Close coupled network processor. PC control, 4-way crossover, limiting, equalization, phase compensation as well as digital delay & remote options. \$6695.00

MX800i Close coupled electronic processor. 2-channel, 4-way crossover. Supplied set up for specific EAW systems. \$6695.00

MX300i Close coupled electronic processor. 2-channel, 3-way crossover. Many functions. Supplied set up for specific EAW systems. 2-way version (MX200i) available. \$4695.00

MX100 Close coupled electronic processor. 2-channel, 2-way crossover. Simple, but effective performance for lower end EAW systems. \$2075.00

ELECTROVOICE *Mark IV Audio (Aust.) P/L (02) 9648 3455*

DX34 2 In/4 Out Digital Controller. Features: X/Over, EQ, Delay, Limiter, Password lockout. Comes pre-loaded with EV speaker parameters controllable via MIDI, balanced XLR connectors, 102dB of Dynamic range. \$2570.00

XP200A Designed to let you get even more out of your SX200! Features fourth order crossover and a special low frequency profile circuit that enhances the performance of the SX200 (more bottom end!). \$795.00

MARTIN AUDIO *A.R. Audio Engineering (02) 9810 5300*

M1 Controller/Equaliser for ICT300 speaker system. Provides output for ICS300 Sub-Woofer. 1RU. \$495.00

EMX1 System equaliser/limiter and sub output for EM Series. 1RU. \$1295.00

WX3 System equaliser/limiter/crossover providing 2-way active configuration for W3 system. 1RU. \$1950.00

MX5 System equaliser/limiter/crossover providing 2-way stereo or 4-way mono configuration for LE700 or W8 systems. 1RU. \$2895.00

JBL *Jands Electronics Pty Ltd (02) 9516 3622*

ASC24 Analog Speaker Controller, 2-way stereo, 24dB per oct. Balanced XLR's, Limiters and CD Horn EQ. \$3995.00

DSC280 Digital System Controller 2 Channel, 4-way Configuration with Equalisation, Crossover, Delay and Phase Compensation Functions all in Digital Domain, 48kHz Sampling Rate, Configured for DMS-1 and Array Series. \$10,995.00

Next month's Buyers Guide: Recorders & Recording Software, DAWs.



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STOLEN

P.A. Equipment from Gorman House, Canberra on Saturday 19th October, 1996. 1 x Yamaha 2404 Mixer with silver

road case, 24 into 4 into 2. 1 x Black painted FX rack on wheels consisting of: 1 x Yamaha R 1000 Reverb; 1 x Roland SDE 1000 Delay; 3 x Roland SQ 331 Equalisers; 1 x DBX 160 Compressor; 1 x TEAC C3 Cassette Deck; 1 x Jands J700 Power Amp; 1 x Yamaha Power Amp 2200 with large VU Meters; 1 x Yamaha REV7 Reverb; 1 x Aurel Exciter 2 Ch; 2 x JBL 12" Ring Fold Back Speakers (grey carpet covered). If you have any information or see it around, please contact Tony Brighton at Sound Workshop on 018 632 660 or (06) 247 6203 or Snr. Constable Meta at Canberra City Police Station on (06) 245 7208. **N.B.** Most of the equipment is engraved with either Tony's phone number or S.W.

FOR HIRE

Microphone Hire: Shure 57 & 58, Beyer M88, PZM, D.I. boxes; \$5 per day with stand & lead. Radio Mics: Hand-held, Head-set or Lapel; \$40

per day. Shotgun Mics \$30 per day. B.S. Sound Reinforcement (03) 9531 1403 or 015 328 049

Vocal P.A. small enough to fit in your car; 500 watts, 8 channel; from \$50. Lights also available. Delivery and operation can be arranged. B.S. Sound Reinforcement (03) 9531 1403 or 015 328 049.

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wide delivery. **STUDIO FX** Ph: (02) 9281 0272.

REPAIRS

Repairs of PA Equipment - All brands. Speakers; Amplifiers; Mixers; Light Controllers etc. Fast turn around time. After hours service available. Greg Ball Electronics, Penrith. Phone: 047 315 661. Mobile: 018 969 545

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20-Way Multicores, from \$400. Call Smithy at Cannon Sound (02) 9550 3828 Email: rocknroll@netline.net.au
AKG CK9 extension tube. \$250. audio alchemy (07) 3 846 7115 or 015 116 496

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Videoplus Pty Limited, one of Sydney's leading Audio Visual Staging companies is seeking an Account Manager. The successful applicant will have knowledge of all aspects of the corporate staging industry, including audio, video and data projection. You will also require the ability to deal directly with clients and to plan as well as co-ordinate full corporate presentations.



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CONNECTIONS SHOP

SUMMER CATALOGUE

Theatrical

Stagecraft

\$39



By Trevor R. Griffiths.
A complete guide to theatrical practice covering all aspects from choosing a play to backstage and FOH management. Now, even the most inexperienced amateur group can attain professional standards. Experts have formulated their own hard-won experiences into a set of guidelines and show how to achieve the best possible production with the least number of pitfalls. 192 pages.

Stage Management & Theatre Administration

\$29



A clear and concise guide for both stage managers and theatre administrators. Areas covered include rehearsals, production week, effects, stage fights & weapons, financial control, marketing, venue and FOH. A most practical guide for anyone involved in theatre management. 128 pages, 1993.

Stage Design and Properties

\$29



By Michael Holt.
A comprehensive guide for those involved in theatre design, set construction, workshop techniques, models, props, painting etc. Simple and clear ideas presented with illustrations make this book a must, especially for anyone keen to learn the many facets of theatre production or who need new ideas. 128 pages, 1993.

Projection for the Performing Arts

\$69



By Graham Walne.
Written in non-technical language and lavishly illustrated, this book gives a brief historical overview of early projection attempts, then goes on to look at equipment and the planning and design of every kind of live performance, both inside and outdoors. Will be of interest to anyone in the field of theatre and other forms of live performance. 139 pages, 1995.

Stage Makeup

\$34



An invaluable guide providing the fundamentals of stage makeup for the performer. Herman Buchman has worked on the Broadway stage, in opera, television and film and presents clear, step by step colour illustrations to demonstrate the effects correct stage make-up can achieve. 191 pages.

NEW STOCK

Lighting and Sound

\$29



By Neil Fraser.
An introduction to the art of theatre lighting and sound. Can be used by both the novice and the experienced technician when a quick and easy reference is required to improve working methods, provide new ideas or solve problems. Clear diagrams and easy to read explanations make this a very handy guide for anybody involved in theatre production. 132 pages, 1993.

Lighting

Set Lighting Technician's Handbook

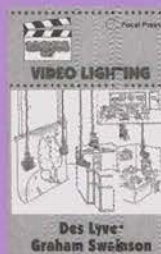
\$75



By Harry C. Box.
This book provides students and budding professionals with practical hands-on information about standard practices, equipment and tricks of the trade essential to the motion picture set lighting technician. Covers electrical distribution and regulations, HMI and arc light operation plus set protocol. Includes more than 150 illustrations and 100 tables. 377 pages, 1992.

Basics of Video Lighting

\$25



This book is for the beginner and aims to give a rapid understanding of the complex process without going into too much technical detail. Details of equipment are included with a guide to planning, selecting and positioning of lights to make your own production look very professional. Covers studio and on-location lighting; practical examples; hints and tips for choosing equipment; exercises for students and a comprehensive glossary. 133 pages, 1995.

Professional Lighting Handbook

\$95



By Verne & Sylvia E. Carlson.
A concise guide providing the vital working knowledge professionals need to create effective visual images. Details technical foundations, equipment and methods of lighting for film and video productions. This book is packed with practical insights, tips and troubleshooting techniques useful on the set. 224 pages, 1991.

Audio Visual

Effective Audio-Visual

\$65



By Robert Simpson.
An audio-visual user's handbook detailing equipment and techniques. This third edition demonstrates how the computer is fast becoming an effective show delivery platform in its own right. Applications covered are business presentations, conferences, training sessions, museum exhibits, visitor centre displays and multimedia applications. A useful asset to anyone with an interest in the audio-visual world. 255 pages, 1996.

Audio

Music & Technology

\$29



By H.P. Newquist.
An excellent introduction to new music technology for today's active musician affected by the digital revolution. Includes simple guidelines on how to use the technology and provides explanations on MIDI, computers & music software, digital keyboards, drums, guitars and winds; sequencers and samplers; technology and live performance plus new techniques in home and studio recording. 198 pages, 1989.

Sound Reinforcement Handbook

\$69



Written for Yamaha by Gary Davis & Ralph Jones, this handbook provides a useful reference for those wishing to learn about the basics of sound reinforcement. Presented in an easy-to-read format with clear diagrams and an index, this manual is a must for anyone working to bring better sound and music to the world. 412 pages, 1989.

The Audio Workstation Handbook

\$55



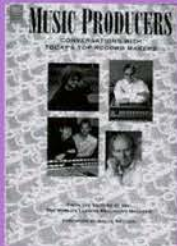
By Francis Rumsey.
A complete guide for students, operators and engineers on digital audio and associated technologies. Contains vital information on MIDI control and computer soundcards, audio workstation principles, mass storage devices, files transfer and networking, audio interfaces and digital video. Similarly, those involved in the computer industry needing a greater understanding of high quality audio. 284 pages, 1996.

CONNECTIONS SHOP

Music Producers

Edited by *MIX Magazine*.

\$39



Popular recording techniques have changed dramatically in recent times effectively bringing the outside world into the realm of music. This has resulted in a marked transition in the role of the record producer. *Music Producers* contains 24 interviews with today's top record makers giving a broad view of the ways in which they create their audio images. 128 pages, 1992.

Studio Seconds

\$19

By *Tom Lubin*.



A detailed handbook designed for those interested in music and sound recording. Covers basic principles for the beginner and advanced methods for the audio professional. Also includes techniques for the smooth running of recording sessions and features a humorous look at the development of magnetic recording. 154 pages, 1991.

Making the Ultimate Demo

\$49

By *Michael Molenda*.

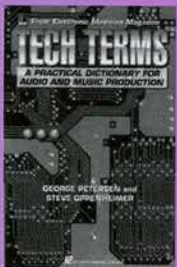


Outlines the process involved in the successful recording and marketing of your demo tape. Packed with tips from industry professionals on vocal and instrumental tracks, signal processing, mixdown and budgeting. Also advice on how to market your demo to the record labels without wasting your time. 128 pages, 1993.

Tech Terms

By *George Petersen & Steve Oppenheimer*.

\$19



A practical dictionary of audio & music production terminology, written for the musician of the 90s. It provides a quick, accurate definition on 300 of the most commonly misunderstood words and phrases in the field of studio recording, digital audio & electronic music. 50 pgs, 1993.

Practical Studio Techniques

\$40 WITH CD

By *Tom Misner*.

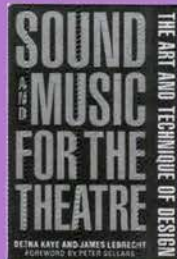


A book full of practical recording information for anyone interested in studio audio. Includes CD, a practical demonstration of a complete studio mixdown session including setting up effects; uses of the compressor; gating of sound; various types of equalisation; selecting reverb settings and much more. 102 pages, 1994.

Sound & Music for Theatre

\$44

By *Kaye & LeBrecht*.

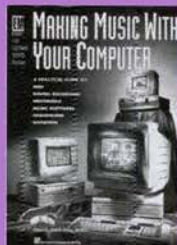


This book is for anyone interested in creative sound and traces the complete process of sound design from the original concept through to the finished plan. It covers development, research, cues, recording and various techniques. Also included is a director's and playwright's forum where they express their views on sound, design and its impact in today's theatre. 196 pgs, 1992.

Making Music with your Computer

\$39

Edited by *David (Rudy) Trubitt*.

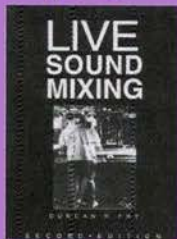


Explores the high-tech world of computers, synthesizers & digital audio. Covers MIDI sequencing, music notation & printing, hard-disk recording and multimedia. Special features to help you discover the many ways computers can contribute to the creative process with tips on selecting the right programs & gear for your needs. 128 pgs, 1993.

Live Sound Mixing

\$35

By *Duncan Fry*.



A 'hands on' manual in its second edition, *Live Sound Mixing* is for anyone wanting information on the basic principles of how a PA system works and details on trouble shooting when it doesn't. Covers EQ, processing, mixing, soundchecks, effects, monitors, plus what each knob does, why and when to turn it. 176 pages, 1992.

\$48

Concert Sound

By *David (Rudy) Trubitt*.



For all those interested in the sound reinforcement field. Full of useful information on specific live sound topics and profiles of individual tours including U2, Stones, Van Halen etc. Covers monitor mixing, drum & guitar miking, noise regulations, computers in live sound and career development. 166 pgs, 1993.

MIDI Systems & Control

\$55

By *Francis Rumsey*.



2nd Edition. Provides a comprehensive coverage of the principles of MIDI control and how it can be implemented in practical systems. Useful for those interested in design devices with numerous diagrams and illustrations. Deals with MIDI in studio, musical and lighting equipment, mixer automation plus information on the latest additions to the MIDI spec. 202 pgs, 1994.

Project Studio

Blueprint

\$53

By *Greg Gallucio*.



A practical D.I.Y. guide on project studios for home or business use, with information on the latest audio technology advancements. Contains practical business advice and expert recommendations on equipment. Areas covered include ideas, budgets, studio acoustics, an installation guide to audio connections and patch bays, troubleshooting, sound proofing and multimedia. 236 pages, 1992.

Sound for Picture

\$39

Edited by *MIX Magazine*.



Takes you behind the scenes as top sound professionals reveal how dialogue, sound effects and musical scores are recorded, edited and assembled. Case studies include Terminator, The Simpsons, The Doors and Northern Exposure. Ideal for audio engineers, recording students, aspiring sound operators plus film and video enthusiasts. 134 pages, 1993.

Modular Digital Multitracks

\$49

By *George Petersen*.



A personal guide to new recording industry technology with analysis of systems such as Alesis ADAT, Tascam DA-88, Fostex RD-8, Akai A-DAM and Yamaha DMR8. Explores features that aren't mentioned in the manufacturers' literature, reveals secret button pushes and explains maintenance and auto-diagnostic procedures. 120 pages, 1994.

Hums & Buzzes Explained

\$9

By *Laurie Nethercote*.



A small handbook written in plain English for sound engineers and musicians. Explains earth loops and magnetically induced noises. No maths, no formulas, just down to earth trouble shooting tips! Includes: Project - build your own transformer isolation unit. 30 pages, 1993.

Electronic Projects for Musicians

\$39

By *Craig Anderton*.

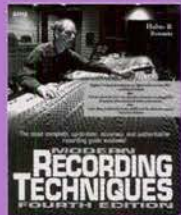


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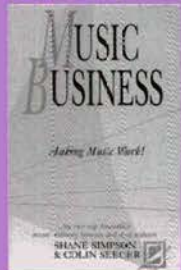
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A comprehensive recording guide which addresses the area of project studio recording - the new base of home music production using multitrack, hard-disk and MIDI technologies. Perfect for the student of professional recording with easy-to-understand descriptions of the toys, tools and day-to-day practices of music recording and production. 4th edition. 500 pages, 1995.

Music Business



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By Shane Simpson & Colin Seeger.
A book about the business side of the Australian music industry by two top industry lawyers and deal makers. Shows how and why things are done as they are in the industry & what to watch out for in negotiating deals. A comprehensive guide for both the novice and the industry professional. 496 pgs, 1994.

The Best of Duncan Fry



\$15
Connections Magazine popular columnist Duncan Fry chronicles his road stories, including some XXX rated, never before published! Dunk writes about life at the gig, after gig, and nowhere near the gig - it is sometimes a chronicle of the world through his eyes. Duncan ran his own PA and Lighting rigs through the 'golden era' of the Australian Rock Industry. Today he is co-owner of ARX, the Australian PA equipment manufacturers. 100 pgs, 1995.

Concert Lighting



\$94
By James Moody.
This hardcover informative book places special emphasis on rock and roll concert lighting equipment and techniques. Of particular interest for the touring professional lighting technician and designer it covers every aspect including the design stage, cuing the music, road safety, equipment designed to travel and practical examples of techniques. 191 pgs, 1989.

Test CD



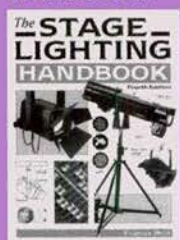
\$29
Very handy for audio people, this test CD has: Tape deck alignment tones, sine waves, 10kHz through 20kHz; 1/3 octave tones, (30 seconds of each); Square waves, (30 seconds of each); Frequency sweeps, 20Hz to 20kHz, sweeps down and up; Phase test at 250Hz, in phase and out of phase; Digital 'black', 1 minute of pure silence to find faults with; Dry instrumental performances, without ambience or reverb; and SMPTE/EBU time code. Produced by MIX Magazine.

Recommended Practice For DMX 512



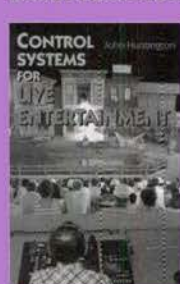
\$19
By Adam Bennette.
A guide for users and installers. Explains the DMX512 specification & offers professional advice on how to set up a successful DMX512 system. An authoritative illustrated study of standard Lighting Control protocol. Endorsed by PLASA and USITT. 80 pgs, 1994.

Stage Lighting Handbook



\$39
By Francis Reid.
Fourth Edition. This standard illustrated guide incorporates recent advances in technology in areas such as light sources and instruments, including remotely-focused spotlights and computer aided design. In 1974, Connections editor Julius Grafton read the first version of this book and went out to successfully light a professional stage play. It can be done! 208 pages, 1992.

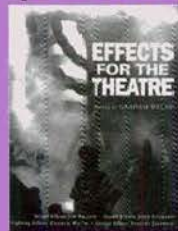
Control Systems For Live Entertainment



\$86
By John Huntington.
Demonstrates the use and integration of computers in the control and coordination of lighting and sound equipment. Includes the basics of control systems, data communication concepts and networking; case studies of problems and solutions; in-depth discussions of important topics like SMPTE Time Code, MIDI, MIDI Show Control, MIDI Machine Control, DMX512, MediaLink and many others. 292 pages, 1994.

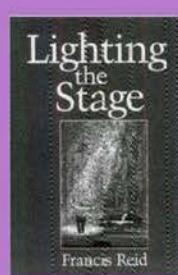
Effects for the Theatre

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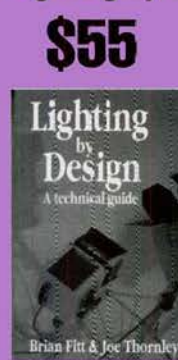
Edited by Graham Walne.
This practical handbook divides effects into four sections; scenic, sound, lighting and special written by internationally experienced experts in each field. An exciting range of techniques are explained with consideration given to budget. Also covers areas of safety, plotting and cuing. 150 pgs, 1995.

Lighting The Stage



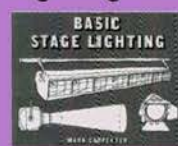
\$36
Written in an informal style, Francis Reid draws on his many years experience as a world renowned lighting designer and teacher to pass on tips and pointers which will interest and stimulate all those concerned with using designed light on stage. Ideal for directors, choreographers, set designers, costume designers, stage managers and specialist technicians. 114 pages, 1995.

Lighting by Design



\$55
By Fitt & Thornley.
A full technical guide to the basic theory and practice of lighting for practitioners of lighting in the entertainment industry, including stage, film, television and still photography. Included is a thorough coverage of equipment and a look at design requirements, writing specifications, awarding contracts and purchasing of equipment. Emphasis has been placed on safety and its current legislation. 321 pgs, 1992.

Basic Stage Lighting

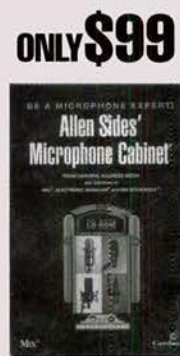


\$17
By Mark Carpenter.
Written in 1982 primarily as a first text, Basic Stage Lighting provides answers to many of the lighting problems which occur in drama productions. Teachers, amateur lighting and production managers together with students of drama will appreciate the detailed and informative diagrams which reflect the author's wide experience in stage lighting. DMX and moving lights not included. 113 pages.

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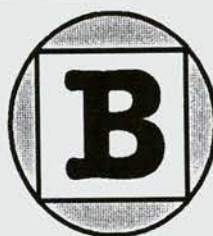
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DUPLICATION & REPLICATION

Connections Special Report Compiled by Dan Cole



DVD is the media for the millennium

(translation: the CD 'replacement' is here now and will not go away!)

By Julius Grafton

SINGAPORE, OCT. 23: At presstime I dropped out of the production cycle to flash through the REPLtech conference in Singapore. I had to do this due to the heavy interest I've encountered in recent months regarding Digital Versatile Disk (DVD).

In Singapore ground zero of the continually modernising Asian region, I found DVD preparations and speculation aplenty. It seems the big dollars are being spent, for many Replicators world wide have ordered new DVD lines or initiated conversions of existing CD lines.

Most readers are slightly out of sync with DVD, and confused about CD video, Laser Disk, and CD-R. DVD will replace all these. In the meantime higher spec DVD consumer players will also play all

the other formats, so consumers are not asked to throw out software. One player will take centre stage in the consumers home by the year 2000. The DVD player.

Panasonic and Pioneer have consumer machines in production. I saw, touched and worked a Philips machine at REPLtech.

DVD is a 4.7 gigabyte optical disk, the same size as a CD. It is made of two 0.6mm thick disks bonded together to make a 1.2mm thick unit. This standard disk type is known as DVD 5, which has one pre-recorded side bonded to a dummy disk. It's part of a family, DVD 10 has two pre-recorded sides bonded together for a double sided DVD. DVD 9 is better because it is a double sided disk that is played through one side, giving 8.5 GB capacity. Somehow we at Connections think DVD 10 will not be popular, for two reasons.

First - nowhere to put the label; Second - consumers will not enjoy turning the disk over, and although possible, manufacturers won't make players that read two sides.

DVD 5 can also feature sexy holographic label effects back bonded to the dummy disk!

There are side options under development, including a DVD-R (write once) and DVD-RAM (rewriteable). Clearly DVD is the media for the millennium.

DVD VIDEO

Hollywood is bullish about taking a video lead in getting DVD video onto retail shelves in the first half of 1997, while computer manufacturers expect to install DVD-ROM drives in high end Pentium machines this Christmas.

DVD Video on a standard 4.7 *(continued over)*

BREAKING NEWS

By Dan Cole

SSD go DVD

Southern Star Duplitek will be the first DVD manufacturer in Australia. The firm is part of the Southern Star Entertainment Group who currently operate mass video and cassette duplication in Sydney. A DVD plant will be installed early in the new year.

"We have the largest market share of the Australian video duplication market," says Geoff Thurstan, Sales and Marketing Manager. He emphasises that CD brokering and large scale cassette duplication is a significant part of their operation, this is despite an average 20% decline in music cassette consumption per year.

"Cassette duplication makes up about 10% of our duplication activities. Ten years ago audio would have taken up the floor space video does now."

"We have been going overseas for DVD meetings since 1993 and decided to commit to the format when specifications were finalised. The American market is driving DVD — it has to be a success there before it emerges here.

"The set-up time, mastering, bonding processes and presses are different (to CD). It's all very expensive. DVD capable replication and mastering equipment has been ordered, it'll arrive late this year or early next year," he says.

This also means that Southern Star Duplitek will soon become a CD

(continued over)

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DVD is coming

GB disk will deliver a feature length movie with 5 channels of surround sound. Consumers already love the random access of CD, LD and CD video. They will grow to love DVD because of the picture and audio quality and because it's a lot harder than LD.

Two issues have held back Hollywood. Regionalisation coding has now been established so the world is made up of 5 zones. A DVD released in the USA may not play on a DVD player located in India. Because Hollywood seeks to release its product in stages.

Copy protection is another issue which is still evolving, general consensus is the 40 character code proposed will be easy enough to hack, but it will simply present the consumer with a lock if they try to copy a DVD release. It will not stop pirating.

The VP of CIC Video International said at REPLitech that Hollywood is starting to realise that Asia doesn't wait for it. There were 50 million CD video disks (CD video is heavily MPEG compressed, quality is not great) sold last year in Hong Kong, the majority made up of local programming. "The West needs the East more than ever", he said.

DVD AUDIO

Whether DVD-ROM or Video leads is a moot point, sooner rather than later DVD audio releases will start to flow.

DVD audio releases will complement CD for now. Most consumers who buy DVD players won't initially have a surround sound amplifier and speaker combination, and most recording artists either can't afford or won't be able to find a DVD producer in the early days. But world leading recording stars will produce DVD surround sound releases, probably with still images and info files on board.

One small niggling problem is that the DVD consortium haven't agreed on the DVD audio spec. Short money has the format as 5 channels of audio, (left-centre-right with 2 rear), and a 96kHz sampling rate, 24 bit. But something lesser could emerge. Also the major record companies are dragging their heels at every op-

portunity because (B) they don't want Sting or Prince or Someone Famous INSISTING on the next release being surround sound, due to costs; and (B) they also don't want more than 74 minutes of audio on the thing, again due to costs.

CD is not under immediate threat here. But DVD audio will prevail eventually, and remember a DVD player will play CD too.

DVD-ROM

I don't really need to spell this one out - any reader with a CD drive knows their 8x reader only just gets the 600 odd Mb of material off the CD-R. Imagine a DVD-R with almost 5GB of program on board! This is very scary stuff. Of course the DVD-RAM proposal is almost nirvana to every connected soul - - oh, but to be able to write AND re-write almost 5GB!

THE REPLICATORS

In Australia Southern Star have ordered a DVD line, making them first. Sony operate 6 CD lines at Huntingwood in Sydney's west - with room for another 6 lines. They can upgrade existing lines or add new machines.

Daniel Segel from Sony was at REPLitech and very DVD savvy. He says the really big issue won't be upgrading lines, it'll be quality control and testing. Sony have 2 of their lines presently minting CD-R, which is considerably less tolerant than straight audio CD. DVD will be another story again because of the need to bond two 0.6mm disks together.

Initial DVD production at any plant will be a tremendous learning curve and transition, so it may be beneficial if the consumer uptake is slow.

RECORDING STUDIOS

Post Production is where DVD is starting to impact right now, and we will explore the effect of this in forthcoming issues. Music and audio recording facilities don't need to do anything yet except to keep a running watch on events.

Mastering houses are affected almost right away, if they use Sonic Solutions they are in for an easier transition as Sonic have stolen a march and released DVD Creator, it's 24 bit compliant.

The future holds new challenges

REGENCY BUY CD LINE

NEWS

By Dan Cole

Adelaide CD has ceased operations whilst its plant machinery has been bought by Melbourne firm Regency. The acquisition is a part of Regency's strategy to 'keep pace with technology changes' and increase their presence in the market. This brings the number of CD manufacturers in Victoria to three.

"We were doing a considerable numbers of CDs through brokerage," said General manager Simon Murphy, "It was getting to the stage that if something became available at the right price we would buy yet in relation to our five year plan it came around quicker than we anticipated."

According to Regency it was a link that they were always planning since they moved to their new premises in Melbourne at the start of 1995.

"We can now do project from 'Go to Whoa', taking any mastered format, have the stampers made then replicate the CDs. This is with 2 colour printing, assembly and

and new, exciting roles for recording engineers. There may well be a new kind of engineer - a 'DVD producer', almost - who conceptualises the kinds of surround sound mixes that artists want or need.

SSD go DVD

(continued from previous page)

manufacturer, pressing or replicating in-house whereas at the moment they operate as a large CD broker manufacturing externally. "CD ROM multimedia as well as CD Audio people come here as they know us through video.

"In terms of cassette duplicating we have a couple of mastering technicians who make up high speed loop-bin masters. They know studios and we can refer them to studios that use us. We will make a sample tape and send it back to the client for confirmation that it sounds good, track listing etc. It is their creative work so it has to be right so it is all approved in writing by the customer before duplication commences. We have done up to 500,000 runs this way."

dispatch. Our mastering process is nor oriented to CD-R production at the moment although that is an upgrade that we can do later on."

The mastering process employed by the CD plant is different to conventional glass mastering found in the three manufacturers in Australia. The plant employs an American system called Firetrac where the pressing master is a polycarbonate disk rather than a glass master.

The system came on line in early October and the first CDs were produced on the 1st of October, 2 days earlier than planned,

"Staff have also come across with the plant. We are now a CD manufacturer. It is a step forward having dealt with cassettes Australia wide and NZ.



DVD CONFERENCE AT ENTECH 1997

Because this is a vital, important, and exciting technology, ENTECH will host the first Australian DVD Conference next April 22nd in Melbourne. It was a blunder or just ignorance that the Melbourne Audio Engineering Society convention failed to address DVD, it is also extremely significant that internationally the AES are not part of the DVD consortium. This has earned them no friends, with suggestions that AES is holding meetings still to decide who will be on their latest committee. Truly, if ever a standards association was in need of a fresh start, it is AES.

DVD and Pro Audio - The Conference, is a one day forum to be held the day prior to the opening of exhibits at ENTECH 1997 in the Melbourne Exhibition Centre. Local and international guest speakers will be announced by January.

• More details online from www.conpub.com.au or call 1-800-635-514, fax +61 (0) 2 9876-5715.

MASTERING IS THE KEY

Dan Cole finds Independent Mastering Houses are actually doing well, despite Studio's flirting with CD-R masters

The profile of mastering has been raised to the extent that some artists actually list on the CD the mastering engineer alongside the producer and engineer. Everyone has to master but where and who? One Sydney based mastering engineer is Rick O'Neil who spent 10 years at Festival as the Head Mastering Engineer. Some of the projects he has been part of have gone on to sell squillions, as in Kylie Minogue's case.

He now works for himself as a mastering engineer in Kings Cross and his operation is called Turtlerock. He makes it clear that there are specific issues with mastering that are often overlooked or discussed such as the advent of desktop audio systems.

"It's a concern when desktop audio operators will make what they call a master. In terms of professional release standard these masters will not come up to

scratch," Rick O'Neil explains, "It bothers me that you can now spend \$20,000 [on software/hardware], buy a DAT and you're doing mastering, some for \$35 per hour. These people then assume that they can do *You Am I*."

If mastering becomes too cheap and unqualified that will be reflected in the product produced by Australia.

"I have about 300K worth of equipment and I have spent the last three years sourcing equipment and information from around the world. As well, the studio here is a nineties room." Mr O'Neil continues, "I have a NTP limiter (as used by Bob Ludwig) and have ordered a Manley stereo valve limiter. I'm also using the Apogee 'soft-limit' function (on the converter) which makes the record considerably louder and clearer, as well, I run everything at 20-bit rate. I also have this years

Apogee Super CD encoder which allows me to keep 20-bit detail on the CD. Everything in the studio is digitally re-clocked to the same jitter clock which gives me the best digital and analogue signal path around."

SAME QUESTIONS:

Having left the confines of a large company Mr O'Neil now, more often, comes into contact with smaller acts who would otherwise could not afford other mastering operations. Their questions, it seems, are the same.

"People making their first record come to me and I spend half the night answering their questions about what to do next! In fact I think the easy part is getting a record contract but the hardest part is getting a punter to part with \$30. That's hard. In fact 94% of all Australian released do not make their money back ..."

According to Rick O'Neil mastering in Sydney is as 'healthy as can be'.

"There is enough business for me, Festival and 301 for the next 20 years. Having said this there are too many mastering facilities in Sydney but not enough really cheap mastering engineers for compilation material that airlines, video shops etc require. These should be done in a lean and reliable mastering facility not at home on a Macintosh."

Because there is now a range of high-end local facilities and skilled engineers, Sydney bands (and interstate) can master their material to international standards yet according to Mr O'Neil bands cannot record or engineer their material at the same level.

"The equipment and people are just not here," he says, "The bottom line is the top-end information; the stuff above 16 kHz. Australian recordings at the moment have no high energy information; you can't hear the room. In most cases the vocals and bottom end is right but there is always very little air.

"I spend my time putting air and space back into a recording

and there is only one way to do it — with extremely high grade mastering equalisers (at \$5-\$10,000 each). Consoles can't do it."

With mastering not are you paying for a technical and specialised craft but above all you should be able to relax, knowing that your material is in good hands (and ears).

MAKING MUSIC 'SIT' WELL

Apart from producing material to specifications for the manufacturing plant, whoever is mastering must also know how your material will 'sit' in different acoustic spaces. Mr O'Neil makes the point that the well known mastering engineers know exactly what is required because the material they master is in circulation — in other words the music they master is being heard and not buried.

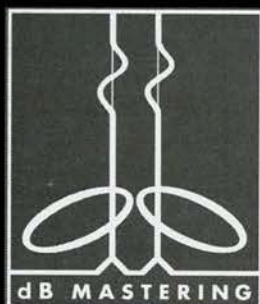
"The large mastering houses get immediate feedback from the market place. Whilst walking through Grace Bros I heard a track I did. A mastering engineer who is mastering the \$35 per hour job is not hearing their product in the market so they don't know what it sounds like.

"[when beginning the mastering process] The initial questions have to be: where is this project going, radio? dance club? TV? The sound of the mix must be tailored to that market as well as making sure track 3 sounds good next to track 4.

"I charge \$100 and that isn't cheap; it's equivalent to a doctor or any other professional occupation. For that I make a master that is fool proof: any one can make a master from it.

"Soon there won't be a studio business but there will be mastering. Turtlerock is a people business. I see it as a long term commitment to Australian music so I'm still here in 15 years time. I talk to a lot of young artists and try to help them because for me mastering is a passion."

• Turtlerock, T 02 9358 4955.



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KATHY NAUNTON ROBERT RACIC

AUDIO MASTERING SPECIALISTS

AUDIO EDITING SPECIALISTS

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DARLINGHURST 2010

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FAX 02-9380 6971

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ADELAIDE SA 5000
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F 08 8212 7228
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alatatd@senet.com.au
Managing Director:
Al Sankauskas
Sales Manager:
Algis Karazisa
Mastering Engineer: Phil Hibbard
• Digital sound suite caters for pre-mastering using a SoundScape hard disk recorder/editor. One-off CDs, CD runs 500, 1000, 5000, 10,000, Real-time cassette duplication, fast speed duplication.

Audio Cassette Duplicating Company

69 Parramatta Road
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T 02 9748 6055
F 02 9748 6152
Contact: Ian MacKay
• All duplication and replication from cassette to CD. Large and small

quantities runs and in-house artwork, mastering and photographic facilities. PMI agents.

Audio Partners

174 Wecker Rd
MANSFIELD QLD 4122
T 07 3343 7444
F 07 3343 7900
Email:
gajensen@iaccess.com.au
Contact: Ed Van Maanen
Graham Jensen
• Mention this listing and get the 'Guide to CD and Cassette Duplication'.

BASF Australia

500 Princess Hwy
NOBLE PARK VIC 3174
T 03 9212 1500
F 03 9212 1514
Sales Manager Duplication: Barrie Ellis
Sales Manager Studio: Yuri Schwatschiko
Marketing Officer: Irene Behrend
• Marketing and supply of bulk audio and video tape to duplicators and loaders. Specialist audio and video

products for studio recording and broadcasting.

Benedisc

PO Box 152
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T 02 9901 3133
F 02 9955 1528
Contact: Murray Bennett
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C'est Ca A/V Services

PO Box 319
FITZROY VIC 3065
T 03 9419 1506
F 03 9419 8770
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CD Makers

(At Tiger) 3/35 Mitchell St
McMAHONS POINT NSW 2060
T 02 9922 4700
F 02 9922 3604

Contact: Andrew Host
• One-off recordable CDs, one or multiple copies. Editing and compiling available using Sonic Solutions. "No Noise" noise reduction also available.

CD OZ

Unit E 8, 42-62 Maddox St
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T 02 9310 4355
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F 03 9802 5027
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Chapple CD Laboratories

Victoria:
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DINGLEY VIC 3172
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F 03 9558 1139
Contact: Peter Saultry
Queensland:
Unit 2, 19 Taree Street,
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QLD 4220
T 07 5593 4105
F 07 5593 6105
• CD-R and multi media production, audio cassette duplication, CD and CD-R replication. Custom printing available.

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283-285 Glenhuntly Rd
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T 03 9532 8710
F 03 9532 8712
Contacts: Ganis Stevens, Jason Tucker
• CD Manufacturing, CD-Audio, CD-Rom. One-off demo's to large quantities. Multi-image, 3D Cover

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dB Mastering

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66 Oxford St
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T 02 9380 6991
F 02 9380 6971
Email:
sav@magna.com.au
Contact: Kathy Naunton, Robert Racic

Dex Audio

393-399 Macaulay Rd
KENSINGTON VIC 3031
T 03 9372 2266
F 03 9376 5118
Contact: Sales Department
• Dedicated CD mastering suites, one-off CDs, CD manufacture through PMI, On-site manufacture of blank and duplicated cassettes, Art department.

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• CD Mastering using Sadie Disk Editor. DAT, 1630, CDR and Analog Formats.

Disculture
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PYRMONT, NSW 2009
T 02 9660 8999
F 02 9660 7916
Contact: Jason Nairnsay, Nick Rice
• Offer a free service arranging any recording

or mastering. CD manufacture and distribution packages available.

Disk-Edits
60 Ormond St
HINDMARSH SA 5007
T 08 8340 1377
F 08 8346 3081
Email: nclark@camtech.net.au.
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• Specialist CD pre-mastering. South Australian service centre for Pacific Mirror Image. One-off CDR service. Full CD-Audio/CD-Rom

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Event Sound People
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T 06 242 9955
F 06 242 9956
Contact: Lindsay Geeling, Mark Buckley, Jenny Buckley
• Cassette Duplication. Minimum run of 50 cassettes. Labels can be supplied.

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F 02 9759 6905
Contact: Peter Wakefield
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T 02 9899 4044
F 02 9899 4085
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Web Site: http://www.powerup.com.au/~oracle
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Pacific Mirror Image
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LANE COVE NSW 2066
T 02 9418 3044
F 02 9418 3175
Contact: Greg Borel
Melbourne:
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BRAESIDE VIC 3195
T 03 9587 2633
F 03 9587 2901
• CD and CD-R manufacturer

Paul Bryant Mastering
69 Parramatta Road
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T 02 9748 6055
F 02 9748 6152
Contact: Paul Bryant
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Email: procopy@msn.com.

Web site: http://www.ozemail.com.au/~jdoobson/pro.home.html.
Contact: Lyndsey Knight, Mark Whitehouse
• High-quality audio cassette duplication, artwork preparation, on-cassette printing, CD packages and Sonic Solutions mastering and CD-R replication. State distributor for BASF.

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F 1 800 654 975
Email: quantsyd@ozemail.com.au
Web site: http://www.quantegy.com
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F 03 9427 9107
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Contact: Stephen Morgan
• Recording Studio. Editing/mastering with Sonic Solutions "No Noise" System.

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DUPLICATION & REPLICATION

IN HOUSE THE KEY

Dan Cole reports on expansion at ACDC (not the band!)

AC-DC (as it is known) is actually the Audio Cassette Duplicating Company. This Sydney based medium sized duplication and replication firm specialise in a range of different sized projects, from demo material for major labels to complete packages for bands and artists. They have only recently moved into a new and 'much larger' warehouse located in Silverwater in Sydney and are still adding new facilities.

The first room to be complete is a specially designed mastering room run by Paul Bryant. Co-directors Ian MacKay and Clive Lipman are well known in their industry and Ian MacKay outlined a few pointers for people looking to mass produce their material.

"The first question [for a client] to ask is what quantity they *really* require, said Ian MacKay Managing Director. "Five hundred is the

minimum (usually) and there is not much point in ordering 1000 if they will only sell 500. There is quite a few CDs sitting under beds around Australia ..."

Mr MacKay suggests doing a CD run of 1000 in two stages. He estimates an all up figure of around \$2000 for the first 500 then around \$1000 for second. According to Mr MacKay these prices include design, artwork, glass master, printed booklet, cases, and tax.

"That is the sort of price you will need to budget on. You could get cheaper quotes but more often than not they neglect to tell you that you need to supply your own film work (for artwork printing). In terms of artwork many bands have a friend in the industry who is an artist and we don't mind if they do their own artwork because the more they do the more we take off the price.

"We have an art department which is fully Macintosh equipped and will soon add a full photographic studio to our complex."

Some other planned developments at AC-DC:

- A second mastering suite;
- CD burner for one-off copies and special projects;
- A media conversion room for transferring a mastertape (from any format) to CD for client reference purposes;
- Large quantity of real-time cassette duplicating system.

Although there are many firms offering similar services at similar prices it is important to note that money is not the only consideration as Mr MacKay suggests,

"The bottom line is that people have to feel confident and comfortable with the people they are dealing with. If they get the feeling that the company is not telling the whole truth then it's time to look somewhere else."

• Audio Cassette Duplicating Company, T 02 9748 6055.

Broker Blues?

TIPS TO KNOW!

You have the master-tape- where do you go for its replication? More often than not you will end up talking to a broker. They are also known as resellers, agents or service centres yet brokerage is the term most often used.

The broker liases. This is because there are not many CD factories around yet there is a high demand. Some manufacturers will handle direct inquiries but in most cases it will be more expensive than a broker. In most cases inquiries will be directed straight to a recommended broker or agent.

"The factories would prefer someone to collate all that stuff and then send it to them in a block and be invoiced monthly," says Mastering Engineer Paul Bryant, "They don't want to talk to every band that is doing 500 CDs, chase

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TURTLE ROCK

THE TURTLE ROCK PRODUCTION COMPANY SYDNEY AUSTRALIA



MASTERING IS AN ART

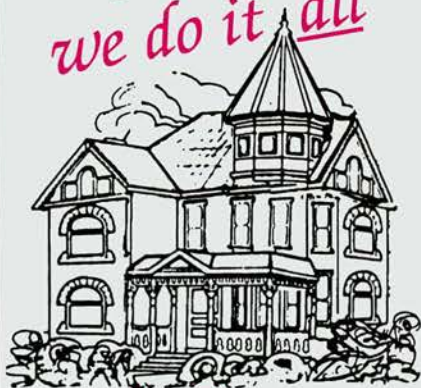
At Turtle Rock we understand that mastering is an art, a skill refined by years of practice on many thousands of records. Turtle Rock is owned and operated by Rick O'Neil a professional with 12 years mastering experience. Rick has mastered records that have sold millions world wide. So come and have a look at our new room, it is simply the finest in the country... level 2 /34 KELLETT ST Kings Cross . \$100/hr call Rick (02)9358-4955

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T 09 405 3788
F 09 306 2177

Contact: Andy Priest
• Cassette duplication,
artwork, printing, CD
production and
photography.

Shock Distribution

24 High St,
NORTHCOTE VIC 3070
T 03 9482 3666
F 03 9482 3873

Contact: Bronwyn
• CD Distribution

Silver and Ballard Pty. Ltd.

3/43 Herbert St
ARTARMON NSW 2064
T 02 9439 5355
F 02 9436 2705

Contact: David Hagen
• Specialise in audio
cassette duplication,
including printing and
packaging, CD replication
and CD printing. Blank
audio tapes and video tape
duplication.

Sony Music Entertainment Australia Pty Ltd

60 Huntingwood Dr
HUNTINGWOOD NSW

2148

T 02 9839 0222
F 02 9839 0202

Contacts: Gerard Andrew,
Daniel Segal
• CD and CD-R mastering
and manufacturing

Southern Star Duplitek

1/22 Euston Rd
ALEXANDRIA NSW 2015
T 02 9519 2677
F 02 9517 2530

Contact: Geoff Thurstan
• CD replication, cassette
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Small to large runs.
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services. DVD pending.

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23 Johnston St
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T 03 9417 7707
F 03 9417 5294

Contact: Paul Higgins
• Recording, mastering
and CD replication and
cassette duplication.
Printing and artwork in-
house.

Summit Technology Australia Pty Ltd

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WATERLOO NSW 2017
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F 02 9319 0887

• CD manufacturer

Taramalin Sound

31 Bellatrix Drive
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T 07 3208 9736
F 07 3208 9736
Contact: AllanLahey
• Multitrack Recording,
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14 Jedan Court
ROWVILLE VIC 3178
T 03 9755 5711
F 03 9755 5922

Contact: Karen or Sakis
• Mastering and CD
mastering. Packaging,
cassettes, artwork,
printing.

The Refinery Mastering

Unit 3/21 Enogera Terrace
RED HILL QLD 4059
T 07 3367 3777
F 07 3367 3777

Email:
100242.1542@compuserve.com
Contact: David Neil, Wes
McGregor
• Full Mastering Services,
audio restoration and
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Refinery will be taking
delivery of a Sonic
Solutions 96k/24-bit
mastering system early
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Troy Horse Studios

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F 02 9698 9494

Email:
loopyz@enternet.com.au.
Contact: Kitty Blackman,
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DUPLICATION & REPLICATION

Brokers (continued)

their artwork, wait while their master is copied or whatever.

"The broker collates all the stuff, takes care of the accounts, sends the whole thing off to major manufacturer. In other words, the broker takes the risk."

All brokers or agents work on a discounted margin which is volume based. In theory the customer should not pay any more than the list price from a manufacturer, in some cases, if they are a large firm with a high turnover, their buying power may make them cheaper.

There are different types of brokers. The single operator who takes your material and then subcontracts out every process; the value-adding broker who has in-house services and; actual recording studios who do the lot.

"Small brokers don't have anything to do with recording the band nor do they know the band, do any artwork, film they are not involved with the project." said

one industry professional, "They just make a phone call and send it off. Some are just an office, subsequently brokerage is not as profitable as it used to be whilst becoming more competitive with less service."

The broker offering a value added package typically has in-house art dept, mastering or compiling equipment and can provide printing, subcontracted out.

"There are a couple of middle operations such as Oracle Records," says Alan Lam from Taramalin Sound in Brisbane. "They have arranged a bulk buying price with the manufacturers and most people in Queensland are going through them. Anyone who deals direct with a manufacturer will pay full price."

"We had a couple of middlemen brokers pop up over the last 12 months but I'm just waiting to see what happens with them before I send any material to them" says Alan Lam.

The bottom line? Try to understand exactly what you're buying!

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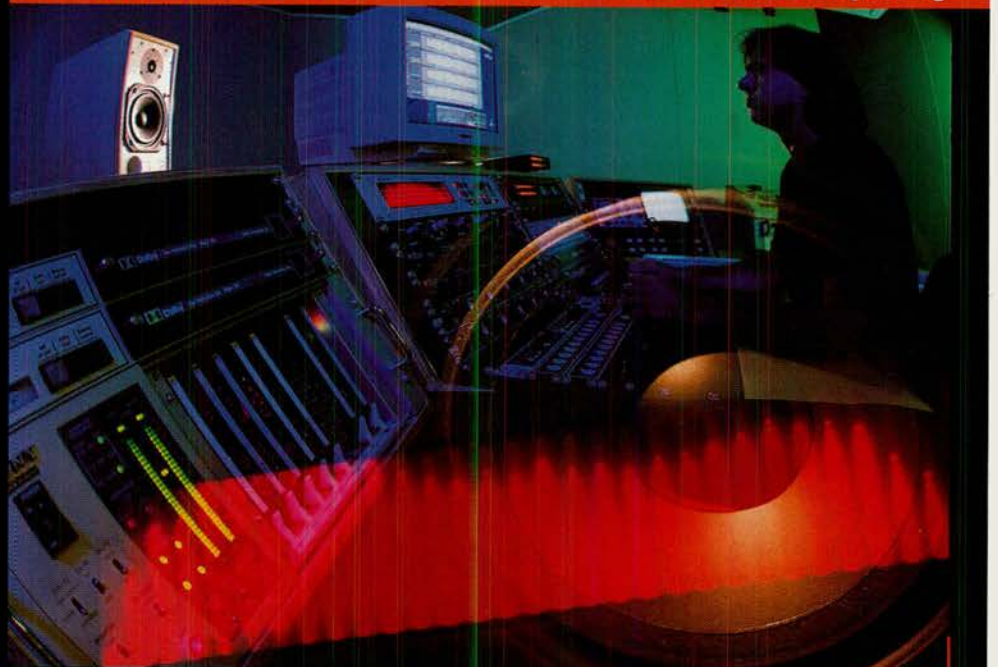
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ROUGH RIDERS

Welcome to Rough Riders an occasional column taking a light-hearted look at Artist's Riders: information sent out to promoters and venues detailing an act's requirements in terms of catering, technical needs etc..

I recently caught a glimpse of k.d. lang's Rider from her recent national tour. It had a very special addendum added to it on page 56. It stated and I quote: "k.d. lang, as well as many members of her entourage are dog owners. If in accordance with local law, we encourage Purchaser and Venue staff to bring their dog (s) to the engagement!"

Now my first reaction was that this was a case of severe piss taking by the visiting Canadians keen to test out the infamous Aussie sense of humour, but I checked with the tour manager and he assured me it was a legitimate request.

I must have still had that sceptical look on my face because he took me around backstage and opened several road cases. I was stunned, instead of the usual family photos taped to the inside of the lids they were all photos of dogs!. Big ones, hairy ones, thoroughbreds, mongrels, they had the lot.

The tour manager asked me if I had a dog and I said sure Bluey's my best mate. He then handed me a couple of passes for the gig and apologised when he said only one of them was an access all areas. The other entitled the holder to a seat somewhere in the bleachers.

I was quite miffed when he said make sure the dog gets the access all areas pass. Bluey had a great night. I was sure I spied him through the binoculars with a few of his canine mates, one paw resting comfortable on the fold-back desk; sunnies on and a big grin on his face.

He hasn't been the same dog since. Leftovers used to be fine for him, now he only eats steak; grilled and preferably well done. I think he picked up a few tips in the star dressing room after the show as he downed his dish of Moet!

Rufus B.

If you have any wacky or funny requests from artists, please send them in. Remember, no tale is too bizarre!!!!

Tizz and THUMP

Part 1 of a look at setting up sound and tuning

I'd like to talk a bit more about setting up sound and, particularly, tuning.

So the PA's up (or with in-house, fired up) and you've checked each box individually to see if all the speakers and horns are working fine. If you're tuning from scratch, flatten the FOH graphics and desk channels, then whack on a favourite CD, or better still, talk into the system to get a balance with the crossovers or processors of low, mid, hi. If you get a good balance with the system flat, it makes the whole job so much easier.

A good place to start your gain structure, is pad off and gain knob back to about 7 o'clock on the channel you're talking into. Bring up your channel and sub-group faders to zero, and the masters up to just before zero. Give it a really good yell, and by looking at your meters, you'll see how the desk is running. Then by using your graphic and limiter, adjust the gain to drive the amps without clipping. Never drive your desk too hard. If you need more volume just turn up the gains after the desk, but remember to check if your amps (and speakers) can take it.

Lots of people swear by their method of tuning, whether it be by CD, or, if you're lucky a spectrum analyser, or whatever. But a PA is most importantly designed to amplify the human voice to cope with the racket the band makes. If you can make the most complicated instrument of all (the voice) sound clean, transparent and clear, guess what, everything else should sound good.

Right, so get your best vocal mic (make sure it's the same type the singer is using) and really work on getting your voice sounding as natural as possible. Give a good yell, like a singer would. Keep the desk channel flat, and if you have a high pass switch use it, if not roll the bass back a bit.

You'll probably find with most PA's that the usual peaky areas are around 150 to 300hz, 1.5 to 2.5khz, and 3 to 5khz.

Don't be afraid to boost (yes, boost) a band,

ROAD WARRIOR FELIX



and if the graphic is looking pretty drastic then recheck the crossover levels. Bad speaker or box combinations may also be to blame.

Whack a tape or CD in. It should sound pretty good by now. Maybe add a bit of 8 to 12khz and 60 to 80hz for "tizz and thump".

Now, while talking into your mic, slowly bring up the level to check for bad rings and hums. When you hear a lot of rings and hums at the same time, you know you've reached the limit of the system, so set your limiter just before this point.

If you find yourself pulling out lots of frequencies, it means you're pushing the system too hard. It's better to have it running a bit quieter but nice and clear than louder and too coloured. Now try testing with reverbs and other effects for final EQing.

Time to tune the low end. Hopefully the drum kit has arrived (drummers are usually first on the scene). Mic up the kick drum, checking the drum itself sounds good. Now get the happy drummer to kick away while you experiment with mic placement and with the graphic on frequencies of 120hz and down.

You'll probably find yourself pulling lots of low mids out, and pushing the hi's on the desk EQ. Work for a deep solid bass without rings and keep an eye on your amps.

If somebody hasn't come out yet and told you to turn that bloody thing off (try to work fast), get the band up for a sound check - drums first, concentrating on a tight kick and snare sound. Then it's the backline, making sure you've left plenty of headroom in the system for the vocals to cut through. If you've tuned up correctly, everything should be pretty easy (depending on what the band sounds like).

Part 2 next month

Felix has his own company Danger Sound Production Hire, reach him on 015 497 761.

The Big, Round Sound of Farnham

By Julius Grafton and continued from page 5

Whereas a 31 band, third octave equaliser offers only fixed frequency centres (at a third of an octave each) and a fixed 'Q' (or centre width). The output curve is shown on a screen on each Vari Curve unit. They can be - and were - controlled from an SPC 900 controller, allowing all functions to fall in one place. Klark Teknik time delays were used where required, and the various system drive outputs (top, mid, low MSL 4's, subs, UPA 2Cs front and floor, were all boosted through Meyer LD 1 line driver units for the long trip to the rig. (PA neophytes may be surprised to learn that even the biggest PA simply relies on a line level signal of around 1 volt appearing at each amplifier input!)

Finally the actual system output was measured and monitored on a Meyer SIM System II sound analyser. This gives the system engineer a complete picture of how the system is working within the room in an architectural acoustics sense, with up to 8 remote microphones at different positions in the house providing the measurement source.

At the FOH console long time Farnham engineer (and ENTECH live sound mixing award winner for the previous Farnham tour) Grant Walsh mixed on a new Midas XL-4 console, with a Yamaha Pro Mix 01 submixer. He also recorded each show on a Tascam DA 88 / DA 38 system of four machines for 32 tracks. Most outboard effectors commonly available in the free world were racked all around the mix position.

To cap the all-new approach and expanding the technical chore, virtually the whole show worked with wireless microphones and every performer used in-ear monitors. So there were no - nil - foldback speakers anywhere. Thus the foldback was mixed from the FOH position, where John Henderson worked two Midas XL 3 consoles with more outboard gear than most FOH engineers use!

No speakers means no equalisers, no crossovers and no foldback amps - which usually sit around a foldback engineer in his / her cramped side stage zone. This tour has the engineer out front without warring racks of amps. One thing in profusion were compressor/limiters, because everyone worries about out of control

signal bursts inadvertently going to the in-ear monitors and harming a performer.

One of the biggest adjustments an engineer must make when mixing for in-ear monitors is the ambience, so microphones were placed around the stage floor pointing out to the audience - to give the artists some idea what was happening between songs.

Also, reverbs need to be applied for some mixes to compensate for the lack of delays and room waves. Because the artists are virtually audibly sealed off from the world! Generally also each mix is fully stereo, so the number of actual mixes increases.

FARNHAM'S (VERY) BIG WIRELESS WORLD

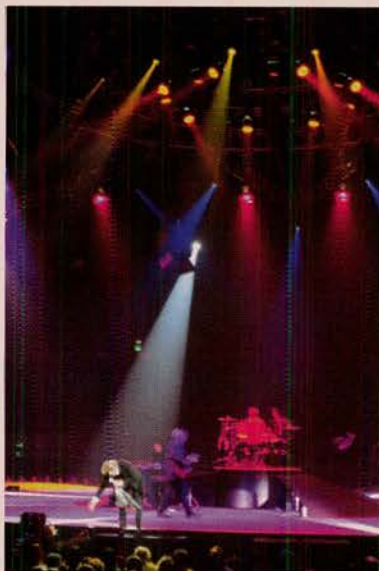
There hasn't been a show in Australia or anywhere else as far as we know which uses wireless technology to this degree.

Conrad Hendericks works for Murray Tregonning & Associates who are the wireless contractors for the tour. They have assembled 40 systems in total. These are made up of 20 Shure UHF systems, 9 Shure VHF systems, and 11 channels of Garwood Radio Station in-ear monitoring.

The 20 Shure UHF transmitters are a mixture of Beta 87 and 58 handheld wireless mics, and pocket transmitters. Some pockets act as wireless links, for example a segment of the show has a small wireless

drumkit with 2 x Shure 98A mics plugged into a battery operated Shure FP 3 location mixer. It becomes a 'premixed kit' of kick, snare and hi-hat. The drummer does the mix and hears it on his headset. He also has 2 roto toms with SM 98A mics plugged into a mixer with another pocket transmitter.

The main Drum kit has 12 wired mics, and



sits or its own rotating round riser in the centre. The multicore has a limit, it can rotate 5 times one way and 10 times back which isn't even the limit of the cable strain.

On the main rotating stage is the keyboards, a Roland grand piano and synth, both battery powered and sub mixed on an SQM 4 channel mixer to stereo, with pocket transmitters for a left/right wireless link.

The guitarist/singers have a U-1 body pack with a Crown headset with a Shure momentary locking pocket switch to turn themselves off between vocals. Because of the in-ear monitoring they can hear the audience coming back through their mic when turned on.

There are 8 Shure LX VHF pocket transmitters for guitars and saxes, and 2 for the stage managers mike.

The wireless system antennas with boosters are located at the FOH, as is the monitor mixing station.

For audio coming the other way - back to the ears of the performers - are the UHF Garwood radio station, in-ear monitoring systems. There are 9 with a spare, and 1 for the monitor engineer. John Farnham has extra protection on his in the form of an Aphex Dominator II limiter.

Conrad had just ordered 100 dozen AA, and 100 dozen 9v. He spends half an hour a day just checking batteries.

A real neat touch are the Hicom Broadband scanners for the stage techs, so through headsets they can tune into each of the band mixes, and keep tabs on the guitar systems for example!

Smart technology, and the only glitch is when an audience member uses a mobile digital phone nearby. Not because of frequency conflict, rather RF splatter. A general industry wide push should see mobile phones banned from the performance space.

MEATLOAF

born to rock

After a successful tour of Europe, USA, Japan and New Zealand, the big man arrived in Australia. Actually he's not so big having lost 75lbs but he still has an immense stage presence.

Lighting designer Bill Sheldon has worked with Meatloaf for the past six years. He describes the tour members as "a family", in fact Meatloaf's daughter is backing singer, and he call Meatloaf "Uncle Meat".

"There's none of that drug thing or anything like that," said Bill. "Everybody knows everybody and it's real comfortable."

The "Born To Rock Tour" followed the "Everything Louder Than Everything Else Tour" which relied heavily on pyro. This time round Meatloaf wanted to rely heavily on video, at the beginning of each song rather than during it.

"I've had to keep the trussing above 24ft so that the video screens work everywhere," said Bill. "The design had to still be very rock'n'roll even though the show is quite theatrical. Each song starts in blackout with video footage from old black and white films edited by the guy who used to do the comedy programme *Dream On*."

The lighting rig consists of 340 Par 64's with all very narrow lamps on the upstage trussing. In Australia, 26 Golden Scan HPE's were used down from 32 in the USA.

Some of the production, including a circular centre truss where the extra HPE's lived, had to be cut down due to freight costs. Other lighting included 8 Terrastroses, 8

Molefay lamps, 6 x 4way Molefays with Colourmag scrollers to light up back drop and all the trusses had truss toners with scrollers. Smoke was from 2 F-100 smoke machines, 2 oil crackers and 1 dry ice machine.

"I have the 2 F-100's on stage as backups so if the crackers don't keep up I can switch them on from the console," Bill said. "I'm using a Celco Gold and a Compulite Animator control desk as well as the Colourmag control desk for the scrollers. The Animator is originally from



Creative Stage Lighting in New York and I've taken it around the world twice. I've had it three years now. I tried a few desks but I was very impressed by the Animator's hand-held remote. This little remote can do everything

you put moving lights in front of me with a console, I'll figure it out. I don't have to go to school for three weeks to learn how to push buttons. I wanted to find a light which I could just get and use so, at the time, Clay Paky were just about the only people with a 1200w HMI lamp out - the Golden Scan 3. I've stuck with them ever since."

Bill occasionally teaches people how to use the Compulite boards. He believes that people are often afraid of them because they have a lot of buttons but once they know how to use them, they find them very user-friendly.

Bill recently used Cyberlights which he liked and will be using again in South Africa as they could not afford to ship HPE's there. Hopefully Bill will be able to tell his Animator console that he has different lights and everything should be hunky dory.

"I should be able to run my cues through and the lights should come pretty close to doing everything that the Golden Scans do," Bill said. "A lot of the DMX channel set ups are the same.

Meatloaf can be unpredictable with his mic technique. Sometimes he likes to stick the mic up his nose.....

the console can. It makes focusing real easy especially when you're doing the sheds in the US where you can't focus until the sun goes down. It's been a great desk and they're always upgrading the software for you. I've run Vari*lites off it, as well as Golden Scan 3's.

"I was going to do Vari*lites but you had to go to school for three weeks at some cost, then take their tech out for another zillion dollars. This was five years ago when I thought Vari*lites were cool. I'm not a dumb guy, if



"Several bands use Compulite desks now, Pink Floyd had them and a Wholehog II which I don't like much. I don't like touch screens and only eight sliders. You have to be on top of the LCD screen to see it. I always run two consoles, one with all the generics and conventionals, but I'd love to find a console that does both the way I would like it to."

The set, including the inflatables, and the backline equipment was shipped over. Sound and lighting was supplied by Jands and the video gear from Big Picture.

Sound engineer was George Wehrlin who had recently worked with those nice boys *Oasis* and had nothing but bad things to say about them.

"I was a musician for many years but I got fed up with being poor so I started working for some sound companies," said George. "My first real touring gig was doing monitors for Joe Cocker. I've been with Meatloaf since 1990, starting as his monitor engineer. I think it helps a lot starting as a musician, the band can trust me as they know I'm a musician too not just a tech."

The mixing console was a Yamaha PM4000 fully loaded with ten stereo modules. George also uses a 24 channel mixer for effects returns and playbacks as he was using 50 channels off the stage.

"The PA system is not what I'm used to using," said George. "We have to make compromises but it sounds pretty good (Turbo TMS3). It's just a little dated. We've been using the Turbosound Flashlight system in Europe and the States which is a totally different sound. We also had it in New Zealand from Oceania which is a very good company. This PA is working pretty well, there's a lot of low

end and it's heavy in your face. It's not real hi-fi like the Flashlight system which can be tricky to operate and difficult to rig."

Effects included an Eventide H9000, a harmoniser for background vocals, a Lexicon 480L for Meatloaf's main reverb, SPX990 for a voice doubler, TC Electronics digital delay, several Yamaha SPX units depending on the gig, and a DBX120X sub-harmonic synthesiser for a big explosion sound during *Lemon*.

"There's a lot of information coming off the



George Wehrlin and Bill Sheldon

stage - 2 keyboard players, 2 guitar players, and 11 vocal mics," said George. "It's fun to mix with a lot of instrumentation not just bass guitar and drums. Meatloaf can be unpredictable with his mic technique. Sometimes he likes to stick the mic up his nose or cups the mic, so that keeps me on my toes. The music is very orchestral with big piano sounds as well as big rock drum sounds and layered keyboards."

The band are constantly moving around the stage going to different mic positions keeping monitor engineer Simon Hardiman busy. It doesn't have to be deafly loud but Meatloaf likes to hear the piano from which he gets his pitch and the high hats from which he gets his

tempo. The piano player and one of the guitarists wear ear monitors.

"I think we're using 20 mixes onstage," said George. "That's because we couldn't get the console we wanted - a Yamaha PM4000 monitor console which has 22 outlets. So we're using a Midas XL3 with 18 outlets and so we've had to double up a few of the spots. In New Zealand, Oceania gave us a XL3 which was nice but the one that Jands has is out with John Farnham whilst the other is abroad."

Mics are fairly standard with a Beyer M88 and Shure SM91 mixed on the kick drum. AKG414's are used for overhead mics, SM57's on snares, AKG409's and SM57's on guitars and the vocals are all Beta 58's. Meatloaf and Patti, the lead female singer, are on wireless SM87 Samsung mics.

• Cat Forcer

Golden Scan HPE's were supplied by Brian Anslow of the Lighting Workshop Perth (20), Ben Phillips of Ben FX Adelaide (4) and Scott McCreadie Eclipse Lighting Hobart (2).

Tour Personnel

Tour Management Craig Evans, Rick Fagan
Production Manager John "J.T." Thomson
Stage Manager Derek Hay Lighting Designer
Bill Sheldon FOH Sound Engineer George
Wehrlin Monitor Engineer Simon Hardiman
Head Carpenter Peter "Bear" Barna Carpenter
Martin Hodgson Video Paul Wood, Joe
Bonanno Rigger Nils Bendix Sound Techs
Mat Frankl, Davia Quinn, James Pavey Light-
ing Tech Chief Nicky Koumos Lighting Techs
Matthew Burden, Mark Harris, Dan Mihai
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LIGHTING THE BIG ROUND

Judging by the 'cohs and aaahs' uttered by the entering audience, the staging for the John Farnham *Jack of Hearts Tour 1996* certainly impressed. The lighting rig looked like a mother-ship hovering over a pristine landing pad and it delivered a punchy, effective light show.

The impressive stage was built by Bob Bishop at Stagewell and consisted of a revolve, a centre platform which could be lowered/raised to support a drum kit for part of the show and four 'arms' extending out towards the audience. The outside revolve could go at various



Chris Newman

speeds and in both directions. In all the stage takes about 2.5 hours to set up including setting up the backline which has to be done after the first section of the stage is built. Next the deck is placed on top of them making the diameter of the stage 15.5 metres. The drum section in the centre is 2.4m diameter.

"It's been as smooth as silk and quiet," said Chris Newman, lighting designer. "It's a bit like Luna Park when it's going flat out!"

The band are hardly ever static and extensive choreography was deployed in the show. In Melbourne there were five days of rehearsals and another two days in Brisbane before the first show.

"By the third show in Brisbane it was pretty smooth," said Chris. "The first show of anything is always rough anyway, you expect to see things you just can't rehearse, but for a first show it was great. It just needed ironing out."

Chris had his basic design ready last May, once it was decided to play in the round, beginning with the stage design and overlay truss design.

"Some things got dropped along the track

like a video component I had planned," he said. "I was then in America for a couple of months doing The Little River Band returning for pre-production at the end of July. John has always wanted to play in the round but up to this stage everyone had decided it was a bit too cost inhibitive plus the problems with monitoring was out of control. It was a matter of convincing him that ear



monitors worked which is fairly new technology anyway.

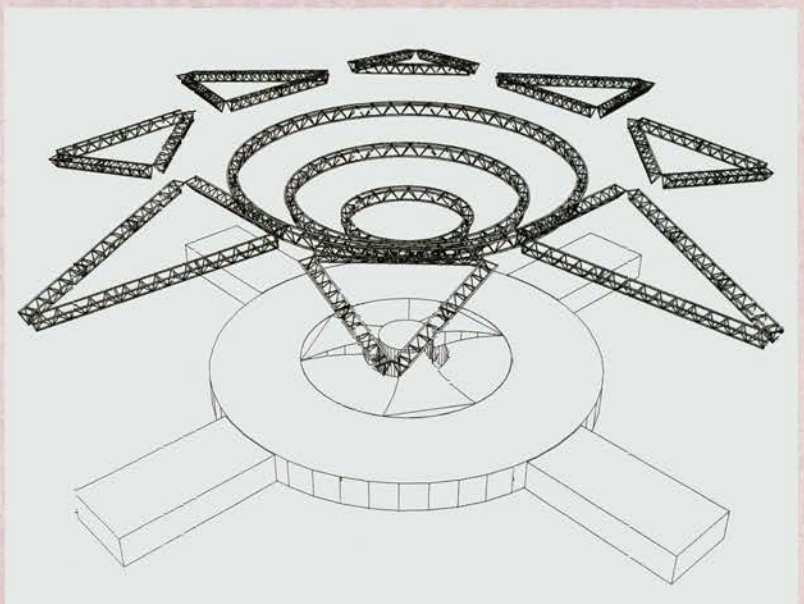
"I hadn't seen anything in the round before although I went to see Neil Diamond but Peter Lotman (Vari*lite operator) had done quite a bit in Europe and the US with Def Leopard and he was pretty clued up on ways to attack things. Once you see the thing in place, it just makes up it's way as it goes along."

Chris refers to the audience as his cycle lighting them with 18 8-light DWE's, with colour scrollers on them, positioned around the mother-grid. The mother-grid is a secondary

truss above the silver main truss. The triangle trusses were generic Jands truss' with new corners made to enable the right angles and dimensions to be achieved. The triangular truss for the triangles is Jands steel truss which has been powder coated silver to look aluminium. The circular trusses were made to order. The mother-grid is standard 18" steel concert box truss which picks up all the sub-hung motors.

"Nearly every point inside the triangles is sub-hung a half ton motor so all the circles are off half ton motors," explained Chris. "The insides of the triangles are off half ton motors and the outsides are on one ton pick-ups in the roof."

All three circular trusses move up and down, independently, as do the outsides of the large triangles. Vari*lites consist of 78 VL2c's and 86 VL5's all running through the Artisan Plus with the Mac outboard fitting. Added to them are 20 5K fresnels with Colorset scrollers which give most of the stage wash. Another 40 single par cans on the mid circle give a blue down wash for between song looks. Sixteen bars of ACL's beam onto the audience and the stage area whilst 8 Selecon profiles give a wash onto the centre section. Eight 8-light ACL units



ON TOUR

with Colorset scrollers also light the centre.

"The only drama we've had is the PA's height which is varying considerably in each room," said Chris. "In Brisbane we planned to have the bottom of the PA stack right up hard against the join in the triangles. However, that's not the case here so I'm having major problems with followspot positions as it's too steep coming off the house catwalks. Here in Sydney, we're having to use the back seating area for followspot positions which is a bit shallow. There are 12 FOH followspots all grouped into pairs so there's always a front and a rear on each person."

Chris had considered the Wybron Autopilot but with so many members of the band running about the stage, he didn't think it would be practical.

Marking the points takes about 1.5 hours as there are about 80 motors to mark for the sound and mother-grid plus the 30 sub-hung points. Another 1.5 hours is needed to mark out the floor for the riggers and 8 hours off the ground ready for the stage to come in. Although Chris has planned for the stage to be centre of the room where ever they go, it's no problem to move it a few feet if the catwalk is in the way. The mother-grid trims 50ft off the ground and the main rig 36ft with a 4ft stage underneath making it fairly high.

Chris is running a Jands Event Plus for the generic lighting and a Jands Hog for the colour scrollers. Four oil crackers are placed in each corner of the room and an F-100 is under the stage for the opening effect when the drum kit rises up.

With the cabling, there are looms running all through the mother-grid



back to a drop-off point where everything disconnects at a cable truss. A whole set of cables run from that end of the cable truss all the way back to the ground.

"It's like two separate entities," said Chris. "We rig and patch it on the ground but you can still do it as two different entities. It's cable-hell when you first come in. There are three motors for the cable truss, one motor picks up the end of the cable truss and two motors pick up the cables - it's 1700 kilos off the end of the truss."

Prior to the Brisbane and Sydney shows there was a North Queensland run with three trusses, 14 VL2c's and a couple of hundred par cans. The tour reverts to this system when it travels to Tasmania.

● **Cat Forcer**

TOUR PERSONNEL

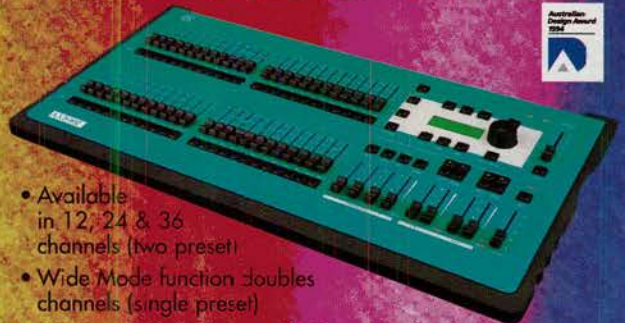
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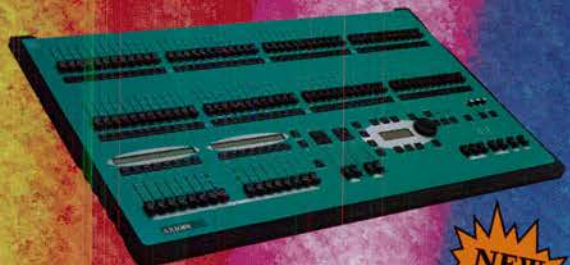


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LIGHTNING

MONTHLY

November 1996

Edited by Catriona Forcer

LXbizzBITS

PRODUCTS

PROGRAMMI SISTEMI LUCE NEW EFFECTS

Black Express Light & Sound now have three new lighting effects from the Italian company Programmi Sistemi Luce: **Magicstar** is sound activated with moving cones of multicoloured beams (\$675 inc tax); **Nightstar** has 20 sound activated beams generated from dichroic mirrors and gives a defined tunnel of



light for wide coverage (\$630 inc tax); and **Windstar** which provides multicoloured beams of light for a sound activated moonfower effect (\$630 inc tax).

READERS SERVICE NO 404

GLP LIGHT PRODUCTION

At PLASA, this German company showed their Patend Light which caused a lot of interest. Using a ROTO-head technique, every corner is reachable due to a double rotation of 360° without any stop. Maximum rotation is seven rounds per second.



The Patend Light has four rotating and two fixed gobos, high-speed iris, 0-100% dimmer, mc-edge colour wheel, and

high-speed shutter.

As yet GLP have no distributor in Australia.

Enquires to: Light Production GmbH +49 7248 5579.

CALCOLOR

CalColor is Rosco's new range of colour filters specifically for film and video professionals. It is designed to match the spectral sensitivity of colour film and each colour comes in four densities which correspond to the traditional photographic values of 0.5, 1, 2 and 3 stop calibrations. CalColor filters adjust the transmission of the blue, green and red components of the spectrum at the individual light source.

READERS SERVICE NO 406

Blue Heelers & Full Frontal

Mandy Jones visits Channel 7 in Melbourne

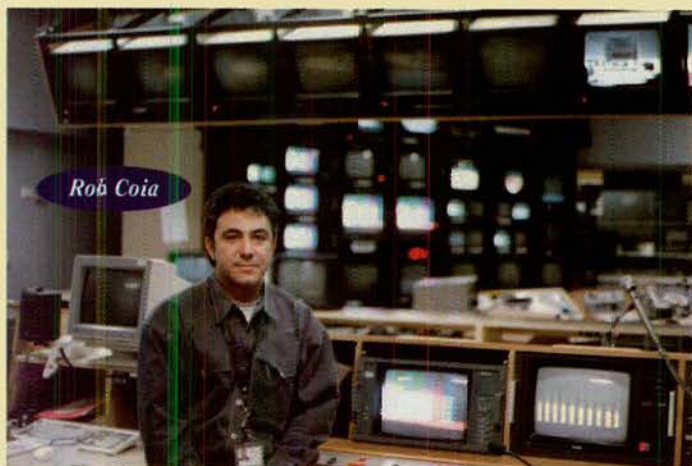
Channel Seven in South Melbourne is a huge television complex responsible for producing some of Australia's most respected and well-loved television programs. The complex consists of five television studios, countless dressing rooms, production and administration offices, and an enormous workshop.

I recently went to Channel Seven to meet Robert Coia, the Light-

ing Supervisor for Channel Seven, Melbourne, to find out about two of the different programs produced in Melbourne.

Robert takes me through the busy complex to Control Room 7, Studio 7 where we sit and talk about production on two of the network's most popular programs - *Blue Heelers* and *Full Frontal*. The control room seems oddly familiar to me - I later realise that it is the control room that became such a regular 'on camera' part of *Tonight Live* with Steve Vizard, produced in Studio 7.

As Lighting Supervisor, Robert is in charge of the Melbourne lighting department, from hands-on work, to the necessary administration needed to facilitate lighting every production made at the studios. Robert is in charge of new equipment purchasing which takes place after discussions with all seven of the permanent lighting crew



Rob Coia

"We tend to decide democratically - we discuss the needs of new shows that are coming up. Generally, for what we need to do we're pretty well equipped."

Studios 7 and 8 are well fitted out, and the condition of the lighting stock is good due to a motorised batten system. Lanterns are moved from bar to bar as required rather than undergoing unnecessary handling by packing and unpacking.

The lantern stock consists of 2.5/2.5 switchable 5k fresnels, 1k, 2k and 5k fresnels, softlights and par cans, profiles, Colortran Shortthrows, 2k followspots, misers, Arri fresnels and mini softlights, as well as eight Golden Scan 3's and a Scar Commander. Any other specialised equipment is hired in as required.

Robert says that lighting for television is quite different these days considering the sensitivity of cameras. This has led to the necessity of switchable lights, and while the globes are expensive, Robert says it is so much easier to be able to switch down a light if need be, because cameras do not always require the same intensity of light as they used to.

While lighting techniques between film, television and theatre are becoming less polarised, Robert says there are still times when the differences between the three mediums are glaring.

continued on page 86



Blue Heelers set



SHIRLEY JENSEN

a profile

Part of an occasional look at women in the lighting business

Shirley Jensen is a well known face in the lighting industry, or should I say voice, as it is Shirley who deals with the public relations/sales/enquires for Bytecrafft in Melbourne.

Shirley has been interested in theatre since she was at school where she was in the chorus for the school production of *Camelot*. Abandoning a singing career, she started building sets, props and making costumes instead. By the time Shirley was in the sixth form, her school was so proficient in theatre crafts, they started their own theatre company.

"We were putting on at least three shows a year and we were involved in other amateur theatre productions in Melbourne," said Shirley.

After school, Shirley went to Teacher Training College with aspirations of becoming a Drama Teacher. She's also a qualified Geography teacher!

After leaving college in 1981, Shirley was working casually for a sound company in Melbourne called "Specialise Sound" making PA systems for bands and school shows as well as teaching for some money to live on! The theatre technician at the college she had been at went overseas and she was asked to take his place.

"I was there for a couple of years training students, supervising box office and visiting companies, and generally maintaining the equipment," said Shirley. "In 1983 I was offered a position at Strand selling lighting to schools and theatres. I took 10 months off college to do this, returning afterwards for another year. During this time I met my future husband Murray whilst doing a show."

Murray had landed the position of chief elec-

trician with *Cats* in London and Shirley encouraged him to go visiting him in early 1986. Meanwhile she was working as a freelancer for the Arts Centre doing followspots, rigging and other lighting work.

In 1988 Shirley joined Murray in London for a year where again she did casual lighting work. Eventually she became the 'day man' (third rung after chief electrician and deputy electrician) at the Piccadilly Theatre. When her visa expired she returned to the Arts Centre in Melbourne.

By 1989 Shirley and Murray decided to get married and live in the same country for a while! After a

wedding in Australia, Shirley joined Murray in England where he was now working for Howard Eaton Lighting. Shirley also worked there for three years doing paper work, quoting and making fibre optic curtains.

"The guy who did the fibre optics had become allergic to the epoxy which is a common thing with people dealing with fibre over a period of time," Shirley told me. "His face would blow up even though he had a special breathing apparatus. So I said I'd have a go and I quite enjoyed it. One unusual job I did was building a fibre optic fountain for an opera designed



Shirley's infamous "Bytecrafft Wardrobe" which survived quite a few months. The boxes had travelled to the UK with dimmers in them, returned to Melbourne and then shipped to Sydney.

by David Hockney at the Royal Opera House. The opera was about a woman who had no shadow so the lighting would have been interesting! It took hours and hours to do but I got to meet David Hockney and I kept his scrawl of what the fountain was to look like. Not many people have an original David Hockney on their wall!"

Murray and Shirley returned to Melbourne to start a family. Murray started working straight away transferring *Phantom* from Melbourne to Sydney for Bytecrafft. Shirley again did casual work for the Arts Centre. They soon moved to Sydney where Shirley worked in the Bytecrafft office.

Shirley bravely fielded all the calls that came in - service calls, quotes, sales, whatever. When she became pregnant she had a year maternity leave before returning to the office part-time.

"I'm more into the publicity and promotional side of the company as well as designing the Entech stand," Shirley said.

This year Shirley and Murray returned to Melbourne where they continue to work for Bytecrafft. Shirley may be a whiz in the office but she admits that she misses the 'hands on' work.

Shirley working on the fibre optic fountain at Howard Eatons. Each of the hundreds of fibres were numbered and paced in order so the light would flow up and out of the arms like water.




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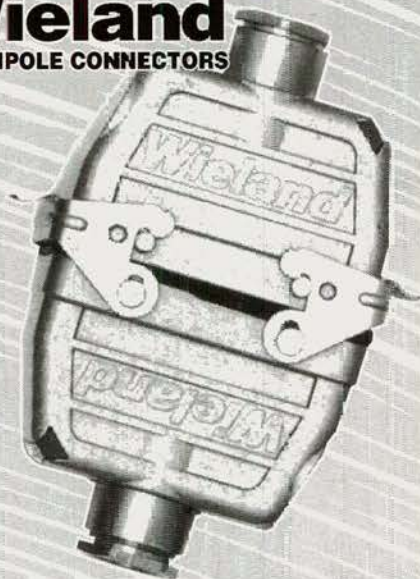
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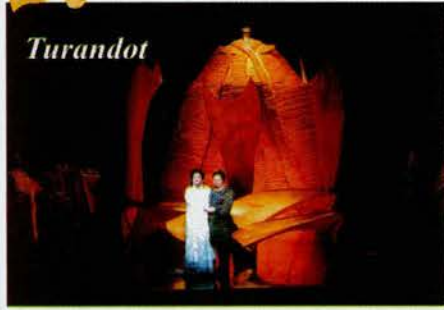
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Turandot

Although John Drummond Montgomery is kept busy as a Director of Bytcraft, he stills finds time to create lighting designs for various clients. His background is strongly connected with ballet, an art form he finds particularly creative, but he also finds opera extremely rewarding.

This production of *Turandot* was originally

conceived by the Australian Opera using their standard rig as it was in rep. When the production transferred to the State Opera of South Australia, John was able to modify the lighting mainly by doubling the amount of 1K's and 2K's which were all in blue - a colour which dominates the lighting.

Kristian Fredrikson designed the set including the use of six trolleys on which principle players move on. This makes their height rather tall causing a problem with in-house followspots reaching past the proscenium. To get round this, John used six truss spots. Unfortunately the followspot operators are in place for three hours as there is not enough time to get them down during the break.

There are no scrollers, moving lights or "specials" as John describes Puccini's music as colourful enough.



Opera

The Tales of Hoffman

The Australian Opera's production of *The Tales of Hoffman* marked a first for Australian opera - a woman designed the lighting. Heather Carson, an American, has an extensive career background lighting opera as well as theatre.

Don't expect clean, conventional textbook lighting from Heather. She describes her work as "messy" and her method as "unsettling".

Heather once said "I don't care if the footlights hit the ceiling. I don't care if I spill onto the proscenium or it's in the audience's eyes. A lot of energy in lighting design is focused upon creating this safe little cocoon inside a box that you can separate from. I like to spill out all over the edges".

Heather designs from her instincts about the space and she doesn't like to employ the standard technical terms of lighting, or even



the usual equipment. This can worry directors and lighting crews.

"Sometimes people think I don't know what I'm doing, and they panic....but it's actually a very painful process for me. I am physically incapable of putting a unit on paper until I know exactly what it means" said Heather in a recent Lighting Dimensions article.



Aida

The Victorian State Opera's stunning production of *Aida* has been described as one of the finest ever staged of this popular Verdi opera

in Australia .

Brian Thomson's set is black, made up of a front-drop covering the vast proscenium with huge black, finely gold-rimmed panels, into which are set glass prisms that can be lit from behind. There are similar legs and borders dressing the stage, and a mid-stage drop that is flown in the final act's first scene, revealing a starlit night. The panels open and close, horizontally and vertically, to expose various elements.

Lighting designer Rory Dempster utilised the standard VSO rig with no specials and no colour leaving the set to dominate the visuals. Usual problems were experienced working with an opera in rep.

LXbizzBITS

PRODUCTS

THE LD BAG

Towards 2000 of California (where else) are selling the LD Bag 'the ultimate mobile office for LD and Tech on the road'. The LD Bag will comfortably carry your laptop or palmtop, gig files (there's even a handy blueprint roll holder), tools and cellular phone (with a sound transparent mesh that actually gives you a chance of hearing the phone ring during rehearsals!).

It is constructed of the same stuff they make sand bags out of, so it's almost bullet proof (that's what the blurb says) and the colour scheme is politically correct and an environmentally friendly tan and green. There's also a thingy for carrying your keys or flashlight.

US dollars \$69.95 it is available from *Towards 2000* ph: (818) 557 0903 fax: (818) 557 0905.

MARTIN DISCO

Martin announces three new products, available from Show Technology, dedicated to the disco market. Punisher and Destroyer X250s are powerful revolving, multiple beam effects, both of which can be DMX controlled or otherwise operate as stand-alone effects responding to music.

Both use a revolving parabolic reflector to



create the initial turning spray of beams and each uses different interference techniques to change colour, beam pattern and animation.

The Lynx 100 is a compact, colour-changing and radiating beam effect projector which operates entirely without external control, responding automatically to music.

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The stand features adjustable collar, heavy duty castors and levelling feet. Legs fold up for compact dimensions when transporting.

READERS SERVICE NO 414

GELFILE

The Great American Market have released Gelfile, an original database of technical and visual information about colour filters. Gelfile retails at \$128.46 ex tax from CLS.

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U.L.A.



DON'T YOU JUST LOVE BEING IN CONTROL?

Adrenalin - don't you just love it? That feeling halfway through a show when you realise that you haven't set up a cue and you've got just thirty seconds to set it up. It's this kind of thing that puts a bit of excitement into running a show.

Now that we've got memory desks though, all the operator has to do on a show night is to press a "Go" button and let the bard do its thing. Where's the fun in that? What's the point in having an operator at the board at all? Why not just let the stage manager press a button every time there needs to be a change?

The problem with the old preset boards lies in the fact that we have expanded too much these days. Gone are the days of a few footlights and a few floods

- except in village halls around the world that still use preset boards. If theatres still used manual desks then the excitement of live theatre would return but so would the risk of putting up the wrong channel in a cue and so would the work of writing out manual plot sheets.

But who wants to press the same button 50 times a night for 4 months? And what happens if the board crashes? Or if you want to change desks and you have to re-programme the whole show? People seem to forget that even the latest model of desk that does everything except actually design your lights is prone to an off day when it'll "forget" a cue or make-up some new ones. But the question remains - has the fun gone?

It all depends what job you do. If you're a LX designer, your job has become easier. If you're an electrician, the control doesn't really matter. But if you're the one who sits in the tech box and runs the show, where's the gratification?

It means that these days, crews are getting smaller. It's the way of the modern world, I'm afraid. Multi-skilling. To you and I that means "redundancies". Get the same person who designs to start rigging and run the show and you're cutting your wage costs. In hard times, it's the way it goes.

And what about amateur theatre? Should you keep the old 24 channel preset board and keep the fun up for your volunteer crew. If you want to do anything fancy, the answer has to be no. There are some very good semi-manuals out there. Use submasters and you keep some of the live feel but it's just not the same. Unfortunately it's the only way - let the computers and circuits do the hard work and you

can have a cup of tea. I wonder if anyone's invented a board that brews tea for you.....

Source: Andy Kelk's LX Magazine on the Internet



LIGHTS SET FIRE TO BACKDROP

Fire interrupted a rehearsal for a fashion parade in the Grand Hall of Melbourne Town Hall, when lighting equipment set fire to temporary masking backdrops.

A press release from Melbourne City Council's Public Affairs stated:

"Minimal damage was caused by last night's fire in Melbourne Town Hall. At about 9.15 last night, two fabric backdrops, which had been installed behind a temporary catwalk in the body of the auditorium, caught fire. It's believed the fire was caused by a nearby bank of lights.

The catwalk was being set up for a 4-day fashion parade - which gets underway today on schedule.

The fire was extinguished by workers in the auditorium at the time, and by the in-built sprinkler system.

The main curtains in the Town Hall were not affected, and no damage was done to the auditorium whatsoever, apart from some water which seeped into a basement garage.

However, damage was sustained to some of the equipment set up for the fashion parade. Apart from the fire damage to the backdrops, some electrical equipment was affected by water.

No-one was injured in the fire, however 140 people were evacuated from the premises and a technician working at the rehearsal was treated for smoke inhalation. The damage bill is expected to be thousands of dollars."

LXbizzBITS

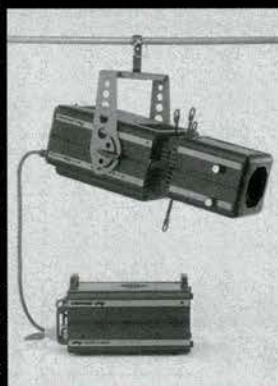
PRODUCTS

DOUGHTY ROLLER RACE SPIGOT

This accessory, from Coemar De Sisti, fits into any standard followspot stand and features internal roller bearings allowing for jerk-free panning movement of any followspot. The spigot is fully tensionable allowing for continuous adjustment. READERS SERVICE NO 416

COEMAR FOCUS EHP 2500

The Coemar Focus EHP (Exhibition Hall Projector) 2500 has a colour temperature which compliments the needs of exhibition photographers, enhancing the images created of the products on show by providing correct colour rendition.



It has a uniform beam of light eliminating flat-spots and accurate zoom and focusing facilities removing spill. Available from Coemar De Sisti. READERS SERVICE NO 409

UNIVERSAL DMX MODULE FROM VARI*LITE

The new Universal DMX Module (UDM™) allows the power and flexibility of Vari*lite Artisan control consoles to work with a wide range of DMX512 equipped automated lighting fixtures and other DMX equipment.

In personality mode (the default mode), controls for up to 24 specific DMX512 luminaires are automatically mapped to the Artisan front-panel controls, allowing these luminaires to be programmed like any Vari*lite linaire.

Fixtures supported are: Cyberlight CX, Cyberlight Mode 2, Intellabeam, Super Scan Zoom, Rainbow Colour Scroller, Golden Scan 3, Golden Scan HPE, ColorRam I and II. The second release which will be available soon, will also support: Cyberlight Mode 1, NAT Light, Light Curtain, Pitching Light Curtain.

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CIRCULAR TRUSS FOR HIRE

CLS in Melbourne now have a range of their circular trussing available from the hire department. READERS SERVICE NO 405

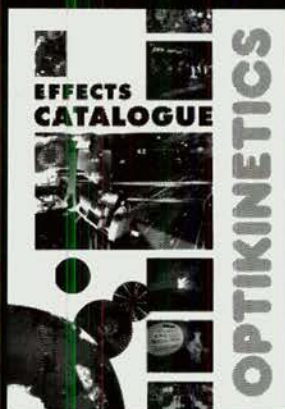
HOG SOFTWARE

Users of the Jands Hog and Flying Pigs Systems' Wholehog II can now download version 1.19 software from the Flying Pigs' web page at: <http://www.flyingpig.com>.

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Is there Life after Touring?

Jaqueline Molloy meets Jerry Reinhardt

For touring veteran Jerry Reinhardt the answer is a definite "Yes" and for him it means family, an eighty piece orchestra and a shed full of powertools. After more than a decade of being constantly on the road, Reinhardt, a rock n'roll lighting director and designer from Reno, Nevada, has put away his suitcase and settled in Perth with his Australian wife Alison and their son Winston.

For the last year Reinhardt has concentrated on fatherhood, building up his personal collection of powertools so that he can make furniture in his shed and working

with the ABC as the staging coordinator for the WA Symphony Orchestra. "I'm still in the business just in a different end of it, I'd never had much experience with orchestras before so it's new territory which is good".

Reinhardt recently toured the orchestra to the North west of WA and found his touring experience invaluable when it came to moving around 70 musicians and their instruments. "Touring rock bands and doing the monumental tasks that go hand in hand with erecting huge amounts of stuff in rapid deployment fashion on a day to day basis is a huge logistical exercise and this proved to be great experience for dealing with a symphony orchestra".

Reinhardt designed the lighting for WASO's recent performance at Burswood Showroom, "Periodically they contract me for a bit of design work and they consult me on visuals and presentation. I still get that buzz when it's two minutes to show-time and we've got an audience of a couple of thousand people and I really like the music, it's a little easier to listen to than some of the rock n roll that I've done. I like the fact that I don't need earplugs to listen to the symphony and I think we provide something positive for the community."

As the son of a slot machine designer growing up in the casino town of Reno, Reinhardt had early exposure to the world of show business, "I used to hang out backstage at the showrooms when I was a kid and I had some very wacky baby-sitters". Reinhardt graduated

from the University of Nevada and went on to gain a masters degree in design with a major emphasis on scenic design, from the University of California.

It wasn't until he graduated and took a job as technical director for the theatre department at the University of Oregon in Eugene, that lighting became a real interest. During this time he started working as a lighting designer mainly for opera and theatre productions.

The world of rock'n'roll lighting which was to become the mainstay of his career for the next decade or so, was waiting just around the corner. "I made a conscious decision that I didn't really want to be in Academia, I thought I was a bit young, so I quit my job as technical director, moved down to the Bay area (San Francisco) and started dragging my portfolio around. I took a job with Morpheus Lights down in San Jose and I was fortunate that at that time it was the infancy of moving light technology. Morpheus were developing a moving light and were in the market with Vari*lite".

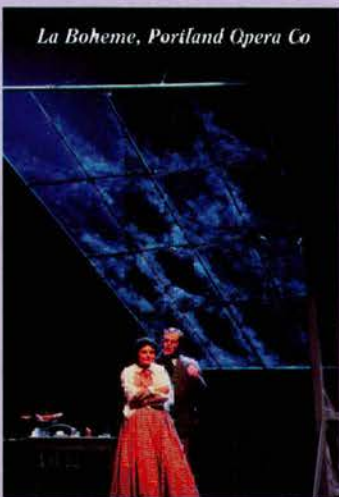
Reinhardt became a programmer with Morpheus working with different clients and "One thing led to another, it's kind of a small world out there in the rock n roll business". Reinhardt began to get some clients of his own and started working independently as a lighting director. "It just sort of went from there and what would happen is I'd get a call, often from another designer who'd be after a touring lighting director. One of my nicest breaks came from the designer Jeff Ravitz who had me tour with Cher".

Over the next decade Reinhardt worked with acts as diverse as Van Halen, The Bolshoi Ballet, Steely Dan, Chicago, Al Jorreau, Neil Diamond and Mikhail Baryshnikov; touring through Europe, Asia, North and South America, Britain and Australia. "Touring is hard work but I love the big crowds, I don't like being in them but I love feeling the response when you do something like a great

continued on page 84



Jerry and son Winston



La Boheme, Porland Opera Co

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FOOT CONTROLLERS FROM RYGER

The Footlight 4 is a four channel controller designed for stage or band use. Three large buttons give access to 16 patterns, flood and blackout. The unit can control a total load of 3120 watts (\$455 inc tax).

Footeffects is a four channel controller designed for controlling effects for stage or band use. Four large buttons can be used as either latch or flash pads. The fourth output can be set as a master so that when the fourth channel is on the other three are turned off (\$455 inc tax).

The AX4 is an easy to operate powered 3 or 4 channel chaser for the small mobile, an ideal first light controller for DJ's. Has 16 pre-programmed patterns and internal microphone (\$299 inc tax). All are available from Disco World.

READERS SERVICE NO 402

CONSTELLA NEMESIS & SHOCKWAVE

New from the UK company Constella and available from Show Structures, is the Shockwave, a fan cooled unit which projects 21 beams, and has an A1/231 lamp 12 volt 100W. It has 7 colours + white, 6 gobos including circle and 8 built in pre-programmed memories. The Shockwave (\$895.00 inc tax) can be stand alone or any number can be linked together by jack to jack leads and connected to the soon to be available Constella controller.

The Nemesis (\$1095.00 inc tax) from Constella projects a myriad of lightwaves dispersed by a variable speed rotating barrel of mirrors. It has 7 colours + white, 5 gobos including circle and a long life M33 lamp with 8 built in programmes. The Nemesis Controller is \$495.00 inc tax.

READERS SERVICE NO 407

PROPLEX CABLES

LSC Electronics are now the Australian agents for Proplex cables. Proplex are a professional range of data and scroller cables. The cable is sheathed with black poly urethane which produces a flexible cable which can stand high temperatures resulting in no more burnt out data or scroller cables.

READERS SERVICE NO 420

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READERS SERVICE NO 410



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- DMX or Stand Alone



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- DMX or Stand Alone





BUYERS GUIDE

FOG MACHINES

FOG MACHINES

TAS

Coemar De Sisti Australia P/L (03) 9467 8666

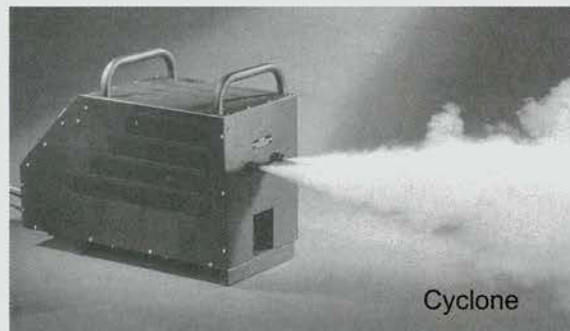
Mini Smoke Machine High output from one of the smallest machines in the marketplace, c/w mounting yoke for grid mounting. Approx. 2.5min heating time, 1.5 litre internal tank, only 7.8kg. Simple to maintain and service, with easy complete internal access, finished in silver scratch resistant paint. \$540 (ex tax).

Windy Wind fan accessory for use with all type of smoke and haze machines. Compact dimensions and mounting yoke allow for truss mounting. Complete with adjustable fan speed controller, allows for accurate and directional dispersion of all types of fog and smoke effects. \$780.

THE EFFECTS COMPANY

Coemar De Sisti Australia P/L (03) 9467 8666

Supersmoke 3000HP Turbo Available with interchangeable remotes, and featuring "flat-block, fluid-coil" technology allowing for minimal maintenance and repair costs. Wide range of accessories including ducting adaptors, drip trays, and optional sensing systems to monitor fluid levels. Units features unique turbo-fan assistance to accurately direct and regulate output. \$2,737.



Cyclone Stadium-filling smoke machine, with twin thermally protected pumps feeding twin blocks. Externally accessed filters, unique copper coil system, auxiliary 20 litre external tank, 5 litre internal capacity. Includes independent variable output, and turbo-fan air boost for total control of quantity and direction of output, fully DMX512 controllable. \$6,293.

Effects Company Fluid Five versions of industry-compatible, safe & tested, fluids: Standard including CDA brand fluid, Haze, Superhaze, Lowsmoke, and Aerosol Canisters. From \$7.00 per litre.

LIGHT EMOTION

ELSTA (02) 9568 2100

Mini-Smoke Quiet operation, high-output, c/w remote, 1 litre tank, LED status indicator, low voltage remote control, 500W element, compact. \$245.

B-17 700W element, 3000 cubic feet/min output, twin LED status indicator, c/w low voltage remote, optional radio remote, removable 1.3L tank. \$327.

B-31 1000W element, 5000 cubic feet/min output, twin LED status indicator, c/w low voltage remote, optional radio remote, removable 1L tank. \$409.

B-52 1000W element, 15,000 cubic feet/min output, twin LED status indicator, c/w low voltage multi-function remote, removable 5L tank, adjustable fog output, continuous fogging achievable. \$736.

SMOKE FACTORY

LSC Electronics (03) 9561 5255

Space Ball Compact road-cased design, manufactured in Germany. 500W heater, variable output control. Options: radio remote; DMX512 interface; and programmable timer. \$900.

Captain Manufactured in Germany. 1500W heater, variable output control. Options: radio remote; DMX512 interface; programmable timer; truss hanging bracket; and pipe (duct) adaptor. \$1450.

Scotty Very compact hand held battery or mains powered smoke machines, up to 3 hours operation on battery. Ideal for film, TV, theatre and special effects. Optional radio remote. \$1600.

Mr Mister Glycol cracker for continuous haze effect. Unit can also be used to crack oil. Mr Mister and silences compressor are separately road cased. Mr Mister or compressor available separately. \$5000.

MDG

Bytecraft P/L (02) 9587 2555

Mini Max is a lightweight portable unit with remote control designed especially for entertainment. Output 50m³ per minute, weight 5Kg. From \$2361.

Max 3000 APS is perfect for theatre, opera, small TV or photographers studio. Output up to 85m³ per minute. Available as portable, stationary or semi-portable version. From \$5132.

Super Max 5000 designed for cinema, TV, rock show, circus with outputs up to 300m³ per minute. Complete with remote control and available as portable or stationary version. \$5542.

Ultra Max 25000 When ultra performance is the key to success, the Ultra Max delivers up to 800m³ per minute. Ideal for outdoor events and special effects. \$7389.

HIGH END SYSTEMS/LIGHTWAVE RESEARCH

GUVT (07) 3358 5022

F-100™ Performance Fog Generator has a powerful variable output, continuous duty, 9.5 Litre reservoir, optional timer (analog) or DMX remote, 1500W element, fluid level sight gauge, low profile with dual carry handles. \$773.55.

F-100™ Timer Remote with 7.6 mtr cable allows setting of duration and interval in seconds, output volume and allows 0-10v proportional control, LED indicators. \$282.85.

F-100™ DMX Remote allows F-100 to accept DMX512 commands, LED indicators provide



JEM ZR31

status information. \$368.78.

Coldflow™ LCO₂ Exchanger Module uses liquid carbon dioxide to supercool a manifold through which smoke passes producing a cool dry dense fog 1cm to 100cm from the surface. \$2282.60.

LE MAITRE

Aus: Universal Lighting & Audio (07) 5532 9922.

NZ: Lighting Supply Company NZ 64 9 838 9217

MiniFog Pump 1100W heater, Genesis technology, simple remote control, full electronic temperature sensing and mechanical failsafe, 0.5 litre bottle, 5yr guarantee, weight 8Kgs. Aus\$564.76/NZ\$683.12.

Microfog 1100W heater, fully portable for 20 min, Genesis technology, full electronic temperature sensing and mechanical failsafe, 5yr guarantee, weight 8Kgs. Aus\$564.76.

Red Devil 1100W heater, Genesis technology, variable timer remote, full electronic temperature sensing and mechanical failsafe, quiet operation, 5yr guarantee, weight 9Kgs. Aus\$721.32/NZ\$817.90.

Showmist 1100W heater, high volume with little noise, timed smoke output and duration via remote, variable output via remote, 2.5 litre bottle, 5yr guarantee, weight 11Kg. Aus\$1159.84/NZ\$1196.28.

ROSCO

Rosco Australia (02) 9906 6262

1600 Billows of fog to suit nearly any application. Compressed air port for special effects and for cleaning. Optional DMX module for full control from lighting board. \$1400.00

BP2524 Volt Battery powered portable fogger. Applications include moving pieces of scenery, costumes, theme park rides or floats. \$2100.00.

JEM

Show Technology (02) 9898 1111

JEM Show Fogger compact design and fast heating, 700W heating chamber with variable output, remote and LED indicators. External fuse and thermal projection. 5 yr warranty. \$531.96.

JEM Fogger Mk III fast heating, 1000W heating chamber with external remote with timer control and auto function and LED indicators. Includes 1ltr of fluid. External fuse and thermal projection. 5 yr warranty. \$695.90.



JEM ZR31 has twin heating (2kW) chamber with dual high pressure pumps - quick reheat time (6 - 12 secs). Removable remote with variable output timer, duration and auto operation. Dual control both 0-10v dc and DMX512. 5 yr warranty. \$2286.88.

JEM ZR41E features 2.5/5kW heating which allows continuous output. Integral 5ltr tank and remote with variable output timer, duration and LED indicators. 5 yr warranty. \$2868.00.

artificial snow for use in clubs, stage, etc. Truss mountable unit with fully self contained fluid reservoir, suitable for production and club use. \$999.

MDG

Bytecraft P/L (02) 9587 2555

Atmosphere APS designed for theatre, TV, laser and live shows. Comes with remote control, automatic purging system and integrated fan that disperses haze at 270°. Noiseless. From \$5542.

HIGH END SYSTEMS/LIGHTWAVE RESEARCH

GUVT (07) 33585022

Nebula™ has a new cold solution agitation method producing a haze that is both subtle and effective. Comprehensive remote control is included. Timer, DMX, analog or manual control. \$4137.83.

LE MAITRE

Aus: Universal Lighting & Audio (07) 5532 9922

NZ: Lighting Supply Company NZ 64 9 838 9217

G300 2200W powerful dual function smoke/haze machine. Electronic display, timer, electronic temperature sensing and failsafe, Genisis technology, remote control 0-10v or DMX, weight 24Kgs. Aus\$2700/NZ\$3665.63.

LSX Low Smoke converts smoke output of Le Maitre machines to low lying fog, no residue, variable control on smoke height, can create waterfall effect, ideal for hire. \$6524.60.

LSG Low Smoke combined with G300 produces simulated dry ice without using water or

ice. Works with CO₂ container. \$POA.

KUPO

NZ: Lighting Supply Company NZ 64 9 838 9217

Aus: Show Technology (02) 9898 1111

Kupo Silk Hazer 75W fine, long-lasting mist, low oil consumption, built-in fan. NZ\$865.22/Aus \$1230.00.

ROSCO

Rosco Australia (02) 9906 6262

Hazemaker It isn't fog, it isn't smoke - it's atmosphere. Free of oil the machine creates an effect similar to 'cracked oil'. No heat, complete in road case to produce haze effect to enhance light beams. \$3400.00.

Chiller In conjunction with a Rosco fog machine the Chiller allows you to produce low-lying fog on demand. \$750.00.

JEM

Show Technology (02) 9898 1111

HOT 2000 Ultrasonic hazer that produces non-stop haze and is very quiet. \$3271.00.

HAZE/CRACKERS/OTHER FOGGERS

REEL EFX

Aus: Coemar De Sisti Australia P/L (03) 9467 8666

NZ: Lighting Supply Company NZ 64 9 838 9217

DF-50 Diffusion Fogger Cracked vapour unit used by almost every major production company in Australia and overseas. 3+ hour hang time, 1 litre of fluid lasts approx. 16hrs. Fills 5,000 sq. m. per hour. Only 31x36x23cm and 16kg. Straightforward, easy to use and service, environmentally safe. Aus\$4,300/NZ\$4676.28.

THE EFFECTS COMPANY

Coemar De Sisti Australia P/L (03) 9467 8666

Cirrus Lowsmoke Dry-ice effect from conventional smoke machines. Utilises readily available liquid CO₂, producing up to 48 minutes of continuous fog from a 34kg cylinder (can be manifolded). Electronical link to all Effects Co. machines, and adaptable to suit other machines, eg. F100. Requires no pre-cooling for use. \$4,450

Cumulus Fog Machine Conventional dry-ice effect unit. Features include multi-level output gauge, ducting adaptor, and extremely solid construction. \$1,740

TAS

Coemar De Sisti Australia P/L (03) 9467 8666

Bubble Machine Produces continuous output of bubbles for use in clubs, stage, etc. Truss mountable unit with fully self contained fluid reservoir, suitable for production and club use. \$440

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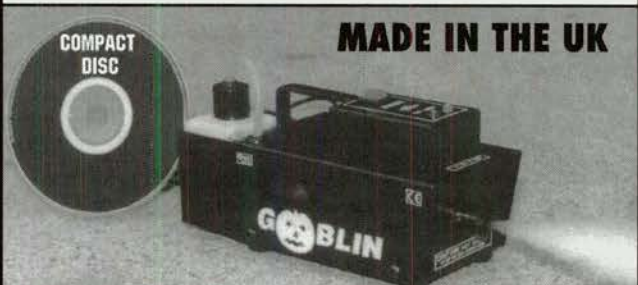
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Is There Life After Touring?

continued from page 80

visual effect and 10-20,000 people go Ahhhh. You feel this twang of the golden thread that connects us all".

Whilst on tour with Cher in 1990, Reinhardt met his future wife Alison in Perth. "It was very romantic, on a boat cruise on the Swan river drinking champagne, but Alison didn't want anything to do with me at first but I persevered!" After struggling with a long distance relationship for a while Alison went to the States and straight onto a tour bus with the group Chicago for a six week American tour. "It was a great experience because that group has been around for about 25 years and they're really nice people, they've been through all the ups and downs and are very family oriented".

With the impending birth of their first child they made the decision to return to Perth to be near Alison's family and Reinhardt decided at the same time to quit touring. "I got a job at the Perth Concert hall working as the stage manager and then I got itchy feet and gave that up to go out on the road with Steely Dan in 93', it was just a short tour but it gave me the adrenalin boost I was after".

Reinhardt returned to Perth but still had the wander lust, "I went off with Van Halen on a ten month tour and it was fantastic for the first three weeks then I just wanted to be home with my wife and son. I turned 40 on that tour and figured that it was time to get off the road. My priorities had shifted and I'm now much more concerned with being with my family and being part of a community that I really like".

Reinhardt has seen a few changes in the touring rock n roll world over the years, "Efficiency and organisation have really developed and a lot of it has to do with rapid deployment techniques, a lot of which comes from the military. There are some really ingenious people out there who have these amazing collapsible stages that go together really quickly. And of course technology has progressed in terms

of lighting and sound systems".

Reinhardt also believes that the rock n roll business has really become a Business. "In the early days it was a lot more relaxed with more fun and games going on but now it's cut and dry and there's a lot of people who would like your job. You have to be clear-headed to make decisions because there's a lot of responsibility especially with something like safety which has really improved. When you're hanging thou-



Steely Dan 93 tour

sands of pounds of equipment over the heads of millionaire performers, safety is crucial!

Something Reinhardt doesn't believe has changed a lot is the philosophical approach to lighting design, even though the tools available to the designer have changed significantly. "Richard Pilbrow once said that technology is supremely unimportant and there is a certain truth in that, our role is still to embellish and accent the artist in an appropriate way and if you have 6 parcans to do that with then you utilise colour, texture, intensity and modelling; if you have a moving light to do it with then you have that extra dimension, but the fundamental design question is still; is it appropriate?"

At the moment it is appropriate for Jerry Reinhardt to stay off the road and enjoy the stability of family life in Perth. With a second child on the way he wants to concentrate on being a good father, hanging out in his shed and enjoying his work with WASO.

"You never know what the future holds and as long as I still get the opportunity to have my creative juices flow, I'm happy. I think we're a strange breed of people in the arts and we tend to need gratification by creating something that's shared with other people and as long as I'm participating in that I'm satisfied. I don't regret my touring experiences, in fact I feel very fortunate to have had them.

I couldn't resist asking Reinhardt if he hadn't have fallen in love and started a family would he still be on the road, he paused for a moment and said, "Yeah, probably. But at least I'm not making bombs for a living".

Jerry Reinhardt can be contacted on 09 244 7878

LXbizzBITS

CONTRACTS/NEWS

ELS EXPAND HIRE

Entertainment Lighting Supplies on the Gold Coast have expanded their hire department adding several Le Maitre smoke machines including a Le Maitre G300 haze machine, Abstract Lasers and lighting effects.

Enquires to: ELS (07) 5593 5105.

GTV9 PURCHASE LSC GEAR

GTV9 have purchased another 3 Focal lighting consoles making all their consoles LSC Focals.

Enquires to: LSC Electronics (03) 9561 5255.

FRONTIER UPGRADE STATUS CUE

Frontier Lighting has just purchased the latest software for the Status Cue which will be installed in their Status Cue desk. It is driven by a Pentium processor and it is the fastest Status Cue card available anywhere. It is also the first and currently the only one of its type in Australia, claim Frontier.

Enquires to: Frontier Lighting (07) 3357 3244.

BUSY BARNES

Mal Barnes from Austrasound (now GUVT) has sold Sublime, Sydney's newest hip club, a Martin showcase package featuring a PRO 1220, 8 x PRO 812, 4 x PRO 518, 2 x 3032PC packages, 24 x Geni Shimmers and 3 JEM foggers, as well as other products. Mal has also sold Clay Paky Shadow followspots to Souths Leagues, Burwood RSL and Wentworthville.

THE ATOM

The Atom range of consoles from LSC Electronics has now been on the market for 12 months. During that time over 350 consoles have been sold, having recently received approval for sale in Europe, and with advance orders placed at PLASA, the Atom is poised to enter the European market.

Enquires to: LSC Electronics (03) 9561 5255.

ROSCO AT LDI

Australian lighting designers visiting LDI have been invited to call Ian Baseby at Rosco Australia before November 12th to ensure VIP status at the Rosco stand as well as invites to participate in planned Rosco activities. LD's who can't make the trip can also register to receive the latest Rosco information.

Enquires to: Rosco Australia (02) 9906 6262.

BOJOTECH UPGRADES HIRE DEPARTMENT

Bojotech on the Gold Coast have recently added a new range of High End Systems equipment to its already large High End inventory. New Gear includes 16 Studio Color automated wash luminaires, 12 Dataflash AF-1000 and LCD controller and 4 Emulators and controller.

Enquires to: Bojotech (07) 5593 4656.

The Rivals, University of California



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Catch up with High End Systems' latest innovations at this informative web site:

<http://www.highend.com>



Frank Racina



CHANNEL 7 IN MELBOURNE

continued from page 73

"We'll only light what gets seen on camera. Whenever we have gone in to do theatre shows, a lot of the theatre people tend to look at you and say 'What are you doing?'. It doesn't make any sense to them. We don't light anything that won't be in shot, whereas they light for the whole picture."

Robert's career with HSV Seven began after completing his electrical apprenticeship. He was employed by Seven to work at Cambridge Studios preparing an installation of lamps for Channel Seven over several months. At the conclusion of that job, Robert was offered Second Assistant Lighting on Skyways. 17 years later, Robert tells me that coming from the apprenticeship and working with the lamps was an excellent way of getting to know the equipment.

Blue Heelers

Channel Seven's Studio 8 is known as the Drama studio and is currently home to production on *Blue Heelers*. Built in the early 1980s, Studios 7 and 8 are the 'better' studios at the station in terms of technical outfitting. Complete with motorised battens and state of the art equipment, the studios are a far cry from the older studios across the road with their pipe scaffolding rigs.

Studio 8 has a more basic set up in both the studio and control room compared to studio 7, which is why it is used for drama production that is post-produced. The rig consists of 95 battens, each with 4x5k circuits. The versatile set up allows quick turn arounds.

Blue Heelers has rated consistently high in its timeslot and attracts some three million viewers around Australia every week. The police drama is set in the fictional town of Mt. Thomas and centres around an ensemble cast of police officers and local residents in the small country town. Robert attributes the success of the show to the high standard of production values in producing the show. The original lighting design for the show's pilot was created by Frank Racina and has been taken further by Peter Scott to become the basis of the episode designs. A combination of softlights and diffusion frames create realistic lighting to evoke mood and time of day.

"There's a lot of pressure on drama these days. It's done quickly, but the production levels that are delivered on that are so much better than they were in years gone by. So you try to create reality in shows like *Blue Heelers*. You try to give the shot a mood, or a time of day, or a dramatic or light tone through the lighting.

"We've had a lot of feedback on the lighting for *Blue Heelers*. It has a really good look to it. A lot of people are asking about the style, how we do it, and the time frames."

The set for *Blue Heelers* is efficient. The bar, a sitting room, the police station and offices are all set up within the confines of Stu-

dio 8. Robert showed me around the set and explained that none of the lighting on the show is direct. Bounce-boards and frames mask direct light sources to soften the beam and create a smoother overall effect.

"The way lighting has evolved in this place is we've come at it from the filmic style so with *Blue Heelers* a lot of it is lit from the floor. There's a lot of base light from above, but a lot of it comes from the floor. We do a lot of source lighting on that show so it requires heaps of floor gear and frames - soft frames, diffusion frames and bounce boards. It's a huge array of gear."

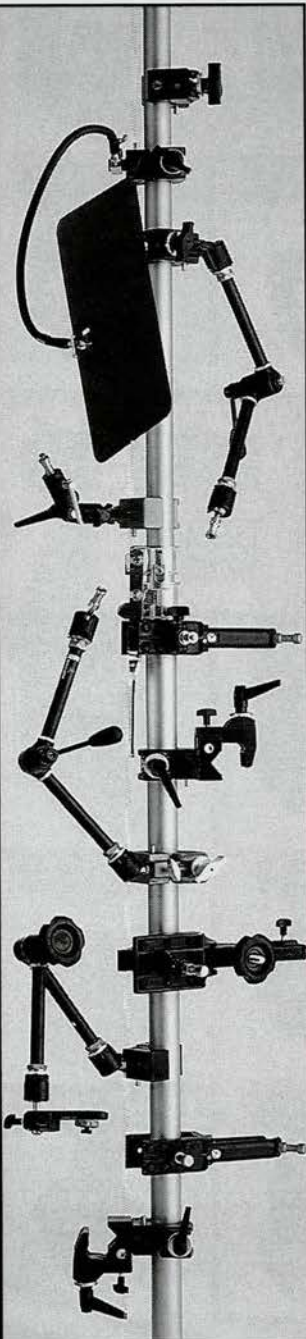
Unlike lighting for theatre, television lighting angles are not as steep, so the lighting is shallower and therefore more flattering to the face. Television lighting is governed by the camera in that every scene must be lit for the close-up.

Being a police drama, *Blue Heelers* requires extensive location shooting. To fulfil this, as well as the requirements of the Full Frontal location shoots, the lighting department at Seven bought a lighting truck last year. Robert describes it as being almost on par as a full gaffer truck. The truck is used for all locations shoots and contains lamps, frames and bounce boards to cover most location situations. Extra equipment is brought in for night-shoots, and cherry pickers and extra crew are brought in depending on the shoot. The lighting department is currently considering buying a smaller lighting truck as a run-about for smaller location shoots.

Full Frontal

Studio 7 at Channel Seven is regarded as the variety studio. It has been the home of shows such as *Fast Forward*, *Bert Newton*, *Tonight Live* with Steve Vizard, *Man O Man*, *Four Quarters*, *Jimeoin*, and countless telethons. It makes a good live studio having the better control room. The studio itself appears to be just your average television studio - large performance area, fly-tower, technical equipment etcetera,

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PRODUCTS

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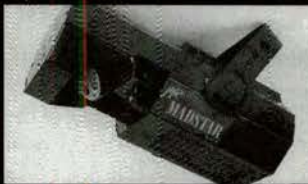
The development of more efficient black-light fixtures and the trend towards the use of special effects paints have inspired Rosco to develop a range of fluorescent paints. **Vivid FX** has a spectrum of 13 colours, all of which will cover most surfaces with one or two coats. Colours can be mixed together to produce intermediate fluorescent colours.

They have also added 3 new colours to the **Supersat** range of scenic paints.

READERS SERVICE NO 411

MAD GUVT

GUVT are now the official distributors for the MAD range of lighting effects including the MAD Star Effects fixtures which are all fully DMX controllable: the 31' series has 12 gobos and



11 colours with the Star311H, a halogen version, costing \$989.90 inc tax and the Star311A, which uses a ARC stream lamp, is \$1,372.11 inc tax. The top of the range Star511AR features 10 interchangeable rotating gobos and 11 colours and costs \$1,856.06 inc tax.

The MAD Scanner range of moving lights come in three versions: the MAD411H has 11 colours and 12 gobos with a halogen lamp (\$1,264.87 inc tax); MAD411A has the same but an Arc lamp (\$1,644.33 inc tax), and the MAD611AR has 10 interchangeable rotating gobos (\$2,186.03).

READERS SERVICE NO 417

but what is not average about Studio 7 is what is under the floor. A swimming pool.

The Channel Seven production of *Man O Man* required a swimming pool as part of the show, so the studio floor was dug up and a two metre deep, ten metre by four metre pool was installed. The pool is covered by steel flooring which is lifted off when pool access is required. Even though only one series of *Man O Man* was made and it is not yet scheduled to return, Robert says the pool is a great addition to the studio and has since been used by other Channel Seven programs.

Lighting for studio 7 has been made easy and quick through motorised battens. The studio has 99 motorised battens which can be lowered to floor level for safe rigging. Each batten has 4 x 5k circuits, twelve of which are 10k, all on a one to one patch. In total there are 468 outlets.

Full Frontal is currently under production in studio 7. The comedy show is made up of segments that range from spoofs of TV shows, to interviews, music clips and everything in between. As a result of this, lighting styles can range between television, film, and theatre to capture the right mood. Robert says that working on *Full Frontal* is a lot of fun for that reason.

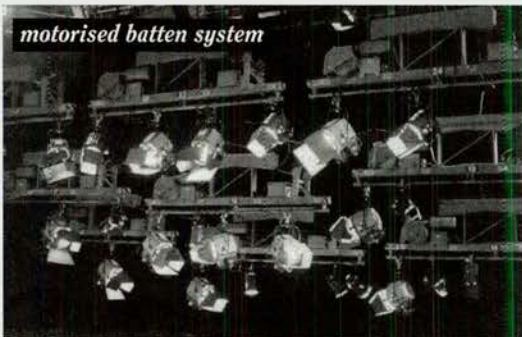
"To me, the sort of show that *Full Frontal* is, is the best sort of show to do because you're covering just about all styles of lighting within television and you're ripping off film as well. It's probably the real variety in a way because you're doing news-sets, current affairs, sports programs, films, ads, clips, making up stupid sketches that mean nothing but are just funny, ripping off plays, and then you get to laugh at it at the end. Usually when everyone laughs, the lighting is always better."

The *Full Frontal* production week begins on a Monday with a meeting and planning day including the crew, the writers and the talent. Tuesday is devoted to location shoots, usually during daylight hours. Wednesday is spent in the studio doing production sketches. There is no lighting plot at this stage however detailed ideas from Monday's planning meetings and the remainder of Wednesday and Thursday are spent recording and rehearsing. Friday night is the culmination of the week as the material is shown or performed to a live audience in studio 7. The lighting for this is based on the designs that have come out of the previous days' preparations.

The *Full Frontal* lighting crew operates from the floor rather than a control room situation. It is a formula that has been used since the days of *Fast Forward* and has proved successful. The lighting console is run from the floor as is the batten control which makes it a much more 'hands on' situation.

Robert explains there is no standard rig for the show because each segment is different and requires a unique lighting set up.

"It's always a changing beast depending on what's required, and what's funnier on the night."



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Harmonic Runway

Christopher Janney earned the Edison Award for creating an interactive corridor of light and sound in a walkway at the Miami International Airport.

Blending a tunnel of coloured glass panels with a score based on South Florida's melodic sounds of nature, the 180ft walkway is lit with over 2000 75W GE ConstantColor Precise MR16 lamps. As passersby stroll through zones of coloured light, they trigger photo electric cells that activate harmonious tones of musical instruments, which blend with sounds of distant crickets, frogs or a flock of loons.



A series of photo cells along the length of the corridor are integrated with a computer-controlled dimming board that adjusts the intensity of the lamps. Most of the MR16 lamps are outfitted with different coloured gels and are sequenced so that the corridor gradually changes colour once an hour from dusk to

dawn. In addition, the intensity of the lamps increases as more people pass through the runway

The six zones of the Harmonic Runway are separated by "curtains" of white light created by 90 75W MR16 lamps. Additional MR16 lamps along the walls of the runway shine onto the reflective, textured floor and bounce an irregular light pattern back onto the ceiling.

BRISBANE VIVACE

The Paris end of Brisbane turned out a grand finale to the Brisbane Festival with the yuppie strip, well-known for its coffee houses, chic restaurants and designer labels, turning into a sea of people that partied late into the night. The party was hosted by the business' of Park Rd and Optus Vision.

Laser Light, a Brisbane based sound, light and staging company, had the task of lighting the two stages as well as mixing a great sound.

Schedules were very tight. "The road closure didn't start until noon on the day of the party," said Kerrod Heineger, Production Man-

ager. "When the stages commenced being built it was all hands on deck for a 3pm sound check. The first act was on at 5pm and the last finished at 10.30pm. We had one and a half hours to strip both stages, load trucks, dismantle and remove stages to meet the midnight deadline so the road could be reopened. We made it!"

This was no mean feat with two stages and only 15 staff.

The larger stage used 4 Array 489 speaker boxes, 4 Jands 3000 amps, 6 Amcron amps and a TAC Scorpion 32ch FOF console. Foldback

was supplied by 6 Turbosound wedges into a Yamaha 2408 foldback console.

Lighting consisted of 16 Raylights, 48 Par 64, 25 1.2K profiles, 3 FX units, 4 mini scan Intell lights and a F-100 fogger. All on a stage that was no bigger than a 3 lane road.

● Dianne Okely



LXbizzBITS

CONTRACTS/NEWS

SELECON CONDENSORS

Lotts of Watts have supplied 15-31 and 28-52 degree Condensor profiles to Channel 9 while the Adelaide Convention Centre have bought more 12-28's and Sydney gaffer Michael Adcock bought some 15-31's for film gobo projection.

MATTHEW FLINDERS THEATRE UPGRADES

Jands dealer GUVT has sold an ETC Express 250 console, a Jands ESP11 24 and two Jands HP12 dimmer racks to Flinder University's Matthew Flinders Theatre in South Australia.

COEMAR PRODUCT EVENING

Coemar De Sisti Australia invite you to attend their product information evening on Weds. 6th Nov., 6.30pm - 9pm in their showroom. Please RSVP. Also on Dec 11th they'll be having a Christmas Drinks Product Evening.

DARWIN MUSEUM EXHIBIT

80 Selecon MR16 based profiles and spots highlight the new 'Sweet and Sour' display through a blue wash created by six of the new Astral 150w metal halide floods.

Designed by Adelaide based Geoff Cobham, the lighting was achieved in an abbreviated production period of three weeks from inception to opening. "One would say delivery was tight," said Selecon's Simon Garrett.

MICK JAMES EXPORTS

Mick James Electronics recently exported several Abstract Futurescan 3CE's to the Pacific region. Enquires to: Mick James (07) 5572 0133.

NEW A.L.E. DISTRIBUTOR FOR QUEENSLAND

Frontier Lighting is now the new A.L.E. distributor for Queensland. They have also recently purchased a further 20 sections of Tri-truss and four more winch-ups from Advanced Lighting Equipment. Enquires to: Frontier Lighting (07) 3357 3244.

FOGGY LOTTS OF WATTS

Lotts of Watts have added a Le Maitre G300, Red Devil and Minifog to their hire department. Enquires to: Lotts of Watts (02) 9638 0302.

CLS BIRTHDAY

CLS officially celebrated its twentieth anniversary in October. The Management would like to thank all of the people that have had an input into the company over the years.

SHADOW NIGHTCLUB

Disco Supplies in Melbourne recently installed Abstract Futurescan 3 CED's and several other Abstract lighting effects into the Shadow Nightclub at Mt. Gambier. Enquires to: Disco Supplies 018 109 169.



Electronic Theatre Controls



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LX PRO TALK

fog machines

Starting this month is a new feature entitled LX Pro Talk where we pick the brains of end-users about a variety of topics. First, it's Fog Machines with the following questions asked:

- 1 What is your favourite fog machine?
- 2 Why?
- 3 What improvements would you like made to this machine?
- 4 Do you generally prefer fog, haze, cracker, dry ice....?
- 5 Which juice/propellant do you use and why?
- 6 What useful life do you expect this machine to have?
- & Do you have any general Fog stories to tell?

Rolf Greve, R & K Lighting.

- 1 Coemar De Sisti DF 50
- 2 Great haze all night with low fluid consumption
- 3 None that I can think of
- 4 Haze or dry ice depending on effect
- 5 Whatever comes with the machine
- 6 5 years minimum
- 7 Whilst doing a fashion show in a lecture theatre of a major Melbourne hospital the maintenance guys thought we had finished and turned on the smoke detectors. Yep, there were seven fire trucks, a major evacuation underway and guys dressed in green muttering about having to sew some guy up in a hurry.

Ian McLean

- 1 Le Maitre Showmist, G300
- 2 Good output, reliable, easy service access
- 3 DMX interface (Showmist)
- 4 Fog
- 5 Le Maitre manufacturer recommended
- 6 5 years plus

7 Ask Light Sounds about their melted JEM machine!!!

Chris Curran, Graftons Lighting

- 1 JEM Mk3
- 2 Great output for size, excellent for hiring
- 3 DMX plug and socket not 5 pin din.
- 4 Depends on the application, most probably fog or cracker
- 5 JEM standard
- 6 5 years plus
- 7 We had hirer take a Peasouper and complained that the effect didn't work. I asked him what he had done. He said "I did just what you told me. I filled it up to the line with water, let the water boil, put the block of ice in the basket, shut the lid and lowered the basket in the water". I thought something was strange because he seemed to have done everything right. I asked him what effect he got and he said "steam". It turned out that his friend didn't have time to get the dry ice so he had just picked a block of ice

on the way to the party and thought 'oh well, it'll do'. It didn't and I haven't heard sight or sound from the hirer since!

John McKissock, Clearlight

- 1 F-100 smoke generator from High End Systems
- 2 Reliable, variable output control on remote - coldflow option
- 3 Honestly, it already delivers
- 4 I prefer smoke, but used very lightly in theatrical applications
- 5 Atmospheres which has 3 formulas - Stage, Coldflow and HQ. It is best suited to F-100 and is clean avoiding blockages
- 6 It has a 2 year warranty but I expect a 5 year life at least
- 7 Don't you just hate the way venue managers never agree with the LD that that amount of smoke was ascetically necessary?

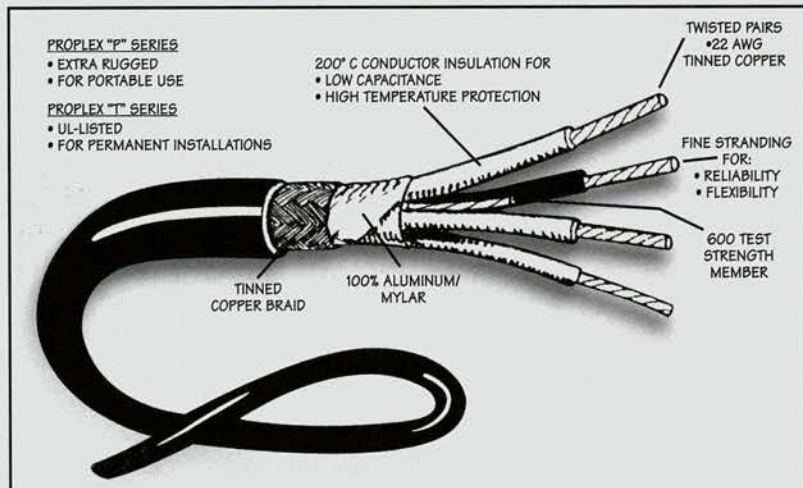
Gino Lombardi of AVLA

- 1 JEM fogger Mk II
- 2 It's compact, punchy and very reliable
- 3 The ability to have a larger bottle
- 4 Fog machines
- 5 JEM, of course
- 6 When looked after, 3-5 years

Jeff Larson, Albury Sound & Light

- 1 High End F-100
- 2 High performance and reliable
- 3 Radio remote control (new model has DMX)
- 4 Fog

ProPlex™ DATA CABLES



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Write in Reader Service Number: 189



5 DM Marketing (quality and price)

6 6 years

7 Hired machine to client at 10am. At 7.30pm he rang just before the show "need more juice". He'd used 9.5Lt and had great fun at my expense. Moral of story - charge for machine hire plus juice used!

Tony Davies, Chameleon Touring Systems

1 Martin Pro 2000 as well as 2) the Chameleon Oil Cracker Mk II

2 Yoke for flying, remote control is easily extended by means of mic cables, very reliable, great output. 2) very quiet and pervasive!

3 None 2) none

4 Horses for courses!

5 Manufacturers own juice 2) Food grade/medicinal oils

6 18 months 2) 4 years

7 Like good sex, you can never get enough when you want it, however, like good sex when you do get it, it always seems to be too much!

Ian Ross, Rossound

1 Light Emotions B-31

2 It suits the market we hire to

3 Maybe a slightly stronger propulsion

4 Smoke/fog

5 ELSTA slow dispersion

6 3-4 years

7 We recently filled the back of a clients van with smoke then rang his boss who worked locally. We told him he had a problem with his van, as a lot of smoke was coming out of the back, and to have a look out as it came down the street!

620 GOBO DESIGNS IN STOCK

THE COMPLETE RANGE OF METAL GOBOS FROM ROSCO IS NOW AVAILABLE IN 'B' SIZE TO FIT MOST THEATRICAL LANTERNS
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PHOTO GOBOS

A new refined technology allows Rosco to reproduce photos or other images on to heat resistant glass

Gobos are available in sizes to suit all profiles and intelligent lights
a free gobo catalogue is available from Rosco stockists

Write in Reader Service Number: 133

NEW SMOKE MACHINES ON THE MARKET

JEM HYDROSONIC 2000

PLASA saw the launch of the JEM Hydrosonic 2000, incorporating HOT technology, the first product released since JEM Smoke Machines were purchased by Martin Professional. It produces a virtually invisible haze from large quantities of minute airborne water base particles. The machine then pulses these to create activation of the fluid as small bubbles are formed on the surface. These bubbles burst and the resulting matter is blown from the machine. Consequently there is no need for heat, temperature controls, jets, nozzles or compressed air. From Show Technology.

READERS SERVICE NO 418



MDG FOG/SMOKE GENERATORS

Distributed by Bytecraft, MDG Fog/Smoke Generators are manufactured in Canada and designed for daily and continuous use.

The Max series produce a pure white fog/smoke for maximum lighting drama. The fog/smoke, non-toxic and dry, is produced by mixing MDG Fog Fluids with inert CO₂ gas in a specially designed mixing chamber. It doesn't burn liquid, it boils it to vaporise.

The Atmosphere is a non-stop Haze maker producing a fine haze with a long hanging time. The unit has an integrated fan that disperses at 270°, yet is noiseless. The unit is designed for theatre, TV Studios, indoor laser and live shows.

READERS SERVICE NO 419



GOLDEN FOG

Clay Paky have revealed their prototype smoke machines, namely the "Golden Fog 1000" and "Golden Fog 2000". They utilise non-toxic water-based fluid and can be hung from a truss by means of a bracket with adjustable position. The machine is thermal protected and comes with a multi-function manual remote control.

READERS SERVICE NO 415

RYGER

MADE IN THE UK

SEE THE DIFFERENCE... THEN DECIDE

DISCOVERY 400 HTI



Lamp Wattage:	400	Strobe Effects:	Yes
Colours:	10	Pan Degrees:	180
Split Colours:	2	Tilt Degrees:	90
Gobos:	20	Stand Alone:	No
Gobo Colour Mixing:	Yes	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	18
Rotocolour:	Yes		\$2699 inc. tax

DISCOVERY 250 ELC



Lamp Wattage:	250	Strobe Effects:	Yes
Colours:	10	Pan Degrees:	180
Split Colours:	2	Tilt Degrees:	90
Gobos:	20	Stand Alone:	No
Gobo Colour Mixing:	Yes	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	10
Rotocolour:	Yes		\$1599 inc. tax

DEFENDER 250 ELC



Lamp Wattage:	250	Strobe Effects:	Yes
Colours:	10	Pan Degrees:	180
Split Colours:	2	Tilt Degrees:	90
Gobos:	10	Stand Alone:	Yes
Gobo Colour Mixing:	No	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	8
Rotocolour:	Yes		\$1199 inc. tax

DEFENDER COLOUR



Lamp Wattage:	250	Strobe Effects:	Yes
Colours:	10	Stand Alone:	Yes
Split Colours:	2	DMX or MIDI:	Yes
Rotogobo:	Yes	Weight Kg Approx:	6
Rotocolour:	Yes		\$699 inc. tax

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DEALER ENQUIRIES WELCOME

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Product/Service _____



LXbizzBITS

CONTRACTS/NEWS

COEMAR WEB PAGE

Coemar De Sisti Australia Pty Ltd now have their own company home page. The page has Products, News, Reviews and Cool Sites.
<http://www.pb.com.au/pb/pages/17558/>
Enquires to: Coemar De Sisti (03) 9467 8666.

CREATIVE LIGHTING

Creative Lighting, Brisbane, have increased their hire stock by adding 6 Le Maitre smoke machines.
Enquires to: Creative Lighting (07) 3252 5686.

PEOPLE

NEW STAFF AT SHOW TECHNOLOGY

Show Technology have appointed Tony Raad as their Dealer Sales Executive to better service the Show Technology dealer networks.
Enquires to: Show Technology (02) 9898 1111.

NEW GUY AT LSC

Greg Anderson has joined the sales staff at LSC Electronics. He comes from a technical musical and theatre background and will be kept busy servicing the Victorian market.
Enquires to: LSC Electronics (03) 9561 5255.

MAC 1200



PLASA marked the official launch of the production version of the MAC 1200, the most powerful driven-yoke automated luminaire on the market today and the first of its kind from Martin. With precision, high-resolution movement and digital tachometer error correction, the MAC 1200 delivers a choice of six beam apertures, from wide (32°) to very narrow angle (2°) all of which can be softened with a switchable frost.

The MAC 1200 has full colour mixing plus a four colour wheel and uses the MSR 1200 lamp with Martin's unique hot-spot smoothing technique for a very even field. It has many other attributes and is fully DMX implemented.

As part of the Sydney launch of Disney's new animated feature, *The Hunchback of Notre Dame*, the Walt Disney organisation presented a 20 minute live show *Disney's Magical Moments* featuring many popular Disney characters.

Ten MAC 1200s were specially flown in from

Denmark for this production and supplied to Chameleon by Show Technology.

In addition to the MAC 1200s, Chameleon also supplied an ETC Expression 2 x control, Jands HP dimmers, power distribution and Altman Shakespeare Ellipsoidal spots.

Chameleon staff included Geoff Kelly (Board Operator), Gavan Swift (design and Programming of Systems) plus factory staff who were responsible for prepping the system.



MAC 1200

READERS SERVICE NO 421



Agents for:



- **Panscan 4**
99 Colours, Rotating Gobos and Prisms
- **Panscan 3**
HMI 1200 and 575, 16 Colours and Gobos
- **Panscan Junior**
200 MSD, 16 Colours and Gobos
- **Follow Me**
Automated Followspot Tracking System



- **Hantarex**
HMI 2500 Outdoor Skyflower
- **Omega DMX**
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VENUE NEWS

HEALTH CLUBS?

Any licensed premise can now be cited and closed for 72 hours if the health and/or safety of patrons, according to regulations, is ignored. This action, no doubt is in response to the outbreak of a form of potentially fatal Meningitis, diagnosed in nine patrons who partied at a western Sydney nightclub, on July 31. Fines of up to \$5000 or jail for 6 months is the destiny of non-complying management.

CRIMS COP OUT

In the wake of the NSW royal commission into corruption, any person known to have criminal associates will be fined up to \$20,000 and banned from obtaining a liquor licence in NSW. Kings Cross licensed venue managers will also come under scrutiny with character checks due in early November. If a licence is cancelled inspectors have the right to seize all liquor.

Gaming and Racing licensing inspectors now also have the power to seize any books, records, registers and any other pertinent documents.

COUNCIL CLUBBED

Strange but true. After a 4 year battle, the go-ahead for a second nightspot in South Terrace, Fremantle has been given, post the decision of QC Christine Wheeler, saying the "the council had slept on its rights too long".

Validity of the cabaret licence was questioned by council, but was dismissed by Wheeler saying that council minutes "appeared to accept that the cabaret licence had been obtained". Wheeler continued "there were many occasions upon which the city could have made it clear (to the developers) that it was proposing at some time to raise the issue of validity, but it failed to do so".

According to sources, the council expects to pay costs up to \$200,000, but Dorigo (the developer) may consider further claims once the premises are opened.

SIXTY BILLION DOLLAR BABY

This has been the average amount gambled nationally and it's on the rise.

Riding on the crest of the wave of gambling, in any form, is a gamble in itself, whether you're a punter or promoter. Lotteries, Racing and traditionally large Casinos and Clubs (in some states) used to be the main fix for the punter. But now, even the average beloved privately owned local pub, houses the 'Casino' or 'Gaming Room'. On a national level, the granting of gaming licences is proving to generate big tax revenue for State governments.

The Victorian government is a winner, with a predicted overall rise of \$100 million in gambling taxes for the current fiscal year to \$1.15 billion. Apart from the famous Crown Casino, the Victorian Casino and Gaming Authority approved 87 poker machine licences in '95-'96 with an expected 120 further licences predicted for '96-'97. Canberra clubs boast a 1996 gaming machine revenue of \$10.9 million on a turnover in excess of \$1.19 billion in the 68 licensed clubs. While the 1452 NSW clubs handled approx. \$20.5 billion with revenue of \$1.9 billion paying a gaming levy of \$407 million.

But, this latest trend has also seen the entertainment service industry expand into an area not previously conceived, another winner. Most 'Casinos' or 'Gaming Rooms' have a reasonable sound system as well as architectural lighting. Some have expansive video display systems, while others even incorporate a small stage and dance area for the bereaved widow(er)s of the enthralled player. Interior and technical design for these venues has become big business.

One down side of the gambling explosion is, unfortunately for many, the cost to the average family, especially when the family bread winner is a gambling addict. The situation has also caused financial downturns in many traditional gambling areas including racing. Tasmanian Racing Director, Michael Martin, has stated that a TAB report projected a revenue loss of approximately \$3 million.

COUNTRY CAPITAL CHAOS

Tamworth has been the site of the Australian Country Musical Festival, for as long as any care to remember. The need for a major seating venue in Tamworth NSW, has not gone un-noticed by country music lovers world-wide.

Well, the decision to go ahead has been made, but typically, there is council and community, indecision and confusion, about the site. One argument is a brand new multi-function construction at the regional sporting complex, while others argue that the Tamworth Workmen's Club presently being taken over by the Services Club, could be redeveloped to become a multi-function centre, seating 3,500-4,000 people.

Don't you just love civil procrastination.

OLYMPIC 2000 STADIUM - OGDEN IFC

Ogden International Facilities Corp. has been officially announced, as the contracted management of the 110,000 seat, \$665 million Olympic 2,000 venue. Ogden IFC will coordinate operations, design, construction and financing for the next 13 years, retro to May of this year.

By the time the Homebush stadium opens Ogden IFC predict a full-time staff of 74 with an extra 3,000 employees anticipated for major events. The stadium will however be managed by the Sydney Olympic Committee during the course of the 2000 Olympics.

VENUE VIOLENCE

In response to a rash of anti-social violence around the Australia, most states are looking to review licensing laws.

The South Australian Liquor Licensing Court has recently suspended the licences of two clubs, the first in Hindley Street the other at Christie Beach.

South Yarra, Victoria, has found itself the subject of a report, citing Chappel St. and Toorak Rd. night life as the cause to "Violence, harassment, vandalism, litter, broken glass, vomiting and urination in streets and buildings". Lygon St, home to some of Australia's finest restaurants, has also had it's own problems. A King St. night club security guard avoided shots from a semi-automatic weapon recently. Patrons huddled while the gunman, who had earlier been refused entry to the club, was wrestled and disarmed by the club security team.

In NSW an under-age dance party went badly wrong when, the event was cancelled. The organiser refused the blame saying (in the Sydney Morning Herald) that "the licensee of the Bristol Arms Tavern, cancelled the event five hours before it was to begin after admitting he did not have an appropriate licence to hold such a party". The youths then went on a rampage of destruction and muggings.

NSW club and pub employees are now entitled to refuse entry to or have removed, any person who is excessively intoxicated, violent or is peddling goods on the premises. A drunk who refuses could face fines up to \$5,000 and the licensee of a venue, encouraging liquor abuse faces the same fine.

Venue News and Features are compiled by Caroline Grafton. Call (02) 9876 3530 or fax (02) 9876 5715 with any information.

CLUBSCENE AROUND THE NATION by Nicole Morris

On George St in **Sydney**, a new bar, restaurant and nightclub venue has appeared. The restaurant combined with bar is titled **The Outback Bar** and upstairs nightclub **The Shack**. The new venue breathes the air of the Australian outback, furnished with wooden bench seats, tree trunk seats, and corrugated iron and fence palings, combined with modern stainless steel and is overflowing with Australian paraphernalia. The Outback Bar serves up Australian style with Crocodile Burgers, Kangaroo Steaks and Native Bush Salads, and it's opened 7 days for lunch and dinner. In **The Shack**, upstairs from The Outback Bar you will hear the sounds of Mainstream music from the 70's, 80's, and 90's. Club entry will cost \$10 and is opened from 8pm, Thursday, Friday and Saturday nights.

Care Factor Promotions brings you the sounds of Gothic, Indie, Alternative and Punk every Thursday and Friday nights now at the **Paladin in Melbourne**. Thursday nights it's Clockwork Orange starting from 10pm with the best of Indie and Alternative all night. On Friday nights enjoy Alternative and Punk at Oxide from 9pm 'til late. Entry is only \$7 (\$5 with a pass and \$3 for members) and this entitles you entry to the new venue which houses 6 rooms, including a games arcade, chill-out room, jacuzzi and heaps more. For more information call Care Factor Promotions on (03) 9663 2209 or 019 404 169. You will find the Paladin on Bourke St in the heart of Melbourne.

The **Lansdowne Hotel at Broadway** has been given a new life. Newly managed and recently refurbished the Lansdowne now provides Sydney with Jazz, Funk, Latin, Fusion, and more on Wednesday nights from 9pm. The door charge is free, with reasonably priced drinks. You'll find The Lansdowne on City Rd in Broadway.

Alchemy in Carlton, Victoria provides you with two levels of Gothic and Industrial music (retrospective and progressive) on Friday nights. Just recently opened at Dream Nightclub on Queensberry St, Alchemy hits off at 10pm with a \$6 cover charge (\$5 for those with a pass). DJs include Paul Cook and Liam Harrison, doors are open 'til late.

For pure Rock in **Brunswick**, Victoria, make your way to The Moreland Hotel for **Filth**. Filth kicks off every Saturday, from 9pm and entry is \$7. The Moreland is on the corner of Sydney and Moreland Rds, Brunswick. Call 03 9386 3748 for details.

Every Saturday at **The Exchange** (street level bar) you'll find Chasers. Only recently established Chasers is making Oxford St jump with DJs such as Steve B and Grant Truslove. The club opens at 10pm with a \$5 dollar cover charge, and puts out the sounds until 7am Sunday morning. The Exchange is on Oxford St in **Darlinghurst**, Sydney.

If Tuesday nights are quiet, the place to party is **Dubology**. Set in the back bar of L'otel in **Darlinghurst**, Sydney. Dubology with DJ Crucial fills you up with Soul, Hip Hop, Jazz and

Heavy Dub, while you sit back and enjoy the atmosphere with a meal or just a drink. Dubology is pumping every Tuesday night from 8.30pm 'til late.

In **Brisbane** every Friday Night from 5.30 **The Komodo Club** and DJ Kesson provides you with a full night of Dance music. On Saturday nights DJ Kesson is joined with Master Lau for another night of dance music from 7.30 pm. The Komodo Club will cost you \$8 and you will find it at the Carlton Crest Hotel, cnr of Roma and Ann Sts Brisbane.

For a groovy night of Seventies music in the **Geelong** area, head for **Lyric's Timewarp**. Held every Friday night from 9.30pm, Timewarp takes you back to the days of Glitterama with 70's music and style. Timewarp goers can have their hair done for free at the Timewarp Beauty Salon or after a few hours dancing you can relax in the Bean Bag Lounge. Timewarp is free before 11pm or \$5 entry after. Geelong's Lyric is on the corner of Gheringhap and Little Ryriest Sts, Geelong. Phone 052 231 414 for more details.

Just recently opened at **Channel 13, in Fortitude Valley**, Brisbane is a Wednesday night attraction called **Disco-Ordination**. The night features Dance, Trance, Techno, and Pop music. Doors open at 8pm with a cover charge of \$3. Arrive for Happy Hour from 9 through to 10 for \$2 standard drinks. Channel 13 is housed in the Prince Consort Hotel, Wickham St, Fortitude Valley.

New every Thursday in **Mentone**, in Melbourne students can get down at **The Edgy**. Specifically held for students The Edgy pumps out the best of Dance, Indie, Alternative and Brit-pop music. Doors open from 4pm with no cover charge. So for a night of cheap drinks, pool and great music, students head for The Edgy at The Mentone Hotel, Mentone. For more info call 03 9585 0088.

Also new in Victoria is the **Sonic Lounge in Fitzroy**, Melbourne. Housed in The Rochester Castle, Sonic Lounge provides you with a cozy atmosphere of Funk, Jazz, Soul and Blues. Happening every Sunday from 7pm, Sonic Lounge is a free live venue, featuring different acts every week. So for a meal or just a drink and some live Jazz or Blues head for The Rochester Castle in Fitzroy for Sonic Lounge.

St Kilda, Melbourne has had a new Dance club hit its streets, called **Club Embrace** and is held at the recently renovated Club Chevron. Opening at 9pm, Club Embrace boasts four rooms each with its own unique area of entertainment, one of which is the Dungeon, specially lit to create a chill-out atmosphere, playing surrealistic chill-out music. Connected to the Dungeon is the Cyber Office, which spills the sounds of Acid Jazz, Jungle, Blues and the like. The Buzz Bar and The Main Room also newly refurbished with brand new lighting rigs and sound systems. The club is open every Saturday night from 9pm until late and has a \$5 cover charge. For more info call 03 9510 1281.

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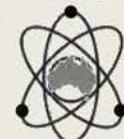
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Venues

THE COLLECTOR TAVERN

The Collector Tavern has been operating for 15 years as a live music venue and is run by Sharon McNamara (Owner) and Geoff Connor (Manager). McNamara has held the title of the youngest female licensee in the Australia.

The Collector Tavern has played host to both National and International acts, including Ween, The Church, Yothu Yindi, Jenny Morris, Chocolate Starfish, The Sharp, Boom Crash Opera, Frente and Meryl Bainbridge. On average, the venue presents 350 acts per year.

Even though the Collector Tavern was voted Best Tavern in 1993 and Best Entertainment Venue in 1995, the owner has undertaken renovations, costing in excess of \$250,000, in an effort to retain high standards for performers and patrons alike.

The Collector Tavern has a strong commitment to un-signed acts, offering one night per week to this effort. The Tavern provides and pays for production and advertising. A live audio feed is available from the audio console to the video system, so a new act can even put together a video clip.....for FREE. But the performers are not the only winners.

The dance floor lighting incorporates traditional par cans with moving lights and an abundance of neon..... The decor is predominantly timber with video monitors and screens providing constant vibrant colour and movement.



THE LIGHTING SPEC

4 x Martin Roboscan 218; 4 x Martin Robo Colour; 1 x 218 system controller; 1 x Martin Fogger; 12 x Par 56; 4 x Circuit chasing Custom Neon; 2 x Strobes; System chase control and touch panel.

THE VIDEO SPEC

20 x Sharp 51cm monitors; 1 x Panasonic projector; 1 x drop screen; 1 x Pan tilt colour camera in Kalatel housing; 1 x Video Matrix switcher; 2 x NEC jog shuttle videos.

LIVE STAGE DETAILS

Triangular stage, approx 7 x 5 metres. 2 x 3 phase outlets located at the rear of the stage. 6 x 240 outlet on stage. 2 circuit.

THE AUDIO SPEC

4 x B Max Trap Boxes Flown - each box containing 1x McCauley 1540 15" driver, 1 x Radian 1.4 horn driver - custom built and designed by Pro Sound; 2 x B Max Sub Box front loaded - each box containing 2 x McCauley 1560 15" drivers - custom built and designed by Pro Sound; 2 x Peavey IP1.3K Stereo Amplifiers; 1 x Peavey CEX 4LA Digital X-over; 1 x Yamaha 2031 EQ; 1 x Denon DN2000 Dual CD Player; 1 x Shure Beta Radio Mic System.

LOAD IN

Load-In access is via George St. The truck loading bay provides a flat 25 mtr. load to stage.

THE PEOPLE AND THE PLACE

Owner: Sharon McNamara.

Manager: Geoff Connor.

Promoter: Tim Kirkland, Peak Promotions.

Audio Design: Steve Weal, Pro Sound.

Lighting Design: Steve Weal, Gordon Campbell, Pro Sound.

Video Design: Steve Weal, Pro Sound.

D.J.: Adam Reilly.

Interior Design: Marilou Palazon.

House Technicians: Pro Sound 9899 9911

Door Charge: Between \$5 and \$15 depending on the act.

Address: The Collector Tavern, cnr. George and Smith Sts, Parramatta, NSW.

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THE PA PAGE

802 Variations On a Theme

By Michael Orland.

There comes a time in every man's life when the thing he needs most is a 7/8" socket spanner. Sometimes he just has to reach out for a jumbo right angled Philip's head screwdriver. And sometimes the right tool for the job is some Bose 802s. Sure, there are lots of alternatives available these days (EV S200s, Eons, etc.), but it's worth writing specifically about 802s due to the sheer quantity of them around the place.

So many handy applications..... A few weeks ago we did a system hire at Bankstown Paceway for 10,000 people. The stage was set up in front of the grandstand, which although not real deep, was pretty wide. Even coverage was the real challenge. During the site inspection I did so much head scratching, the promoter must have thought I had lice.

The initial 3 separate stacks spread evenly each side of the stage was easy enough. But they had to be kept low and angled upwards to provide 100% sightlines of the stage from every seat. So how to do a delayed system for people towards the rear of the grandstand? There were no practical flying points. The only answer I could come up with was hiring 6 18' winchups and chaining each one to a grandstand awning support. Atop each one was an 802 fitted with a spigot. With one of our Yamaha 2030 digital equalisers, no extra processors were required. I think anything other than a mono mix over such a wide area would have been a waste of time, so I fed the same signal into both EQ channels, using the internal delay for the Bose channel as well as raising the high pass roll off to 200Hz to give them room to do what they do best.

(By the way, every now and then I'm asked how to calculate delay settings. For an oldie like me, raised on imperial measurements, it's easy. One millisecond per foot. e.g. 60 feet? 60 milliseconds! For youngsters needing a metric formula: sorry. It's your own fault for being born too late)

Another favourite application for

802s is the private function where the sight of our big black concert cabinets send the decorator/designer off in an absolute tizzy-poo. The 802's plastic moulded cabinets interlock nicely for stacking 2 per side on heavy duty speaker stands. A nice big black octopus strap around the two is a good idea as well. For the ultimate invisible system, the cabinet's size and weight make them ideal for chaining to the front truss. Once blacked off you can then concentrate on playing hide the subs.

Yet another use is as spare stage monitors. ("Oh, we forgot to tell you we got a percussionist coming. Can he have a pair of wedges as well?") In the base of the 802 are two threaded insets for screwing on speaker stand adaptors and various other mounting devices. The bolts



fig 1

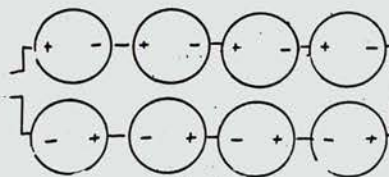


fig 2

for attaching these can be conveniently stored in the clips within the lid. By screwing a bolt into one of these holes, and sitting the cabinet within the lid, you have, depending on the circumstances, effective extra "wedges". The little spring clamps that attach the lid to the box make good fastening points for our ocky strap that keeps the arrangement stable. For a personal monitor, use the bolt-hole closer to the rear. For stage fill, catwalk coverage, etc. use the hole closer to the front. In pokey little gigs where standard side fills are unusable, in go the 802s again. In Sydney's Bridge Hotel we can put two side by side on top of the air conditioning duct and two stacked on the opposite side above the emergency exit doors.

The 802 was originally designed and built around 8 foam surround speakers. The surround is the part of the speaker cone that attaches it to the frame. It's never been a big secret that this foam begins to deteriorate after about ten years, making the speaker unusable. Damp or coastal environments accelerate this deterioration. There are people around that can fit a replacement piece of foam, but of course you simply end up with another speaker with limited life. It really is worth paying a little extra to simply replace the drivers with series 2 types, which use the more standard M type cloth surround. Each driver within the box has a one ohm voice coil. The eight drivers are wired in series to achieve a total eight ohm load, as per fig 2. I have seen quite a few 802s that have had the series 2 upgrades done by their owners, ending up with some of the drivers out of phase. Easy to get wrong. The best way to replace the drivers is one at a time, taking care to note correct polarity each time. Always recheck your work when you finish, using the type of battery on a lead phase checker detailed in my Connections December '94 article. All drivers should pulse in the same direction.

As also mentioned in a previous article, the XLR connectors within Bose cabinets have links between pins two and three. So that if you use speaker cables with links between pins one and two, or if you use three core mains type cable with all three pins wired individually connected to an amplifier with links between its pins one and two, then you are effectively putting a dead short on the amp's output. (bad). Personally, I never connect pin 2 on XLR type speaker leads.

Each cabinet is fitted with a fuse which we have never blown with ordinary use. We have however blown them with bursts of feedback and wiring errors. Always keep replacements handy within the special clips within the lids. As with amplifier fuses, borrowing that spare twenty amp fuse from your car can have expensive consequences.

Michael runs The Public Address Co in Sydney, call (02) 799-7219.

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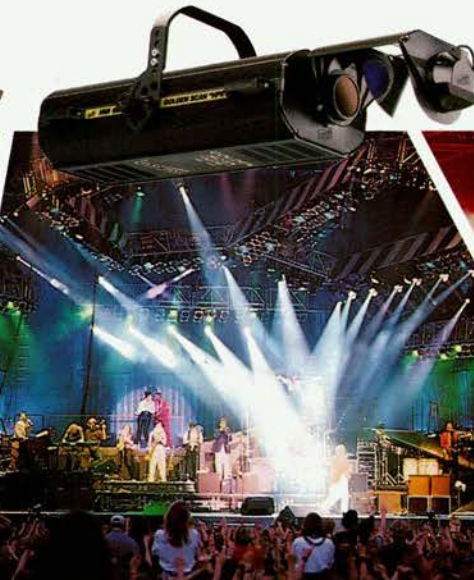
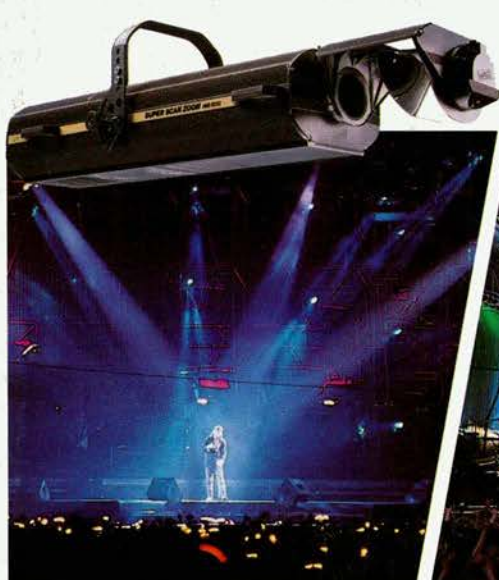


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Super Scan Zoom

Golden Scan HPE

Golden Scan 3



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Lamp	HMI 1200	HMI 1200	HMI 575/1200
Standard lens	Electronic Zoom from 8° to 16°	24 and 15 degree	11°
Optional lenses	—	13 and 9 degree	16°-13°-11°-9°
Electronic focus	*	*	—
Wheel with 7 colours + white	—	*	*
Wheel with 7 special colours + white	*	*	—
Special light blue filter	—	*	—
Rainbow effect, two-colour beams	*	*	*
Colour temperature correction filters	2	2	2
RGB colour mixing systems	*	—	—
Max. No. of colours	Infinite	113	24
Rotating gobos in dichroic glass	Optional	2	Optional
Rotating M-size metal gobos	4	2	4
Fixed M-size metal gobos	4	4	—
Variable speed indexed two-directional rotation of gobos	*	*	*
10 additional gobos in metal	*	*	*
Fixed prisms	—	1 (5 facets)	1 (4 facets)
Rotating prisms	2 (4 facets, 3D)	4 (4 facets, 3D, wake, image doubling)	—
Frost filters	2	2	1
Iris	increased speed	increased speed	*
Dimmer 0-100% - Stop - High speed strobe	*	*	*
Rotation of mirror adapter on projector body	360°	360°	360°
DMX 512, RS 232 (PMX), analogue 0-10V controls	*	*	*
Number of control channels	12/16 selectable	12	6/8 selectable

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