

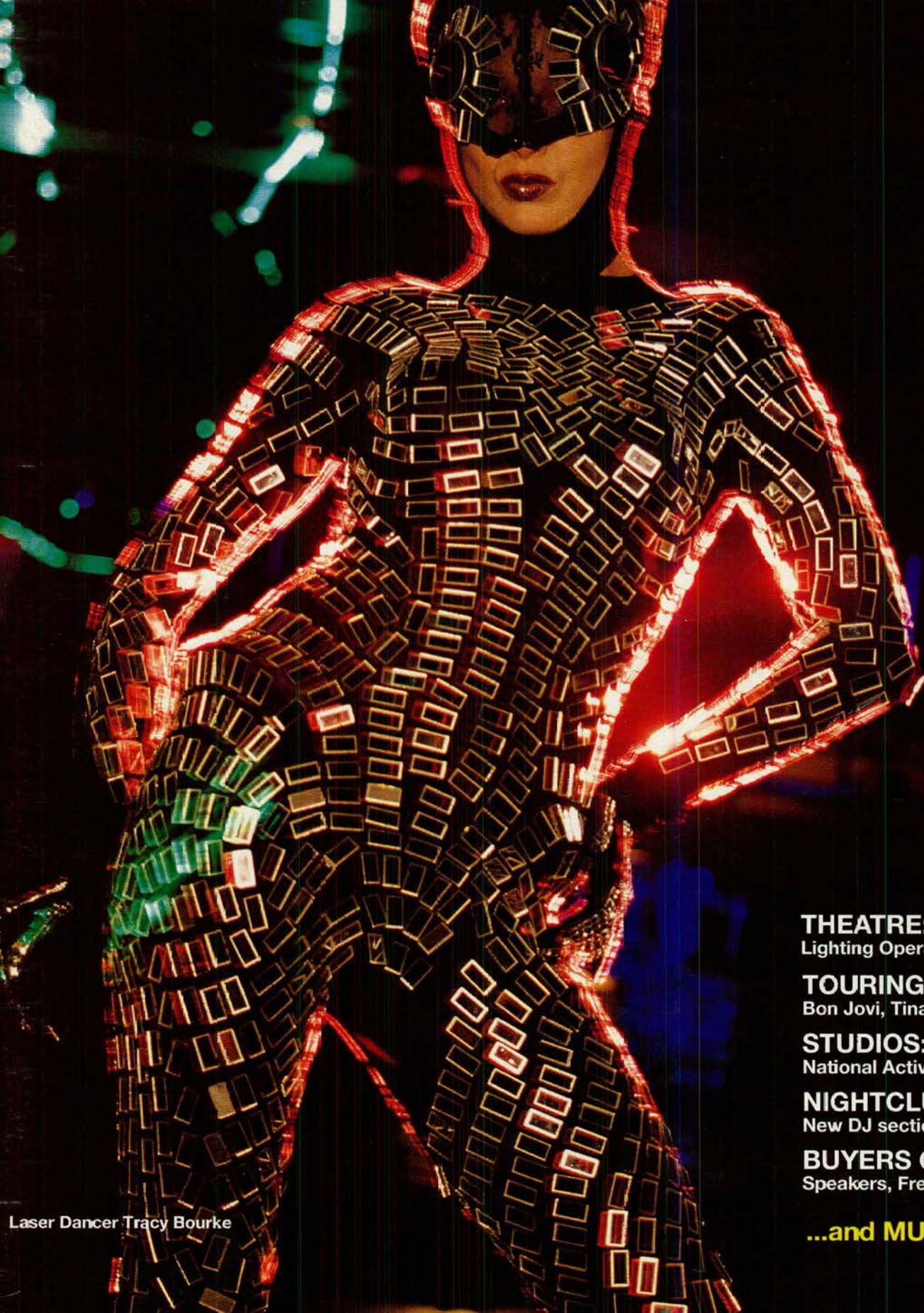
Australia's Entertainment Technology Magazine

\$3.95

November '93

# Connections

SOUND • LIGHTING • STUDIO • AV • MUSIC TECHNOLOGY • THEATRE • TOURING • SHOWBUSINESS



**THEATRE:**  
Lighting Opera

**TOURING:**  
Bon Jovi, Tina Turner

**STUDIOS:**  
National Activity Guide

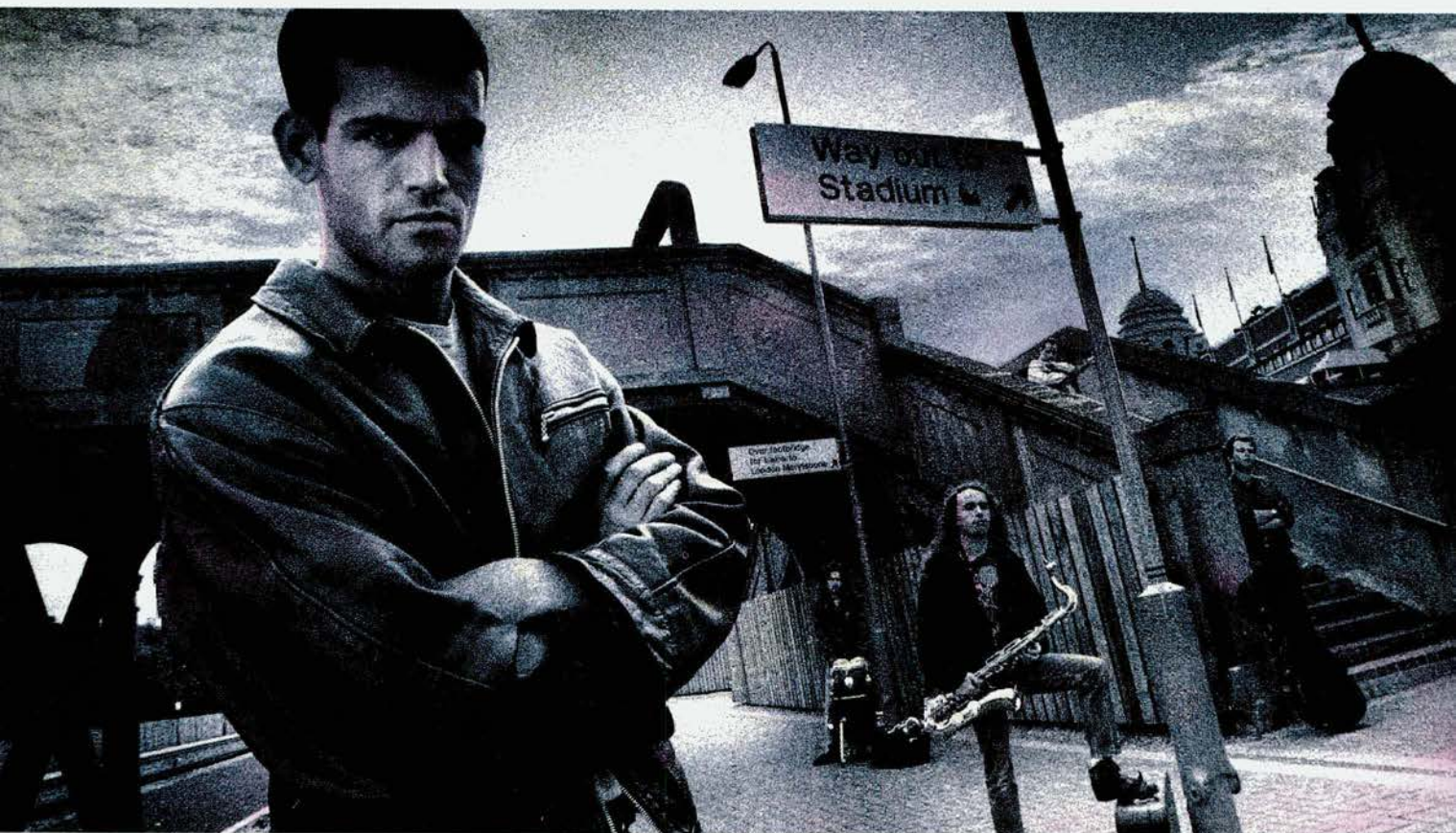
**NIGHTCLUBS:**  
New DJ section & news

**BUYERS GUIDE:**  
Speakers, Fresnel Spots

...and **MUCH** more!

Laser Dancer Tracy Bourke

ARE YOU PLAYING AROUND OR PLAYING FOR KEEPS?



**A**re you aiming for the top? Heart set on the major venues? Then Spirit is with you all the way.

Spirit by Soundcraft - the Big Name in live sound mixing. With over 20 years' experience in the business, we know exactly what you need to succeed.

If you've got the ambition, we've got the range - whatever you require.

**Spirit Live.** The best selling mixer in its class, with its unique stereo plus mono outputs.

**Spirit Monitor.** With 8 monitor outs, engineer's sub wedge and 3-band sweep EQ on every channel, it's the only logical choice for monitor engineers.



And now, the **new Spirit Live 4.** The solution for any tour or installation. Four bus group section for easy sub-mixing or external feeds; 4 stereo inputs with long-throw faders perfect for a host of stereo sources or precise FX control; direct outputs on every channel to feed multi-tracks or external processors. And with 12, 16, 24 and 32 channel frames there's a model for every size of venue.

The Spirit Range. Stunning sonic performance, user friendliness and field-proven reliability. All at an affordable price.

With talents like these, Spirit mixers are certainly playing for keeps.

Are you?

**JANDS**

A.C.N. 301 187 837

**Jands Electronics Pty Ltd.**

578 Princes Highway, St. Peters,

N.S.W. 2044, Australia

**Phone:** (02) 516 3622

**Fax:** (02) 517 1045



New Spirit Live 4

  
**SPiRiT**  
By Soundcraft

■ A Harman International Company

Write in Reader Service number: 104

# FOSTEX

# RD-8

# RD-8

# RD-8

# RD-8

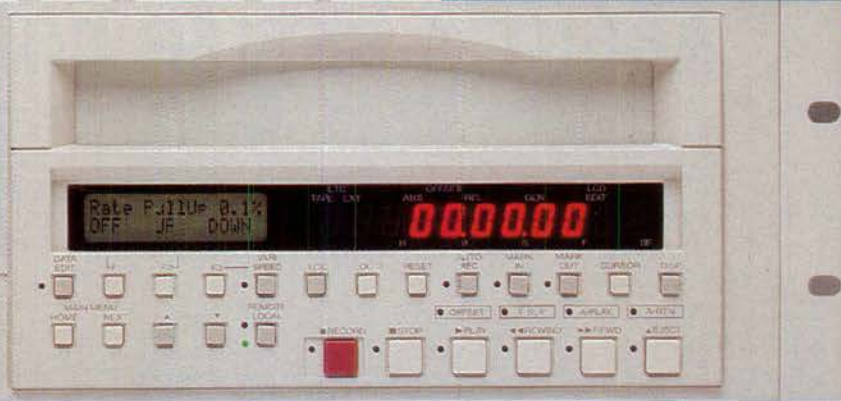
# RD-8

Fostex RD-8 DIGITAL MULTITRACK RECORDER

adat



POWER, CLOCK, FS/MP1, CHASE, DIGITAL, ALL, SEARCH, AUTO, TC, VIDEO, 44.1, LOCKED



- 8 track recorder compatible with Alesis ADAT
- Up to 100 locate memory points are possible
- RS-422 port is provided as standard equipment
- Complies digital I/O: 8 channel serial (optical) ADAT format
- Allows you to set the Pre/Post Roll time 1 to 30 seconds at one second increments
- TC Generator (Int/Ext reference switchable) is installed and can be set to any start time

# adat

**SYNTEC INTERNATIONAL** For the name of your nearest dealer, call:

NSW: (02) 417-4700 VIC: (03) 481-6000 QLD: (07) 371-3999 WA: (09) 275-5066 SA: (08) 211-7044

Write in 108 on Reader Service Card for more info

### Connections Magazine

Published by  
Connections Publishing Pty Ltd.  
ACN 058443182.

#### Publisher & Editor:

Julius Grafton.

#### Features writer:

Catriona Forcer.

#### Co-Publisher, Studio News:

Caroline Grafton.

#### Showbiz Editor:

Jennifer Temm

#### Contributing writers:

Duncan Fry, Danny Dun,  
Bob Armstrong, Howard Jones,  
Paul Bryant, 'The Idiot', Glenn  
Leembruggen, Bruce Waite &  
Dave Macken, Phil Tripp,

Michael Orland.

#### Advertising:

Caroline Grafton.

#### Administration, Sanity:

Elaine Auld

#### Graphic Art & Layout:

Josh Luo, Catriona Forcer

#### D.T.P. System:

100% Apple Mac

Advertising: (02) 876-3530.

Editorial: (02) 876-2612.

Faxes: (02) 876-5715.

International prefix: (+61)

#### All Mail:

P.O. Box 439, Epping  
NSW 2121 Australia

**Subscriptions:** AUSTRALIA:  
\$29.50, see pull out card inside  
magazine. NZ: NZ\$55- call us.  
ELSEWHERE: US\$60 Airmail. All  
rates for 12 months/ 10 issues.

ISSN1320-5595

100% Printed in Australia.

© All contents © Connections Publishing Pty Ltd, 1993. Nothing herein to be reproduced in any way or transmitted by any means without the express written consent of the Publisher. No Warranty is extended in respect to any information herein. Opinions expressed in Connections are by no means those of the Publisher. Materials herein reproduced in good faith. Corrections made wherever material errors occur. It is a condition of purchase that the Publisher does not assume liability or responsibility for loss or damage that may result from any inaccuracy or omission in this publication. Cover price \$3.95 rec. maximum only. Connections Publishing Pty Ltd: ACN 058443182. Directors Caroline & Julius Grafton.

Published **monthly** except July & January. Issues: Feb, Mar, April, May, June/July combined, thence Aug, Sept, Oct, Nov, Dec/Jan. combined - **out late: DEC 15th.**

## Trade Issues

While the Music Trade struggles with untenable noise regulations (see story this issue), the Pro Audio & Lighting industry moves towards Multimedia and Contracting. Contracting firms are evolving from the Rock & Roll lighting outfits of last decade, who are adaptable and technically smart- new technology is assimilated faster by people in our industry, we are innovative & versatile by nature.

An industry major told me recently he figured the Olympics will help, but the real boon is a drift in consumer spending habits. Our youth, he said, now spend more on entertainment concepts than consumer goods, and this signals the end of the consumer society. With this comes greater competition for the entertainment dollar - and look out for interactive CD's from recording artists.

Finally it's welcome to DJ's with a new section here in Connections.

## A Connections Trade Show!

It's just under a year until ENTECH '94, a brand new tradeshow especially for Connections readers. October 1994 is the perfect time to stage a major tradeshow. It fits between PLASA, AES & LDI- and in 1994 the Regional AES and AIMS - both biennial - are not on.

ENTECH is designed to draw technology together in a 'hands-on' environment. Workshops and Showcase sessions after hours will add value, and a strong international push will promote the show to the Asia Pacific area. The participation of Robert Walker, (AES and AIMS organiser this year while at the Victorian Rock Foundation), is invaluable- having departed the VRF, his experience augers well for ENTECH.

# READ THE BLACK & WHITE ABOUT A BETTER COLOUR CHANGER

## WHY RAINBOW SCOLLERS ARE MORE THAN JUST COLOUR CHANGERS

Colour Scrollers are more than colour changes. But it's difficult to show it in black and white; like you, we're on a budget and our scrollers help you stretch yours and your creative solutions silently.

Imagine this: Performing subtle yet highly effective colour shifts through a night scene, sunset and sunrise; a dynamic cover for scene changes; a myriad of mix effects in musicals and dance; colour control for a followspot rig; multicue colours, up to 16 in 1 second! The possibilities are as unlimited as the imagination.

They're the Rainbow range from Selecon. An everyday workhorse in rigs used extensively around the world. Rainbow provides you with reliability and a support network throughout Australasia. Talk to your nearest Selecon dealer. We'll shed a whole new light on your next project.

The Range - Two 16' 8" Pars and 1200's. Alfresco: 8" for outdoor use. 15": 2kw, 5kw and HMI's. 20": search and CYC lights. CYC: Ianiro CYC one. 8 lite: Thomas/LSD 8 lites. Batten: 200: 9x56 DHA light curtain. Batten: 201: 6x56 Howard Eaton lightcurtain.

Vic LSC call Alan (03) 8369111

QLand ELS call Phil 075-935105

NSW Herkes call Wayne 02-319 3133

SA Osmonds call John 08-410 1111

WA Kosmic call David 09-2423844

# SELECON

## Inside this issue: November 1993

### REGULAR FEATURES:

Showbiz News & Update:	from 7
Profile: Duncan & Paton, Truckers	11
AUX 2: Gossip & Useless information	17
Phil Tripp: Opinion, Aggro & Comment	18
Hire Biz Buz: Hire/Production doings	22
Letters: Our favourite page!	29
Contracting News:	30
Studios: News sections starts:	from 32
Studios: WorkBench, with Howard Jones	33
Studios: Mastering, with Paul Bryant	35
Studios: Bob Armstrong: How to...	36
BASF National Tracking Guide	from 37
Music & Technology pages	from 47
What is MIDI?	47
Info Freako, Q. & A. with Danny Dunn.	48
The Idiot's Guide to Stage Lighting	52
JBL Sound Designer series	54
Peter Kemp: Lighting Column	57
Duncan Fry: an old fart rambles on ....	58
Activity Page, Little Sharkey & Slothman	69
Acoustician: Glen Leembruggen	70
How To PA with Michael Orland	78

### SPECIAL ATTRACTIONS:

#### LIVE PRODUCTIONS:

**Tina Turner:** A great show! Catriona Forcer talks lighting, Julius Grafton sound **24**

**Bon Jovi:** An easy show to mix, according to soundperson Tony Blanc **26**

#### INDUSTRY ISSUES:

**AIMS:** Music Industry comment and reactions. Post Music Show: Bonanza or Blues? **47**

#### THEATRE:

**Opera:** The work of Nigel Levings, lighting designer. He discusses 3 recent productions with Catriona Forcer **60**

#### NIGHTCLUBS:

**New Section:** Tips from D.J.'s, Nightclub Review and lots of new products **from 71**

## Buyers Guide

**SPEAKERS & COMPONENTS:** ALL Prices! **from 40**  
**FRESNEL SPOTS:** All available: ALL Prices! **45**

### HOW TO SUBMIT MATERIAL:

#### 1. TEXT: STORIES, P.R., NEWS...

We PREFER word processor disks, and accept Word or Word Perfect on Mac or IBM PC compatibles. Other word processors: save file as a TEXT file. Always INCLUDE a hard copy with the floppy disk. Disk sizes either 3.5 or 5 inch OK. Deadline 15th.

#### 2. TIFFS and EPS images.

Be sure to include any/all FONTS used. We can only support MAC images. TIFFS we prefer to create ourselves.

#### 3. DESK TOP FILES.

As per above, we support Quark, Pagemaker 5.0 and Freehand on MAC.

#### 4. PHOTOGRAPHS.

Colour Transparency preferred if final image is to be printed colour in the magazine. If final image to be printed mono, then a colour print, brochure shot or black & white print is fine. Do not send negatives. Deadline 15th.

#### 5. AGENCY MECHANICAL DATA.

Advertising film mono 120 lines negative right reading emulsion down. 4 colour separations 133 lines, negatives, right reading emulsion down.

**COVER:** Laser Dancer Tracy Bourke performs at the SLEAZEBALL. Story: Page 20. Photo: Peter Elfes.

# DIDA

## PUTTING *Life* BACK INTO LIVE MIXING

### FEATURES INCLUDE:

- Comprehensive Matrix mixing section as standard on all versions
- Stereo and Mono buses and foldback outputs feed to Matrix section
- CUE can be PFL, AFL or Solo-In-Place (selected on Master)
  - Integral CLEARCOM compatible (3 wire) Interface, supporting CALL light
  - Individual routing to 8 Mono sub-groups, 8 Stereo sub-groups, or
  - Individual routing to 4 LCR sub-groups
    - Eight full-time sends per input
    - Switchable controlled direct send from every input
    - 8 Mute Groups with Mute Safe switching
    - 8 VCA/Mute groups optional
    - Four band sweep EQ with switchable Q on mids
  - Balanced Direct Output at +4 dBu
  - All Matrix master outputs on faders as well as groups



Q2 is fitted as standard with 8 MONO sub-groups. Alternatively, Q2 may be specified with 8 STEREO sub-groups, 4 Left-Centre-Right (LCR) sub-groups, or 16 Mono sub-groups (with paired routing). On versions fitted with the VCA/Mute grouping system, 4 additional modules with the VCA masters and stereo auxiliary returns are fitted.



Prices Start From **\$37,000** REC. RET. EX. TAX

Distributed Throughout Australia By: **SYNCROTECH SYSTEMS DESIGN** Pty Ltd.  
 9c Gibbes Street, Chatswood, NSW 2067.  
**Phone Office:** (02) 417 5088 **Phone Studio:** (02) 552 3577 **Fax:** (02) 417 8360

Write in Reader Service number: 126

# Opal 2802

Australia's Most Precious Gem



#### SPECIFICATIONS:

- 280 W + 280 W, 4Ω
- Status Indicators
- Comprehensive Fault Protection
- Convection Cooling with Fan Assist
- Balanced XLR and Barrier Strip Inputs
- 21 Position Stepped Attenuators
- Optional 70/100v Line, Limiter/Filter Cards, Speakon Outputs
- Bridge Switch



**The Professional's Choice**

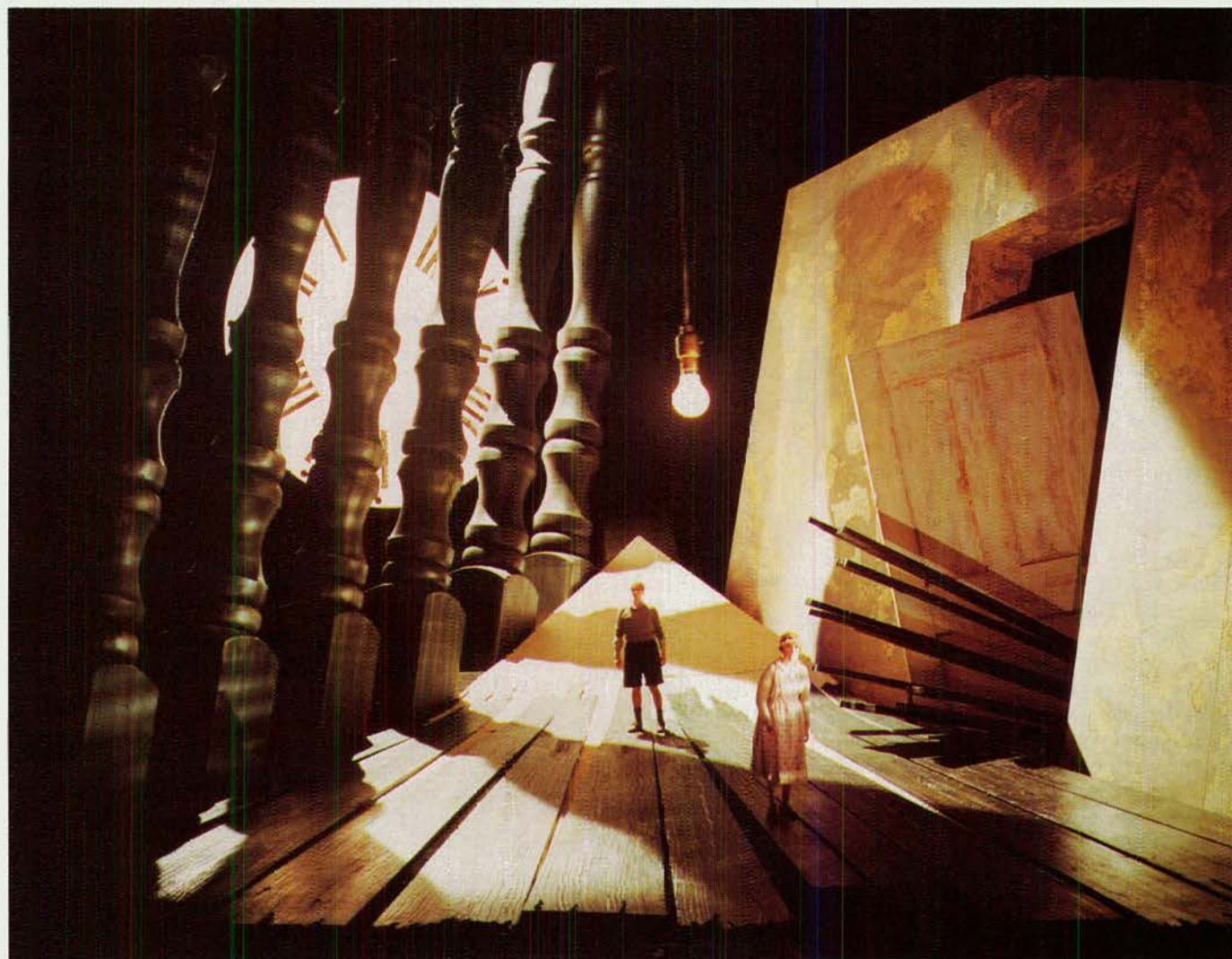
The Opal Amplifier designed and manufactured by Australian Monitor Pty Ltd.

53 College Street, Gladesville, NSW 2111, Australia. Tel: +61 (2) 816 3544, Fax: +61 (2) 817 4303

Write in Reader Service number: 101

# SHOWBIZ

## NEWS & UPDATE



The nightmare world of Hansel & Gretel, lit by Nigel Levi-gs. See story 'Opera' page 60.

PIC courtesy Australian Opera

## NSW NOISE LAWS CHALLENGED

Tough noise regulations attached to the provisions of the Liquor Act have threatened the viability of Sydney's largest regular entertainment event - and led to a hasty Government Inquiry, underway now. Many rock venues have been forced to close since an amendments of laws in September 1990, according to Acoustical Engineer Steven Cooper. "I warned the Australian Hoteliers Association (AHA) of the potential consequences back then, but they weren't interested", he told Connections.

The regulations have made life hell for the Gay Mardi Gras and Sneeze Ball parties, which are staged each year in the Sydney Showground - to the extent recent events have been forced to run music so quietly the patrons have protested. The Gay community has proven that a great influx of tourism is

attached to the Mardi Gras, and obtained a great deal of political clout - such that the N.S.W. Chief Secretary's Department has hastily ordered an inquiry by the Liquor Administration Board (LAB).

The Inquiry was called in early October, and required submissions by October 28th. Its terms of reference required the LAB to canvass interests, including the Gay & Lesbian Mardi Gras Limited, and 'others'. The inquiry will presumably report on the effect of the Liquor Act on the Gay community events at Sydney's showgrounds - but has wider implications for the music industry.

At press time it was not known if submissions from the AHA or the Musicians Union had been made. Similar laws interstate threaten live music. SEE HIRE BIZ BUZ: NOISE LAW & YOU. Page 22

### Product Bits

◆ SHURE's hemi-cardioid surface mount SM91A microphone is the ultimate kick drum mic, says Bon Jovi engineer Tony Blanc. See P.27

◆ 17 FOSTEX ADAT compatible RD-8 recorders had been presold by October, say Syntec International. Stock was expected during this issue cycle, turning the 8 track digital recorder war into a three sided battle incorporating market leader Alesis and Tascam with the DA-88.

## BRIEFS

Production Audio Services has recently been appointed the exclusive Australian distributor for Community's CSV & CSX ranges of loudspeakers. Products range from 8" 2 way cabinets through to large 2 x 15" 3 way and 4 x 12" 3 way cabinets. Horwood Australia retain the distribution of Community's M4 and RS products. Call P.A.S. on: (03) 852-0900.

Lightmoves have the new Teatro RIGA 500w compact floodlight system, available in singles, 3 way and 4 way combinations. 220mm tall x 144mm deep, 250mm, 750mm or 1000mm wide. Call (02) 560-000.

EMI Studios 301 have chosen Australian Monitor AM1600 and 1K2 amps for control room monitoring after extensive appraisals.

6 months after Audio & Recording released the SADIE hard disc recording system Version 2 has been announced. It has a redesign of the user interface and significant new features. Grevillea Studio in Brisbane have bought one. SADIE gives Sonic Solutions a run for its money, call A.&R. on (02) 316-9935.

Fairlight are now able to play back 12 to 16 simultaneous tracks of audio from the new technology Tahiti-III Optical drive. This helps users of the MFX-2, because removable media is where it's at, according to John Lancken. 4 hours storage per disk is possible, they say. 'Lossless data compression' is now supported for tape backup, which now occurs at 8 times mono play speed. A recent MFX-2 sale of 5 systems to Todd-AO Glen Glenn in Hollywood sees the machines configured with a 3.6 Gbyte hard disk, and the Tahiti Optical drives. Call (02) 975-1230.

Geoff Grist at Audio Services Corp can put you in touch with the Cinema Audio Society in Hollywood if you'd like to join. Geoff is a member, he thinks it's well worthwhile. Call him in Sydney: (02) 901-4455.

## PRODUCTS



Turbosound's new FLOODLIGHT 760 (top) joins the High Q Flashlight system. Floodlight offers 50° coverage vs. 25° from Flashlight. It's a 3 way box, loaded with a 12" woofer (180 - 1.3kHz), a 6.5" mid driver (to 8kHz) and a 1" titanium compression driver. A 21" sub woofer is available. Call Frank Hinton's ATT Audio Controls, (03) 379-1511

Meyer intro the MSL-2A (below), which was nominated for a TEC award. Call Audio & Recording, (02) 316-9935 for more info.



## MOVES

New ticketing agency Hip Tix has opened in Sydney. The agency allows show goers to call up and buy advance tickets on credit card for a \$1.50 fee. Outlets are also planned for cash buyers in the near future. Phone (02) 550 6120 or fax (02) 566 4333 for more information.

In a move which just happens to coincide with the onset of warmer weather, coast lovers Brandon Saul Management have shifted from Collaroy on Sydney's northern beaches to (sigh) Byron Bay's Conference & Holiday Centre, Ewingdale Road, Byron Bay 2481. Phone (066) 85 6570, fax (066) 85 6179.

The Musicians Placement Service has moved to 9/2 Lytton Street, Cammeray 2062; phone (02) 956 6281.

Immedia PR has expanded again with employee number 10. Raylene Turner. Turner previously worked as EMI's data entry and promotions assistant and will be working on Immedia's music and new sports directories.

Under New Management lives up to its name with rooArt marketing person Michael Tame taking over as manager, replacing Gina Karpman who is heading overseas.

Festival Records' publicity and promotions person Vivien Fantin has joined Wendy Boyes-Hunter's Oz 'N' Enz Publicity.

The NSW branch of Warner Music has shifted from its Frenchs Forest office and is now based at 39-47 Albany Street, Crows Nest 2065. Phone (02) 950 1500, fax (02) 950 1444.

Ausmusic has announced the appointment of senior Victorian public servant Ian Allen, Brash's recorded music division general manager Matthew Campbell and BMG managing director Michael Smellie to its board of directors.

## Gobo maker

Now you can brew your own GOBO, with this neat kit from M & M Camelont. Using a unique film, you can make an aluminium gobo from good quality artwork, including laser printed images - even a faxed image! The resultant gobo is said to be stronger than a stainless steel version.

The kit has a light box, containers for chemicals, an automatic timer, protective gear and has sufficient film and plates to make 10 gobos.

Details and/or demos from Selecon Agents nationally, or call NZ 64-9-360-1718 for info.



# ENTECH '94 TRADESHOW

**SYDNEY:** Connections will host ENTECH '94 - a new biennial Tradeshow event - next October 6th, 7th and 8th at Sydney Exhibition Centre in Darling Harbour. ENTECH '94 is the first Australian Tradeshow specifically aimed at the Entertainment Technology market, encompassing Lighting, Sound and Studio technology together, say the organisers.

"We are at the start of a new era, with our manufacturers already exporting locally designed equipment to the world. Our industry needs a tradeshow not only as a place to do business with Australians, but also to showcase our products to the world", said Connections chief Julius Grafton.

"To do this we have arranged extensive overseas advertising and promotion, including Chinese language advertisements. Our international marketing kicks off this month at LDI in Orlando. We are talking with exporters about direct mailing targets in the year ahead, and other concepts. We'll really go gangbusters to attract international visitors to ENTECH, with keen accommodation packages and a whole lot of exciting 'value added attractions' to be announced closer to next October".

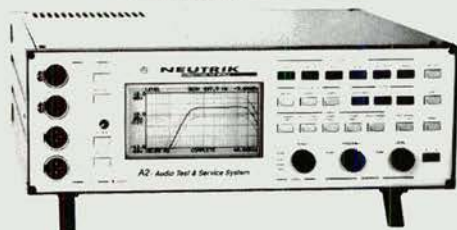
**ROBERT WALKER ON BOARD:** "This year we've seen the Audio Engineering Society (AES) convention for Pro Audio, and the Australian International Music Show (AIMS '93). These are not scheduled again until 1995, so we are not overloading the trade", said Grafton, "but to successfully host a brand new show of this scale we've hired the services of Robert Walker, who organised AES and AIMS in his previous role at the Victorian Rock Foundation. Rob is the industry tradeshow expert!"

ENTECH '94 will run across three days - Thursday 6, Friday 7 and Saturday 8th October, 1994. Entry will be free to qualified trade, without the need to pre-register. "We observed AES and AIMS very closely, and between my partner Caroline and myself, we have been to a lot of international tradeshows this year. We think we know what people like and what they dislike, and it appears the need for value added side events is big - as well as running a focused tradeshow that is about doing business. On top of that, the trade will resist paying top dollar for exhibition space, so we've streamlined the whole thing to make it as affordable as possible. Lean but not mean!"

ENTECH '94 is pitched at attracting major product distributors, and it is expected showbusiness support services like staging firms, production companies, stage makeup, theatre suppliers and show business services like legal and accountancy practices will participate. "This is a trade-fair expo, engineered to bring all major Australian participants into one place. If it isn't exciting, if it isn't 'hands-on', then it won't work. My job is to add enough flavour and interest - to get quality trade visitors through - and I will certainly be doing this in the year ahead", said Grafton.

A trade prospectus will be available later this month, detailing ENTECH '93 in full. For a copy contact Connections Magazine: (02) 876-2612.

## PRODUCTS



### A2 AUDIO TESTER

The new Neutrik A2 Audio Test & Service System is a comprehensive two channel test and measurement system with all the functions needed for audio testing functions, say Amber Technology.

The 'one button, one function' keyboard combined with the LCD graphic display enables complex testing to be performed WITHOUT referring to the owners manual - a big plus we think!

With two simultaneously operating balanced, fully differential inputs, the A2's Analyser section can simultaneously measure level, crosstalk, level-ratio and phase in fully automatic THD, IMD, Noise, Wow & Flutter and other modes. A2 also interfaces with printers and your PC.

Call Amber Technology for info: (02) 375-1211.

## MOVES

Former MD at James Hardie Industries, David Say, has been appointed to the board of audio and video production, distribution and merchandising company Southern Star Holdings.

The new MD of East West Records is Chris Hanlon, formerly publicity, promotions and artist development director. Michael Parisi, who recently resigned from Imago, steps into his shoes.

CC's Light & Sound will open an additional outlet: CC's Stage & Studio, at 538 City Road Melbourne in November. It will stock a comprehensive range of pro audio & lighting, including A.M., JBL, Soundcraft, Ramsa, Prolife & Jands, together with lamps, filters, leads and all such. Call Roger Clapton & co on (03) 690-3999.

## SOUND EDUCATION COURSES

ADVANCED CERTIFICATE - DIPLOMA - PRODUCER  
Full Time - Part Time - Day or evening courses



The ONLY internationally accredited course  
18 colleges worldwide

SAE is the largest audio training college established in 1977.  
Individual studio time - Record your own music - Organised theoretical lectures - Access to all our studios worldwide!



Call for NEW colour brochure and studio tour:

SYDNEY	(2) - 211 3771
MELBOURNE	(3) - 534 4403
BRISBANE	(7) - 369 8108
PERTH	(9) - 325 4533
ADELAIDE	(8) - 376 0931

LONDON - PARIS - BERLIN - MUNICH - AMSTERDAM - SINGAPORE - VIENNA

## INTRODUCING THE BOSE® PANARAY™ SOUND SYSTEM

Whether you oversee an auditorium, manage a transportation terminal, lead a house of worship, run a theatre, or own a nightclub, sound is important to your success.

While its main role is to communicate or entertain, your sound system has another job as well. It helps create an image. And quality sound creates a quality image. One which keeps your audiences, congregation, or patrons coming back time after time.

The Bose Panaray™ sound system delivers the high quality sound for which Bose is so well known. It is a complete, modular loudspeaker system, so its components can be installed in many combinations. And Panaray not only meets a variety of sound needs, it does it with excellent coverage of the entire listening area. All with an elegance that adds to, rather than detracts from, your decor.



**BOSE**  
Better sound through research.

Contact Brian Chilcott on (02) 884 1022 to find out how Panaray™ can work for you.

# DUNCAN & PATON

Trucking duo interviewed by Catriona Forcer

There appears to be three ways of touring in Australia - at the bottom end there is the hired guy with a rental van and at the top end the mega tours looked after companies such as Showfreight. Inbetween is Duncan Paton Touring which is run by Brad Duncan and Beth Paton.

"Our style of touring incorporates the driver as part of the crew and we budget the truck for the whole tour not just the mileage," explained Brad Duncan. "As we are also part of the tour, there isn't much on the tour production and management side of the industry that I don't know. Most of the good tour managers started off as the guy in the truck."

At the time of this interview Brad was tour managing Billy Thorpe as well as touring Siouxsie & The Banshees. His partner Beth Paton doesn't sit in the office filing her nails.

"I don't drive a truck as I don't have a licence but I do go on tour," she said. "That's fun because they don't know who you are. They dismiss me as a 'merch bitch', and consequently say things in front of me that they wouldn't if they knew who I was. It's a hard industry to be in if you're female."

"We've had problems as this industry is so male orientated," added Brad. "To have a female in the business is pretty hard but to have a female in the transport side is even harder. We have to struggle to put over that Beth is as much a part of this business as I am. We've had people not accept quotes of Beth and insist on speaking to me."

One of the most difficult tasks they have is finding decent drivers especially as they have a strict policy which drivers have to adhere to. Drivers must not drink at all or take any sort of drugs, not even amphetamines which many drivers rely on to cope with the long hours and driving distances. One of the main reasons is because if they get pulled up for a search, the police can make the driver, by himself, unload the whole truck and strip the equipment looking for drugs. This could result in the gig being missed. This recently happened with The Screaming Jets coming out of Wyong when the crew car was pulled up and the crew made to strip to their underpants because one of the crew used to do drugs and the dogs could still smell traces in his luggage. Brad was following in the truck and disassociated himself to avoid any hassle. Before the company hire out for a tour they insist on seeing the itinerary and, if they don't think it's possible, they won't do it.

"We've built this policy up over a number of years and so people now know our structure," Brad said. "They will ring us when they are booking the gigs to ask if it's possible. If I say it's not, they know it's not. We don't have a problem with any of the others in this business like Showfreight, TNT or Brambles, it's the little guys who really annoy us. They come in with old vehicles that aren't maintained well enough, drop their rates anything up to \$1000 a week under and they really effect us. Then four or so months down the line, they're gone. You've got to have the back up. It's the poor bands that are

starting that get ripped off. A lot of them don't have the insurance either or go on cargo insurance which won't cover musical equipment if there's an accident."

Duncan Paton Touring own two DAF Prime mover outer trucks which are not particularly popular in Australia but used extensively in Europe.

"The DAFs are absolute reliability," said Brad. "They just keep going for ever. They suit our style of touring where most of the gigs we go to are pretty hard to get into and the crew always want the truck as close as they can get it. We've found with the bonneted trucks like a Kenworth, some of these gigs you can't get into. The DAF has a fantastic turning circle and can turn on itself and push the pan backwards. So getting into gigs is a lot easier. They're not a huge truck and they're limited to a 100K's so it's like I said, the days of doing silly overnights has gone."

On the recent Baby Animals tour, they were coming out of Melbourne to Jindabyne when a piston was dropped out of their truck. A phone call to John Klein Transport resulted in a replacement truck for a few days. The result was that Duncan Paton Touring dropped about \$8500 on the tour but the job was done. In fact in five years they have never missed a gig.

Brad and Beth admit that truck drivers in this business cannot stick to RTA rules because, if they did, they'd never survive financially. "The whole driving licensing law is quite silly because your log, which shows a 24 hour period, only gives an allowance for your actual driving or resting time," Brad said. "With this industry you may do five hours driving, get to the gig to do a thirteen hour day and then do another twelve hour drive. It's only regulating your driving, not your off time."

Brad came out with the wonderful comment 'I wanted to get into the music business but didn't know anything so I became a truck driver!' Brad remembers the time when he had to drive The Hothouse Flowers gear from Melbourne to Perth and the band members all gave him their cameras to record the scenery as they drove. As the lead singer was an avid vegetarian/environmental guy they decided to record on his camera only the road kills along the way. One of the most amazing tours they did was for a strip show called "Pink Pontiac" where Brad also did FOH.

And of course there are still the band molls hanging around who never cease to amaze Brad. There was once a girl after another crew member who was with him in the truck and she begged for a ride even though they were only driving into the gig. "As she climbed in over me wearing a short leather mini skirt she said 'oh, look I haven't any undies on'," recalled Brad. "The last couple of years it hasn't happened so much although the Sonia Dada tour was wild. There were girls everywhere."



Profile

*"As she climbed in over me wearing a short leather mini skirt she said 'oh, look I haven't any undies on!'"*

## Ex Hire Clearance sale now on . . .

Be quick to secure a bargain at never to be repeated prices - some of these beauties should be in a museum, not our hire department.

Sydney • Canberra • Melbourne • Brisbane



The  
P.A.  
People

## PRODUCTS

### MIC'S



The Shure SM-91A's primary purpose is to sit atop a table and be a good omni-directional condenser microphone. (Pictured above) Some engineers find it is great for kick drum, provided the front head is removed or has only a thin (6") border left around



the front of the drum. *Around \$650, Details from Jands, (02) 516-3622.*

The **AKG C5900** Vocal microphone (left) is a condenser unit, requiring phantom power like all other condensers. The transducer element is mounted in a cradle suspension which is said to cancel footfall, handling and cable noise, these things are dealt with by rolling off the bass in cheaper designs.

A synthetic runner model of an anechoic chamber is placed behind the transducer element to prevent reflections inside the mic body. An integrated bass cut/rolloff switch is provided. *\$680.*

Meanwhile the **AKG CK-68-ULS** (below) is two shotgun capsules in one, either full length or part length for different distance mic'ing. *\$1220 retail, Call AWA Distribution in your state for details.*



## VENUES

The Metro is Brisbane's newest "international nightclub" (says the advertising) and officially opened last month at 222 Wickham Street in Fortitude Valley. The venue runs party nights every Tuesday to Saturday and can be contacted on (07) 852 2939.

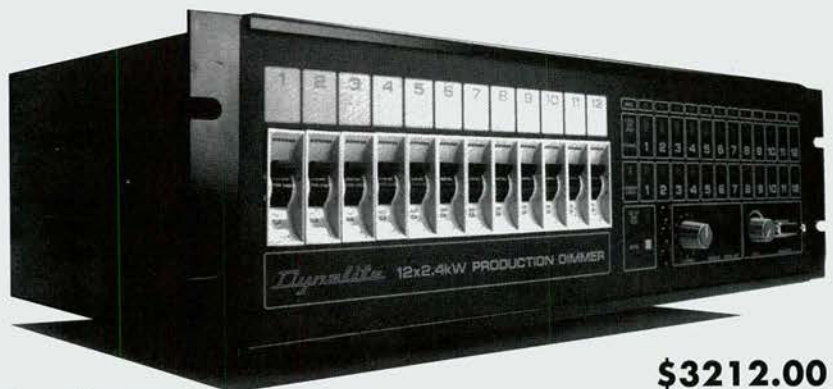
The Sound Factory at the Palace Entertainment Complex also had its grand opening last month in St Kilda. The venue features three rooms with house and guest DJs. Call on (03) 534 0655.

Live shows at Napoleon's Hotel in Sussex Street, Sydney, may just be a fond memory. The pub went to auction recently and manager Vince Carmody says the new owners may not be running bands.

## DYNALITE PRODUCTION DIMMERS

### THE WORKHORSE OF THE TOURING INDUSTRY

- ◆ Fully digital operation
- ◆ 2400 or 5000 Watts/channel
- ◆ Compact - up to 12 channels in only 3U rack space
- ◆ Plug-in or wire-in termination
- ◆ Local front panel level control
- ◆ Choice of dimming curves
- ◆ 3-Phase supply - any order
- ◆ Drives all types of loads including transformers
- ◆ Individual circuit breaker channel protection
- ◆ Multiple control sources including DMX512 and 10VDC analogue inputs



**\$3212.00**  
RRP inc tax

#### Available from:

Creative Lighting, Brisbane (07) 252-5686  
 GUVT, Adelaide (08) 363-0454  
 Integrated Media, Darwin (089) 41-1128  
 Kosmic, Perth (09) 242-3844  
 Lightmoves PES, Melbourne (03) 819-4566  
 Lightmoves Technologies, Sydney (02) 560-0000  
 Top Stage, Canberra (06) 280-5710  
 For regional dealers call Guy Holden at Dynalite

JOHN GUNTON Pty Limited trading as **DYNALITE** ACN 001 693 625 Unit 2, 7 Jabez Street, Marrickville NSW 2204  
 Tel: (02) 564 1400 Fax: (02) 564 1551

Write in Reader Service number: 100

# PLASA

By Peter Kemp

This year's light & sound show in London attracted 150 exhibitors, including curtaining, stage machinery, backstage management equipment and even a company showing a bar coded cloak room system.

Once again the show incorporated a series of Seminars that were aimed to highlight issues of concern to the industry, with a emphasis on looking at the past as well as the future, to determine what can be learned.

Sixty percent of the exhibitors were showing new products. One thing that stood out re PLASA this year was the extremely high stands built by many companies, it seemed as though everybody was trying to build a higher stand than the person next to them (as shown by the photo), one particular stand that stood out was the stand of Lighting Technology comprising of a ground support truss system from Thomas with a complete stage above the general stand area.

Just to set the record straight re. the Zero 88 gocart race, for the second year running Zero 88

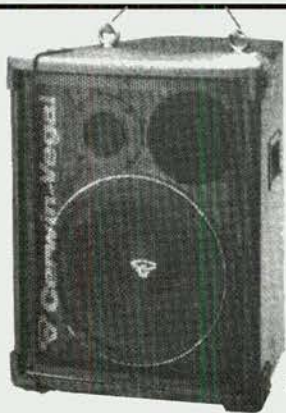


arranged an evening of gocart racing whereby the group was chauffeured to the track from PLASA in a London red bus, a truly international event, the race had 47 drivers from many parts of the world and attracted more than 70 visitors. The program for the evening involved races each with 6 drivers, each driver competed in 3 races and from the results of these races points were awarded to enable a number of semi-finals to be conducted after which a final race was held, yours truly made his way into the final race, but unfortunately came last in this race-the gocart would not go !!

Max's at The Petersham Inn joined the Hopetoun in closing its doors last month. The Inn is being renovated and its future as a live venue is clouded, according to staff.

F Scotts on Hay Street in Perth has re-emerged as The Loft, a tres cool hang for musos and the media as well as yer average punter.

The Loft is running an upstairs dance room with bands downstairs on Friday and Saturday nights. They're looking for more original outfits - call Mark Harford on (09) 480 9999, pager number 253737.



PS10-F

You were shaken by the 'Earthquake', now get ready for the after shock.

**Cerwin-Vega!** announce one of their most important developments in professional speakers in forty years.

# ProStax

The new ProStax Series represents an entirely new generation of professional loudspeakers in terms of application.

ProStax MI and Install Series cabinets are compact and modular. All models share matching curved front profiles and each cabinet side has an inward angle of 15°. This provides for convenient multiple-cabinet coupling or handy cabinet stacking with ProStax's interlocking corners. All cabinets are made of 3/4" plywood covered with rugged Tolex™ vinyl with recessed moulded handles.

- MI Series available with pole mounting or stacking on subs.
- Installation/Concert Series available complete with flying points.

From the 10" 2xway system to the 18" folded horn cabinet - **ProStax** is for the professional.



PS-10

PS-12

PS-15



Exclusively Distributed Throughout Australia By: ASHTON ADMOR Pty. Ltd.  
34 Hargreaves Street, PO Box 305, Belmont, Western Australian 6104.  
Ph: (09) 478 3800 Fax: (09) 479 1941

Write in Reader Service number: 125

dmx Commander

SHOWCRAFT

## WHAT'S THIS?



## IT'S A

### RIGGERS CONTROL

Plugs straight into the dimmers and you get full lighting control right there on stage!

### IT'S A

### BACKUP CONTROLLER

You won't be left in the dark if the main desk goes down.

### IT'S A

### DMX TESTER

A quick checker for technicians and hire companies.

## It's Only \$395!

Available from  
Lightmoves, Sydney 560 0000  
Lightmoves, Melbourne 819 4566  
Coemar Desisti, Melbourne 467 8666  
East Coast, Brisbane 252 9583  
TheatreCrafts, Perth 227 7015  
Showcraft, Sydney 698 3009

Proudly Made in Australia by **SHOWCRAFT**

Write in Reader Service number: 118

## Events

### NETAA SEMINARS

The National Entertainment Association of Australia will run seminars over forthcoming months, at a cost of \$5 (members) and \$25 (non members). They are:

#### 1. Colour Filters

Ian 'Rosco' Baseby will go over use and types of colour filter.

**On: Tuesday 16th November.**

#### 2. Pyrotechnics

Jonathan 'Le Maitre' Ciddor will overview pyro effects and safe use. **On: Tue 15 Feb, '94.**

#### 3. Voice Reinforcement

Intro to voice reinforcement techniques, by Michael Summons. **On: Tues 15 March '94.**

The venue for all above is Rafferty's Room at the Riverside Theatres, cnr Church & Market Streets, Parramatta NSW.

To book call (02) 697-4860 or send money to: NETAA, PO Box 517, Kensington NSW 2033. You CAN pay at the seminar, but it's preferable to prepay and register first.

NETAA membership costs \$25 for students or \$50 for individuals. Contact above.

### New Product Expo

Coemar DeSisti Australia will conduct a new products expo at their Melbourne premises between **Nov. 30** and **December 2nd**. Attend in business hours by calling first, or just front up on the 'Open Nights'-Wednesday 1st or Thursday 2nd December evenings, between 7.30pm and 10pm.

Products on hand will include the new all moving NAT TM2500 articulated light, Baby Colour, Microscan 575, the deSisti Studio Hoist, studio luminaires and of course Compulite consoles.

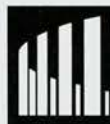
C.D.A. have ShowCAD and Microlux software too, so if a detailed run-through is desired make a time during the day sessions. **Call (03) 467-8666. Location: 36A Clements Ave, Bundoora, Vic.**

### LDI Orlando now!

Connections' Caroline Grafton will attend LDI '93 in Orlando between November 12 - 14. This tradeshow is one of the 'must sees' for our industry, and also hosts a series of workshops. Caroline will report on the latest from LDI in the December/January bumper issue, on sale by December 15th.

## Tradeshows

- \* LDI '93, Orlando, Nov. 13 - 15.
- \* Comdex, Las Vegas, Nov. 15 - 19.
- \* NAMM, Anaheim Jan 21 - 24, 1994
- \* AES Amsterdam, **NEW DATES:** Feb 26 - Mar 1, 1994
- \* SIB-RIMINI, Italy, March '94
- \* NSCA, Las Vegas, 7-9 April '94
- \* Pro Audio, Light & Music, Beijing May 16-21, '94
- \* World Lighting Fair, Tokyo, 16 - 18 June, '94
- \* SMPTE '94, (Sydney) July 5 - 8, 1994.
- \* Pro Audio & Light Asia, July 6 - 8, 1994
- \* PLASA, London, Sept 11-14 1994
- \* **ENTECH '94, SYDNEY 6 - 8 October 1994**
- \* AES 97th, San Francisco Nov 10 - 13, 1994.



The  
P.A.  
People

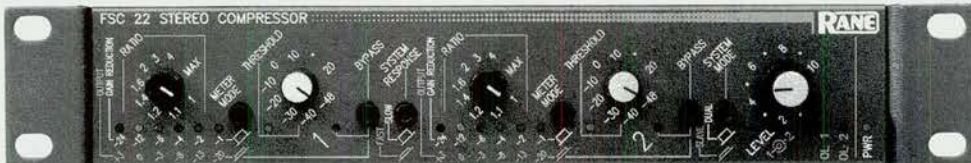
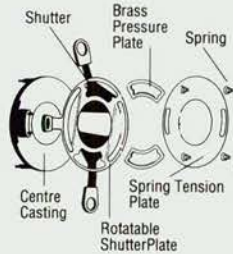
**Sydney: Ph 642 5344**  
432 Liverpool Rd, Enfield  
**Canberra: Ph 280 6411**  
85 Wollongong St, Fyshwick  
**Melbourne: Ph 808 2111**  
2 Florence St, Burwood  
**Brisbane: Ph 857 6855**  
84 Newmarket Rd, Windsor

# PRODUCTS

## Zoomspot 1200

The Selecon Zoomspot 1200 range has been 'enhanced', (which is New Zealand-ish for 'improved') by virtue of a more efficient flat field reflector, and a cast shutter assembly. More light output is provided, and operating temperature is lowered to 135° C maximum. An onboard microswitch is fitted. The new floating pressure pad shutter tension system is shown at right. It looks promising to anyone used to maintaining lanterns!

Details from Selecon agents or call the motherland direct on 64-9-360-1718.



## NEW AUDIO FROM JANDS

RANE have added four new modules to the half rack width FLEX range. The FAT22 is a two channel transformer isolating balancing box, the FBB Balance Buddy converts and isolates un-balanced to balanced and reverse, while the FVL22 is a two channel remote VCA/limiter. Pictured above is the FSC22 two channel compressor/limiter with system response pushbuttons to select fast/slow and attack/release times.

JANDS themselves build the SR-1500, a new addition alongside the SR-3000 Split Rail amplifier.

The SR-1500 delivers 410 watts per channel at 4Ω, and the Split Rail design allows these amplifiers to engage a supplementary high voltage stage when called upon to deliver high level transients. Up to 3dB headroom is the result. The two rack unit tall amplifiers have been road tested at length.

Contact Jands Electronics: (02) 516-3622.



## MEDIA REVUE

By Jennifer Temm

The "Without Prejudice" prefacing Immedia PR boss Phil Tripp's recent letter published in *On The Street* seemed a little tongue-in-cheek. Apparently the Sydney street mag published a shot of Tripp and Noel Crabbe, publisher of *OTS* and the as-yet-unseen Australian Music Business Index directory, shaking hands at the AIMS show in Darling Harbour.

The caption indicated the two were chatting like old mates but Tripp stated categorically that "Nothing could be further from the truth".

Speaking of which, the AMBI directory is now four months late and counting...

Think the street press is full of badly written crap? So do we, but in all fairness it should be noted that street press pay rates for reviews and stories begin at the princely sum of... nothing.

Many street papers simply hand over record company supplied CDs in return for album reviews, while full page research and interview stories are worth anything between \$35 and \$100, or up to about one-

AIBA GROUP

Incorporating MGA Bates Insurance Brokers

"BEST INSURANCE BROKER"

1991 & 1992 Australian Music Industry Awards

(02) 957 3211

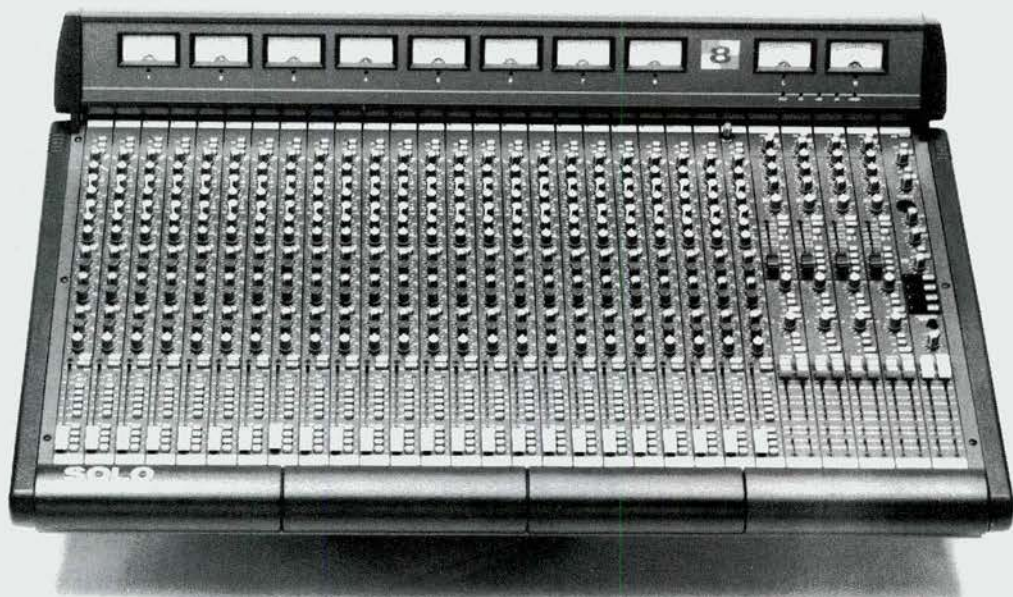
CONTACT KEN KILLEN or IAN STACK  
Level 11, 118 Alfred St, Milsons Point, NSW 2061  
PO Box 1809, North Sydney, NSW 2059  
Ph: (02) 923 1066 or (02) 957 3211 Fax: (02) 929 4584

Insurance Specialists for

- MUSOS ■ RETAILERS ■ WHOLESALERS
- STUDIOS ■ TOURS ■ TRUCKS & CARS
- SOUND & LIGHTING
- REPAIRERS ■ EVENTS
- HOME & CONTENTS etc etc

WINNER 1992 INSURANCE BROKER OF THE YEAR  
National Insurance Brokers Association Award

Write in Reader Service number: 129



## SOLO 8

The new **SOUNDTRACS SOLO 8 LIVE** mixing console is specifically designed for front-of house sound reinforcement. Available in 24 and 32 input configurations, the SOLO 8 joins the Soundtracs SOLO LIVE Series.

The console features include group mutes for rapid scene changes, VU metering of the group, master and solo outputs, signal present indicators on each channel together with peak LEDs, solo in-place, four stereo effects returns with fader control and switchable input sensitivity. Each channel features a fully balanced microphone input on XLR style connectors, phantom power, quasi 4-band equalisation, and a 100mm long-throw fader.

Group output modules have a route to Mix switch, Pan control, and illuminated AFL (after fader listen) and Mute switches. Four comprehensive stereo effect returns controlled by 65mm faders each have HF and LF filters, plus access to auxiliary busses 1 and 2, balance to L/R mix, PFL (pre fader listen) and an illuminated Mute switch. Six auxiliary masters complemented by AFL and talkback switches are also located on the group section.

The Master Output section features IPS (in-place solo) to determine positioning of any signal within the stereo image. Contact **AMBER TECHNOLOGY** for further info, (02) 975-1211.

## MIXERS

### GL-2 Versatile

Allen & Heath have produced a professional mixer that does FOH, foldback, or true 4 track, and it sells for \$3,325. The GL-2 is either an 18:4:2:1, 14:6 monitor desk, or 14:4:4 recording mixer, at the press of a button or two.

With long throw faders and four band EQ including two mid sweeps, the GL-2 has 6 pre/post auxiliary sends, is rack mountable, and offers 'Sys-Link' to another console at bus level when more inputs are needed. The EQ can be switched in or out.

Four effect returns and extensive patching complete the picture. Call Studio Connections, (03) 723-4300 for a brochure.



## MEDIA

(continued)

tenth of Australian Journalists Association freelance rates. You know what they say about paying peanuts... (Wha...? Ed)

*Inpress* in Melbourne has introduced *Zebra*, a 24-page magazine insert covering clubs, fashion, restaurants, dance music charts, news and reviews. The editor is Darren Fishman and the mag can be contacted at 220 Clarendon Street, South Melbourne 3205. Phone (03) 696 4511, fax (03) 696 2398.

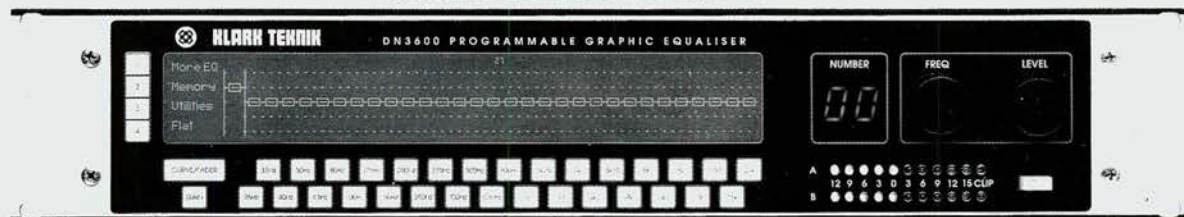
*Drum Media* continues to head up the national street press with issues running at up to 80 pages with up to 70 per cent advertising content. Competitor *On The Street*, despite its "Australia's biggest weekly music magazine" banner, is running at around 60 pages with a similar advertising percentage.

*Beat* and *Inpress* in Melbourne are steady at 60 and 52 pages respectively with advertising averaging at about 65 per cent; in Adelaide *Rip It Up* has increased slightly in advertising with 44 to 52 page issues on about 68 per cent. *X-Press* in Perth and the comparatively slender *Time Off* in Brisbane are holding their own with average issues at 56-60 and 32 pages respectively, on about 60 per cent.

The new A4 sized *Juke* published a healthy 64 page second edition last month, an increase of 16 pages on its debut. Advertising was down slightly at about 24 per cent.

## DN3600

PROGRAMMABLE GRAPHIC EQUALISER



**KLARK TEKNIK**  
a MARK IV company  
The first name with sound system designers

A.R. Audio Engineering  
NSW (02) 299 3666  
The PA People  
NSW (02) 642 5344

Audio Oz  
VIC (03) 696 5690  
Troy Balance Corp.  
VIC (03) 699 3844

Osmond Electronics  
SA (08) 410 1111  
The PA People  
QLD (07) 857 6855

# AUX 2

## GOSSIP for THE SOUND, LIGHTING & STUDIO BIZ

Vari\*Lite has deflected a \$100m+ damages claim by a former executive, Jack Calmes, who went on to form Syncrolite - and build his own Moving Lights. Now a bankrupt, The Jack is to be 'vigorously pursued' for 'patent infringements', according to Vari\*Lite. Phew!

**AUX recalls a year ago dining with High End boss Richard Belliveau, who expressed the view fellow Texan firm and arch competitor Vari\*Lite had the legal clout (and a patent re LX serial data transmission) to pursue firms using DMX! Dangerous times in Dallas.**

Harman International, owners of JBL, Soundcraft, Allen & Heath and Dod, have taken over AKG - as first predicted in Connections. This adds dbx, Orban, BSS, Turbosound & Quedstedt to the Harman stable, along with a 30% AMEC shareholding. Harman tried to buy Shure for years, now they have a microphone brand. Watch for JBL/Turbo product!

Retail action hots up with new pro. showrooms opened recently by Freedman, AVD, and Anything Audio in Sydney, CC's Stage & Studio and CLS in Melbourne, MCP in Tamworth and Wild Gravity in Townsville.

**In Sydney Rydalmere is set to become Sound-&-Lighting-Burg with the imminent arrival of two lighting firms, who will join Freedman, Bose, DB, Lot Of Watts and Hullabaloo Studios in the central western suburb.**

Fairlight is expanding production after selling a 50% share in Quantam and 100% of Trace Technology to LSE Technology. A report in Encore states parent firm Amber Technology had a shortage of working capital, but had received a "very substantial consideration" for its former interests, unquote.

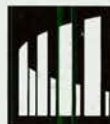
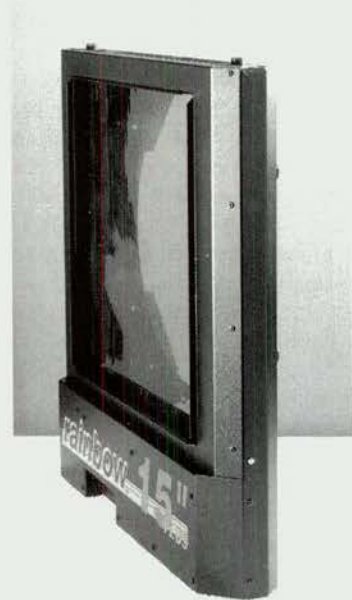
**Encore, the film & video production magazine, has been bought by Reid, who publish Broadcast Engineering News. New monopoly? Shame Michael Jackson blew out, word has it the crew change regularly, morale is at rock bottom- and we looked forward to that story!**

**Retro alert in Tamworth where last issue we failed to use the new, correct name of Tamworth Retravision as the contractors at the new Port Macquarie RSL, we referred to them as Sound Components, their old name.**

## Rainbows +

Selecon have released a new 15" colour scroller from Rainbow, incorporating the PLUSCARD, a digital decoder offering vari fan speed and 12 bit resolution - along with remote speed control via a separate DMX channel. This latest addition offers auto motor shut off, is trimmable from 2 to 16 colours, and fits most 2kw, 5kw and HMI lanterns. (pictured right).

Then there is the 'Alfresco' (Alf for short) all weather 8" scroller. Alf has all the features of the 2/16 scroller, which incidentally is the model just bought by Phil Stafford at Entertainment Lighting Services in Qld. While Phil has 16 x 2/16 models for indoor work, the 'Alf' is the new device for those contemplating architectural lighting challenges. Alf will handle acid rain too, says Selecon's Simon Garrett, and has tempered glass covers front and rear. The controls are accessed via a slide-up Makralan window, and a 1 metre cable means you can daisy chain several together. Details from Selecon outlets or call 64-9-360-1718.



The  
P.A.  
People

our expanded Sydney showroom is

now open till  
4pm Saturday

Monday to Friday 8:30am till 5:00pm Ph 642 5344

# MC AUSTRALIA

## MULTI-CONTACT AUSTRALIA

Specialist cable and connector suppliers to the sound and lighting industry since 1975

### Distributors for :-

#### Multi-Contact

Insulated circular single pole locking connectors to 1000 amps.

#### Contact

Rectangular multipole lighting connectors- screw or crimp.

#### CEEP

Circular Connectors, (Socopex compatible)

#### Kroschu

Highly flexible multicore lighting cables 0.5mm<sup>2</sup> through to 2.5mm<sup>2</sup>

#### Kroschu and Lapp

Highly flexible silicon rubber cables

#### Lapp

Tough, abrasion proof, polyurethane sheathed multicore cables.

Carol & Multi-Contact  
Foil or braid screened audio, data, and control cables.

#### Carol

Rubber sheathed microphone cables

#### N.E.K.

Video cables and triaxial camera cables.

## MULTI-CONTACT AUSTRALIA Pty Ltd

SYDNEY PH (02) 438-3600  
FAX (02) 438-4737  
MELBOURNE PH (03) 383-3733  
FAX (03) 383 4526  
PERTH PH (09) 249-3003  
FAX (09) 249-4912  
BRISBANE PH (07) 856-4200  
FAX (07) 856-4681

Write in Reader Service number: 127

## Phil Tripp Writes....



◆ **The media interest** in the music industry is mounting though not all favourably. Take for example the Real Life crew that just left our offices this afternoon (October 19). They'd read this crap in *The Australian* about rampant sexism and racism in the music industry, a publicity ploy that the PRs for Lesley Sly's "Power and The Passion" book used to get headlines. Now I believe that you never let the truth get in the way of a good story, but this industry has changed immensely from the 'old boys network' days of alcoholic MDs and record company executive toadies.

It's refreshing to note that there are dozens of women in high places in the mainstream industry—the head of ABC Records, Australian A&R manager for Sony, Professional Manager for Warner Chappell, several major and emerging artist managers, Agency for the Performing Arts GM, female music solicitors, Rolling Stone's editor, Drum Media's publishers, tour managers, the facility manager of the Sydney Entertainment Centre...the list goes on.

I think that the feminist alarmists and media grabbing publicists of this industry shouldn't denigrate their gender by perpetuating the myth or past history of women being under the thumbs of the blokes. It's a changing world and from both executive and production sectors. Women who follow this line of self-fulfilling prophecy are doomed to be the PAs and PRs of tomorrow rather than the industry leaders. *(I agree 100%. -Editor.)*

◆ **Another PR fantasy** that was puffed a few weeks ago surrounded the Applehouse press conference launching their large range of 'unauthorised CDs' that they gleefully took full page ads for mail orders. In their press release opening paragraph they used the ploy of "CD prices will fall because we are launching a range of live concert recordings" so the majors will have to follow suit. The four networks took this line blindly and touted it in the 6 o'clock news as an opener, another example of the media beat-ups surrounding our industry.

What Applehouse failed to note was that the performers will not be paid though there is a mandatory pittance royalty for the songwriters that they claim they'll pay through AMCOS. And they side-stepped the question of their moral obligation to get the permission of the artists (not the record companies or publishers) to have this flood of live recordings hit the market. Needless to say the sound engineers and other working crew of the concerts won't be seeing any income either from this loophole of record retailing.

But the industry brought on this problem in one sense when they did not utilise the small CD manufacturer Australian Compact Disc, which is the Adelaide company that is pressing the CDs for Applehouse. Warner and EMI have their own plant, Sony has its own and Disctronics tends to take up

the rest of the majors such as Polygram. But instead of using the local capacity, some majors and large indies have been pressing offshore in Asia, leaving ACD with no option other than doing bootleg recordings. It's ironic that the record companies that had the opportunity to support a local industry and who rail against the Asian 'pirates' are now suffering piracy from their own decisions not to keep the homegrown industry nourished.

◆ **Another story along this line** is the new Yothu Yindi album which I understand from informed sources has been rejected by the US company, Hollywood Records, but is still being released here—a rumour Mushroom hotly denies. It seems that Hollywood insisted on an American producer, went through more than one with the final result being unacceptable to them. It begs the question, "So why didn't they use homegrown talent who perhaps understood the band, its culture and sound?", rather than trying to 'globalise' their music through trendy overseas producers. I think this may be an urban myth since YY have release in France, Germany, Australia and South Africa on November 8 and Japan a week later, but why let the truth get in the way of a good story?

So what's wrong with Australian producers and engineers? Have some record companies actually imported overseas producers on visitor's visas and then had them produce local artists without the Federal Government knowing? Are we bastardising our artists by forcing them to go through the overseas production loop to make their sound more American? If we can mate INXS with Ray Charles, why not have Girlfriend produced by Prince? Or even better, reunite Kylie and Jason to front Niggers With Attitude!

◆ **Other great news from the front...**Export Music Australia has three major artists performing in nine concerts in Japan in November and has landed a number of retail and radio promotions to boost Australian music in that country. EMA is also handling the MIDEM trade fair stand again and booking in a record number of Aussie execs to make the trek. They're also using the groundbreaking Benedisc 'Poster-Pak' CD package to present an Australian music CD to media and music contacts in Japan and overseas.

Looks like EMA will also be expanding its reach for Australian stands and showcases to include South by Southwest in Austin next March as well as other major music trade fairs. Upcoming in June in Singapore is the International Music Market which promises to be a big door into Asia in its second year.

In addition, EMA has made representations to the Export Focus Group of the Federal Government on behalf of studios, live production entities and other audio/lighting/video professionals.

## ACCOM

Southern Cross Hotel  
131 Exhibition Street  
Melbourne Vic 3000  
Phone (03) 653 0221  
Fax (03) 650 2119  
Industry rate: \$100 per night

Located in the centre of the Melbourne, the hotel features 426 rooms including 64 suites, & 13 function rooms with the largest seating 1600. Facilities include four bars, two restaurants, heated swimming pool, tennis courts, an indoor golf range, gym, basketball court, sauna and spa. The hotel provides 24-hour room service and reception.

The Orchard Perth Hotel  
707 Wellington Street  
Perth WA 6000  
Phone (09) 327 7000  
Fax (09) 327 7017  
Rate: From \$180 per night

Extra large bedrooms, bathrooms and beds and a rooftop swimming pool and sauna are the winning features at the Orchard Perth Hotel. Four minutes walk from Perth city centre, the hotel sits adjacent to the Orchard Complex with its Japanese, Chinese, Italian and seafood restaurants, fitness centre, nightclub and pub.

The Regent, Sydney  
199 George Street  
Sydney NSW 2000  
Phone: (02) 238 0000  
fax (02) 251 2851  
Rate: From \$210; 15 per cent discount entertainment industry.

The Regent now includes a health club next to the largest outdoor hotel pool in the city, with new carpets and stunning art work throughout.

The Regent has 596 luxury rooms and suites with staff usually outnumbering guests by almost two to one. Each room has a fax outlet, three dual line phones and a VCR for business guests; the hotel houses a fully equipped business centre, one of Sydney's finest ballrooms and five restaurants.

# SPATIALIZER

360 Real time Virtual Imaging system for multi-track audio applications

Sydney, October 1993— *Spatializer*, is a real-time processor that allows the placement and movement of individual sounds in three-dimensional space. Utilizing standard stereo playback, *Spatializer* may be used in every phase of audio production with the effect maintained throughout all stages of recording, re-recording and post production. The finished product is mono-compatible, surround sound-compatible, requires no decoding and presents no multi-path problems or additional power requirements in broadcast or playback applications.

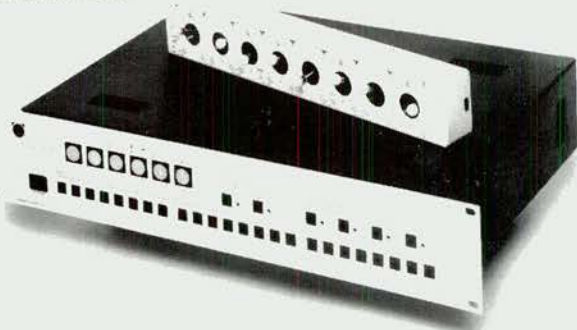
*Spatializer* consists of a rack-mounted processor unit and a portable 8 channel console unit with joystick controllers and control functions.

*Spatializer* was invented by audio industry veteran Steve Desper, designer of numerous recording studios and post-production facilities, and engineer for artists ranging from The Beach Boys to Frank Zappa. The circuit design of *Spatializer* was conceived by the Jensen-Whitlock engineering team. The critical signal processing section was one of the last circuit designs of the late Deane Jensen. Further refinements were implemented by Bill Whitlock, now president of Jensen Trans-

formers Inc, California, USA.

*Spatializer* has been successfully proven in over two years of television broadcast by Warner Bros. and is currently being used for the music soundtracks of three new animated series, including "Batman".

*Spatializer* is exclusively available through: Audio Communication Technology, Tel/Fax (02) 879 6404



## ADAT: The whole story.

By Bruce Macken & Dave Waite. Coming in the next issue of *Connections*, on sale December 15th

### PHIL TRIPP (Continued)

◆ **Seems like the Federal Government** has responded to the call to scrutinise, regulate and approve audio engineering courses. Should be some interesting action in a few months. (*Another Tripp bandwagon.* -Ed)

◆ **On the songwriters' front**, look to 12th annual APRA Awards on November 22 which Peter Rix is again producing. For the 500 APRA members and their publishers, it will be a great night to pay tribute to Australian songwriters.

APRA has launched an interesting initiative to major corporations to also pay tribute to the value of songs. Following the Commonwealth Bank's agreement to pay a fee for use of music in training videos and in house use of music, other major corporations are following suit since a legal action established the precedent for payment.

APRA has also been involved in getting aerobics classes to pay for the use of music, is pushing for a fee for music on hold with phone users, a greater fee structure from television broadcasters and even going after the narrowcasting side of cable TV and ca-

ble or satellite in house music stations such as those used in more and more retail chains.

It is heartening to see a music industry organisation so thoroughly protecting the rights of its members and spreading the income benevolently to them. It would be great if this could be followed by PPCA which is trying hard to implement a payment system to musicians/recording artists from the public performance of their records. Follow that with an introduction of a blank tape levy and a royalty from record rentals and the musicians would have a lot better lot. It seems also that the Musicians' Union is starting to become more reasonably active in dealing with member issues rather than infighting and politics.

◆ **But what about the road crew** and professional production people in this industry? When are they going to have benevolent organisations to deal with their issues or even set up a lobbying group to push the barrow for a better industry, not just a better payment system to artists and songwriters. Any ideas?



## Introducing the LA Audio 4X4

Four channel dynamics Processor.

- High Speed Noise Gate
- Freq Conscious Noise Gate
- Fast Compressor/Limiter
- De-Esser
- Any combination of the above

Only the best engineers in the world could fit 2 Noise Gates, 2 Compressor/Limiters and 2 Filters plus internal power supply in 1U of rack space. And LA Audio have done it (during Nov, Dec only) for just \$999.00



Southbank Trading

PO Box 6068  
St Kilda Road VIC 3004  
TEL.(03) 699 7809  
FAX.(03) 696 5691

Write in Reader Service number: 121

# RADIANT

AUDIO ENGINEERING, INC.

NEW RELEASE FROM THE U.S.A.

FINALLY!



A LOWER PRICED, HIGH QUALITY REPLACEMENT RANGE OF DIAPHRAMS & COMPRESSION DRIVERS

DIAPHRAMS \$150 INC.

REPLACEMENTS FOR: JBL 2440, 2441, 2445, 2450, 375, 375H & 376

Distributed By:

AUDIO & RECORDING AUSTRALIA PTY. LTD.



PHONE : (02) 316-9935

FAX: (02) 666-3752

36-38 Daphne St., Botany, NSW 2019.

Write in Reader Service number: 128



Photo by Peter Elles

## LASERS SIZZLE FOR SLEAZE

The annual fund raiser for the Mardi Gras, the Sleazeball, was again held this October at Sydney's Royal Showgrounds. Two lighting designers were involved with the massive dance party which catered for 16,000 people - Geoffrey Rose and Alan Parkinson.

The Hordern Pavilion, designed by Geoffrey Rose, had a 'Silver' theme and so the room was decked in silver paper. The lighting consisted of 16 Intellabeams, run off a Ceico Navigator by Barnaby Fitzharding and Alastair Ferguson, and three laser systems. There was one 20watt laser system in the centre of the roof truss, originally designed for Jesus Christ Superstar, which was a super wide scan, fibreoptic fed laser scanning system. It also fed two more fibreoptic feeds to the wrists of Tracy Bourke for her laser dance performance. The result was expanding and oscillating laser cones appearing to come from her hands as she danced to the record 'Pacific Symphony'. At 4am there was another stage show where the Colourshot laser was directed onto five dancing girls manipulating fluorescent fabric.

At one end of the room there was the Colourshot Aquarius laser system and at the other an Argon Aquarius laser system. Both of these were controlled simultaneously by Geoffrey from one keyboard via MIDI connection. Fundamental to the design were 4 32 x 8ft mirrors suspended from each corner of the gantry to reflect the lasers and Intellabeams. Also for reflection, there was a central chandelier for the 20watt laser to beam down onto and the other two lasers aimed at it from the side. Added to this were 7 mirror-balls and 2 vertical motors.

"My biggest problem was getting all the sophisticated technology up and running in time," said Geoffrey. "We were loading in as the RHI was being finished. Also the three dimensional problems were tricky, making sure the chandelier wasn't blocking the Argon laser shooting across the room....things like that. Fortunately I had great help from Ian McMillan from the Decor team, Iain Reed from 3200 Lighting who was the technical coordinator

and Richard Newton on the 20watt system. Also Katrina Marton, the production manager, gave me great support in bringing my ideas to fruition." Phil Grives also gets a mention for help given.

Jands did all the sound and rigging, Premier supplied the lighting, TCP the Aquarius lasers and Richard Newton the 20watt system laser.

The theme for the Royal Hall of Industries, designed by Alan Parkinson, was 'Gold' and again all the pillars, stage, control area were swathed in reflective gold paper. The scenic elements were all four letter words like fu\*\*, ars\* and ....well you get the drift. In fact these words were in place well before the night and, after a complaint by a prospective client being shown around the RHI, they had to be covered until 8.30pm on the night. Placed around the room were VL5's which were chosen to light the scenic elements and the result was chase patterns 'bouncing' around the room. Lamps used on the dance floor were 32 VL2b's, 132 Pars, 48 ACLs and 24 single Par 64's with colour scrollers to light the truss itself. To enhance the gold theme the scrollers contained only orange and gold gels. Added to this were 8 Dataflash (supplied by Clearlight, Melbourne) and 4 Molemags. The stage had an extra 12 VL5's, 8 VL2b's, 10 2Ks, 5 5Ks as well as ACLs and Pars. 36 motor points in the RHI for both sound, lighting and scenic elements. Above the centre of the dance floor were 9 moving points for four truss runs of 40ft with a universal joint in the middle so they could go up, down, invert or level. *(A new word from Cartiona Forcer. -Editor)* There was even a rig position resembling the roof top of a house. Another look, named 'The Enterprise', was achieved by moving the trusses in to an A-frame with the cross bar slightly bent in the middle. Equipment was supplied by Jands.

In the Dome there was another system of Vari\*lites combining VL5's and VL2's. The rig was 3 left pieces of D-truss strapped together and with 24 Pars, 16 ACL's, beacon scanners, couple of scrollers and the Vari\*lites on the rim. The rig was apparently nicknamed 'Robocock'

● By Cartiona Forcer, Sleaze Queen.

## Australasian Music Industry Directory UPDATE

Here are some of the most recent changes to the Australasian Music Industry Directory that will be appearing in our January edition, so you can update your July '93 copy now.

- The PR Company has moved to: 17A Skyring Terrace Newstead QLD 4006

- Melke PR have moved to 158 Raglan Street Mosman NSW 2088. The phone number has changed to: 968 4152 and the fax to: 968 4143

- Robyn Murphy Photography has new phone numbers: 697 2001 and 569 7759

- Federal Express have changed their phone number to 317 6777 and fax to 317 6792. Kimble George having replaced Ian Lumsden in Sales.

- Australian Music Haul have changed their phone number to 352 9999 and fax to 352 9966 and are now located on the ground floor, not the third

- Major Music Distribution in Victoria have closed up shop. former Managing Director Max Robenstone now having joined Larrikin.

- Warner Music state offices have moved back to Crows Nest from Frenchs Forest and are now based, once again, at: 39-47 Albany Street, Crows Nest NSW 2065. Phone: (02) 950 1500. Fax: (02) 950 1444.

- Gina Karpman has left her position as Manager of Under New Management, the position now being held by Michael Tame.

- EMI have signed New Zealand band, The Mutton Birds.

- Anna Young has left Immedia PR to manage Relic of Mary Lou, who have just been signed to Regular Records.

- Andrew McManus Management are no longer managing Living Daylights.

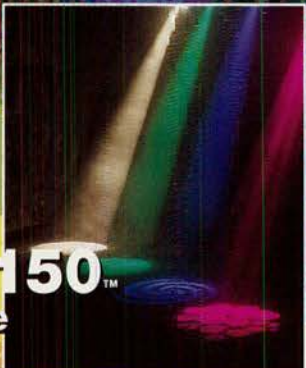


**\$1099**

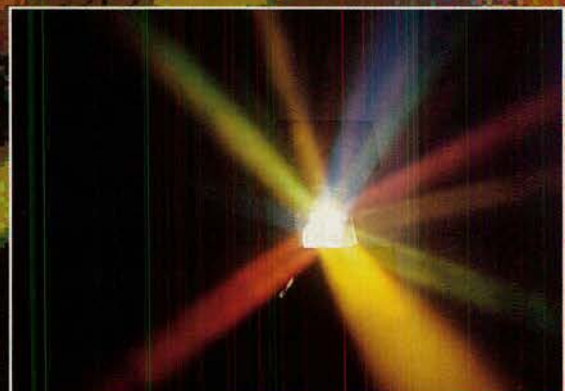
Inc. Tax RRP

**FUTURESCAN 150™**

Controller Available



**HYPERMOON 100™**



**WILDSTAR COLOUR™**



**SCATTER SPOTS™**

# ABSTRACT™

DESIGN TO LIGHT

**THE INNOVATORS  
NOT THE IMITATORS**

Don't be fooled by cheap imitations, ask for **ABSTRACT™** by name. See the difference dichroic colours make, colours that never fade.

See your nearest **ABSTRACT™** stockist for the full range of **ABSTRACT™** products.

**ACT**

Top Stage Productions  
Phone: (06) 280 5710 Fax: (06) 280 7545

**NSW**

Black Express Light & Sound  
Phone: (02) 559 4363 Fax: (02) 558 4923  
Blitz Sound & Lighting  
Phone: (02) 361 0077 Fax: (02) 361 0076  
Lightmoves Technology Pty Ltd  
Phone: (02) 560 0000 Fax: (02) 568 2333

**NT**

Mighty Music  
Phone: (089) 854 224 Fax: (089) 854 224

**QLD**

Creative Lighting & Sound Systems  
Phone: (07) 252 5686 Fax: (07) 252 4778  
Entertainment Lighting Supplies  
Phone: (075) 93 5105 Fax: (075) 93 5161  
Mick James Electronics  
Phone: (075) 72 0133 Fax: (075) 72 4478

**SA**

Osmond Electronics  
Phone: (08) 410 1111 Fax: (08) 410 3322

**VIC**

Australian Disco Services  
Phone: (03) 484 1178 Fax: (03) 484 2624  
CPN 2 Lighting & Sound  
Phone: (03) 380 8004 Fax: (03) 380 1667  
Lightmoves Entertainment Services Pty Ltd  
Phone: (03) 819 4566 Fax: (03) 819 5463

**WA**

Audio Source  
Phone: (09) 354 3185 Fax: (09) 354 2354  
Kosmic Sound & Lighting  
Phone: (09) 242 3844 Fax: (09) 444 1144

**ABSTRACT DISTRIBUTION  
(075) 290-688**

AUSTRALIA'S  
No.1 SUPPLIER

## TALKING SPEAKER BOXES ?

At Penn Hardware we're proud of the company we keep....

Our OEM customer list boasts names such as;

Peavey, Amek, Fender, JBL, Trace Elliot, ARX Jands, Martin Audio, Australian Monitor, Fane Acoustics, S.L.M, Carlsboro, Randall, Marshall, Community, EAW, Warwick, Laney and Tannoy.

Reads a bit like a who's who of amplifier and speaker manufacturers doesn't it? Join the market leaders and specify the world's No.1 range of speaker cabinet hardware.

Call today for a copy of our new catalogue, featuring dozens of new releases including roadcase, speaker and rackmount hardware.

## PENN FABRICATION

43-45 Johnston St.  
Port Melbourne Vic 3207  
Ph: (03) 646-7222  
Fax: (03) 646-8222

## HIRE BIZBUZ

### AROUND THE NATION

**Music Capital Productions**, Tamworth NSW, have expanded their horizons with the addition of retail and driveway hire to their already established production service. The new shop and offices will open for business on Monday, 8th November '93.

MCP are able to fill most PA and Lighting requirements. Up to 12,000 watts and a 32-8-2 Venue desk for FOH, Spirit 24-8 on FB and a 48ch ESP/72 cans for your lighting requirements. Most recently MCP has been on the road with Margaret Urlich (with Gorgeous George Gorga on FOH) through northern NSW and Queensland; Steve Law mixed FOH for Lee Kernaghan on north western NSW run; MCP's Alan Alderson mixed Keith Urban's Tamworth concert with Brad Franey operating for V8 Deluxe on a run through smaller venues in NSW's north west.

"General" Grant D'Elboux handled MCP's lighting for Margaret Urlich, Lee Kernaghan and Keith Urban. MCP have always supplied pro' crews, touring production and transport. They now offer driveway hire, retail sales and installation. Give Bill O'Neil a call on (067)62-2452 or Fax (067)62-2453.

**Australian Concert Productions Pty Ltd**, Fortitude Valley Queensland, have had a busy season so far in both large and small productions. Just a taste: Blazing Salads tour through Queensland, Lee Kernaghan at Movie World, Aratula Bike Rally, Purge Creek, the Australian Uni Games and two of the Great Aussie Bar-B-Q's. As well as the Brisbane Warana, Colonial Street, Livid and 60's Rock and Roll Festivals. I suppose, seeing as we are a national mag, I also have to mention the Bronco's Annual Ball, but as a New South Welsh woman I'd rather not.

Craig Upton has moved into the position of ACP's hire co-ordinator and the production facilities have also been expanded with the recent purchases of a JBL Array System, SAFE flying hardware, as well as Yamaha 2040 controllers and a MC3210M monitor console. You can Phone ACP on (07)854-1512

**Active Lighting Pty Ltd**, Hawthorn Victoria, have had some major corporate work in the last month with the West Coast Eagles Grand Final Breakfast (can't you just imagine the quantities of food). Pepsi Cola Launch and the Melbourne International Festival. The Breakfast was a three hour variety concert held at the Melbourne Entertainment Centre. The show went live to air for TVW7 in WA. Crewed by Grant Jennings, Alan Eno, Adam White, David Platt, David Wright and Andrew Topp, the broadcast was a success.

Making a show look right for both the live and TV audience is no easy task but with 192x Par64s and 6x Goldenscans controlled through a Theatrelight 48/96 desk and Dyalite dimmers, the show happened just fine. The Pepsi launch at the World Congress Centre called for Active to supply something not normally in their hire dept. 2 x tonne of Sand. Yep! Pepsi wanted a Beach Party.

The Playhouse Theatre used 10x Goldenscan II's for 'Chambermaid Opera and the State Theatre in

### A.M.I.D. UPDATE

(Continued)

- Rod Willis Management are no longer managing Icehouse.
- Vivien Fantin has left Festival Records to work with Oz 'N' Enz publicity.
- Chris Gilbey Pty Ltd have recently signed a deal to represent Tommy Faragher's and Elvis Presley's catalogue for Australia, New Zealand and all of Asia. Chris Gilbey has announced that the publishing arm of his company will be opening an office in Singapore within the next three months.
- Virgin Retail Australia P/L have moved their head office from Pyrmont to Melbourne. They are now located at: Level 1, 152-158 Bourke Street, Melbourne VIC 3000. Phone: (03) 639 0099, Fax: (03) 639 3709.
- HMV Australia have moved their office from Level 3 to Level 2 at 357 Military Road, Mosman. Phone and fax numbers remain the same. At the HMV stores, there have been some changes in personnel at HMV, those being that Chris Wooden, formerly Store Manager of Chatswood and Parramatta stores has been promoted to position of New Store Manager. Mark Murphy has been promoted to position of Store Manager at HMV Chatswood, to be assisted by Heidi Johnson. New Store Manager for the Parramatta store is Jim Jong, the Assistant Manager being Letitia Jones.
- Bruce Powell, who was heading Trafalgar Publishing, is now heading Festival Publishing, a seat that's been vacant since Peter Hebbes moved to MCA.
- Darren Bromell has left his position as National Sales & Marketing Manager at Warner Chappell Music.
- Eclips Music Video in Enmore now just have one phone number, that being: (02) 516 5721
- The Wrest Point Entertainment Centre in Tasmania, has a new fax number: (002) 253 744

## Noise Laws

Acoustic Consultant Steve Cooper of James Madden Cooper Atkins, was recently caught out by militant local residents near Sydney Showground- for per-



petuating some audio trickery to mask noise emissions from large Dance Parties there. It's been an open secret in the Production Community that Gay Mardi Gras events have occurred with some 'noise masking' techniques in place, courtesy of Cooper. Basically this entailed some speakers near the venue pointing towards residential areas, pumping out white noise. The result is the ambient noise level can be raised, masking the music. The ambient speakers, and overall noise, were monitored throughout the night by Steve Cooper, with levels adjusted

according to wind and temperature conditions.

Noise laws associated with Licensed premises in NSW are extremely strict, and Cooper says some venues are subject to court orders regarding volume. In particular is a case where a noise monitor was bypassed by a band, leading to the possibility that the act were performing in contempt of a court order. It seems the presence of a noise monitor which switches off the mains when a preset level has been reached is more often than not associated with licensing law hassles. The message is: comply.

Outside licensed premises laws relating to noise are administered by the Environmental Protection Authority, who determine strict limits. Local Councils and Police both pursue noise complaints.

Interstate laws vary, but generally noise laws could be open to abuse - for example, the roar of a crowd at a football match will breach the law. Application of strict noise control laws is harming the music industry greatly, and protecting no-one. -JG.

**BUZ (cont'd)** -corporated 6 x Goldenscan 'IIs into the design for the 'Follies'. Oh- Adam White is now Production Manager at Active so if you need to, phone him on (03)819-6912 or fax on (03)819-6008.

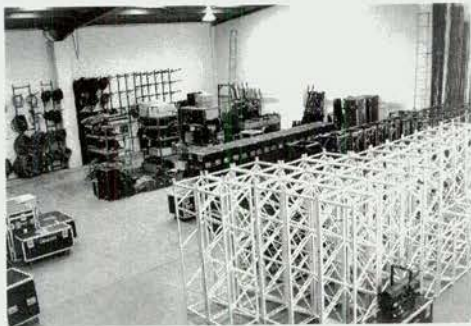
**Joe's PA Hire & Stage Production**, Lewisham NSW, (owners Joe and Jane Scaturro), have had a great season so far, including such acts as: Nathan Cavaleri, the Bruno Lucia Club Tour, Stan Zemanic, Ratcat, Gyan, Swannee, Beats Workin', Choirboys, Devils in Heaven, Gangajang, Zillion and the Zig Zag Men,

Living Daylights and Matt Finish. Joe's PA also used a Triple JBL Stereo system at Wonderland for Jeremy Jordan (Beverly Hills 90210).

Joe and Jane would like to say thanks to their crew for their (blood, sweat and tears) support and efficiency. A Rig Crew- Joe mixes FOH with **David Lind** on FB and **Bruce Dickman** as Lighting Tech.

B Rig Crew- **Gavin Dutfield** as FOH engineer with **Mark Wells** as Lighting technician. C Rig has **Robert Ekins** on FOH. Give Joe or Jane a call on (02)564-2521 or Fax (02)560-2491. ♦**Caroline G.**

*Australia's largest lighting company, CLS moved to 282 Normanby Rd Port Melbourne recently. Here it is:*



## A.M.I.D. UPDATE

(Continued)

- Peak Promotions have taken over as Venue Talent Booker for Birkenhead Point Tavern.

- The new Production office phone number for Nambour Civic Centre is: 074 309 300

- The new phone for Darwin Performing Arts Centre is: 089 811 222

- Napoleons club in Sydney has new fax number: 299 4221

- The Broken Hill Entertainment Centre's new fax number is: (080) 871 411

- Lisa Brickland has taken over as Activities Officer at Curtin University of Technology

- Neptune Entertainment Agency has moved to Mezzanine Level, 44 Nicholson Street South Yarra 3141, the phone and fax numbers remaining the same.

- Lambeth Bennett Organisation, a booking agency, have moved to: 52 Warnervale Road Warnervale NSW 2259 and their new phone no. is: 043 93 1100 and their new fax no. is: 043 93 1422

- Straight Arrow Promotions have changed their fax no. to: 380 1333

- Roseby & Rosner Accountants have moved to 199 Toorak Road, South Yarra VIC 3141

- Musica Viva have a change of postal address, that being: PO Box 1687, Strawberry Hills NSW 2012

(continues)

## STAGING RENTALS

Extensive Range of

Rental Drapes

Risers & Flats, Scenic Art

Delivery & Installation

(02) 519-6300

Fax (02) 519-6489

## EASTERN SUBURBS SOUND HIRE CO.

- Professional sound equipment hire
- 8 and 16 channel system available
- Delivered and set-up

CALL TONY (02) 664 2380

## BURKINSHAW CONSULTANTS

"For all your staging needs, Hire, Sales and Production"

12 Budgerie Place, Hoppers Crossing, 3030 Victoria, Australia

Tel: (03) 748 6664 Fax: (03) 748 8193

Phone Phil: 018 386 481

## HirePoint Software

Plot your advance bookings in seconds!

```

15/ /94 16/1/94 17/1/94 18/
5 2 5 9 12 5 9 12 5 9 1
24Chan-1 >-PITW01-<
24Chan-2 >-ADV03-<
24Chan-3 >-SMITH01-<
12*W-1 >ADV03-<
    
```

### Other features

- Hire contracts
- Juggle systems
- Quotes
- Delivery schedules
- Statistics
- Expected Shortages
- Sales analysis
- re-orders
- Maint'
- Debtors
- Options :- Multi-user, General ledger

Ph : (02) 876 2745 Fax (02) 869 1495



Cat Pic

## Tina Turns it On!

*Telescans miss out: breakdowns let French moving light system down*

When it comes to staging and lighting, Tina Turner knows what she wants favouring a Blade Runner influenced style. Originally she was shown three set designs all of which were very clean with no backline showing. She wanted it rougher and suggested a copper or brown stage set.

"Of course brown is not a good colour to light," said her lighting designer John Malamaziar. "In fact it's probably the worse colour you could have. So in the beginning we had this brown and copper set to deal with. We also has Telescans, Telespots and less Par cans. Unfortunately we had some tech-

nical problems with the Telescans which just weren't holding up for us. The Telespots, which are a brand new 4K and 6K moving HMI light, are beautiful lights and the colours are gorgeous but we just couldn't get them to work."

Rehearsals for the 'What's Love? Tour 93' consisted of three weeks in Los Angeles and, two weeks into them, the crew found they were spending more time fixing equipment than programming. At the first show there were problems with the Telescans and Telespots and at that point John decided they had to go. *continued>*

## Sound lags at Tina Turner

In my view the support act - Daryl Braithwaite - was mixed better than the star act. The show was on Wednesday 20th October at the Sydney Entertainment Centre, and it is a difficult venue in which to pull sound. The S4 system provided by Jands is ideally suited there, Daryl's engineer mixed on a vintage Yamaha PM-200C, while Tina Turner's engineer David Natale had a brand new PM-4000. I'm stepping onto difficult turf, but I'd say Natale had tour fatigue - he was mixing things that were not there - and missing the basic point of sound engineering. Intelligibility.

I couldn't discern Ms. Turner's vocals most of the night. Yes the voice was in the mix, but no, the words were not apparent. Bass & synth levels

wandered in level, and in the volume was a touch too loud for this diverse audience.

David Natale was here with Prince, and I thought the Prince mix was fine. It seems Paisley Park didn't, as they flew a replacement out in the form of one David Morgan, who sat behind Natale during the Sydney Prince shows, taking notes. The expected changeover didn't happen, however, and Morgan ended up flying home.

The actual live sound mixing role for major international acts is not too hard these days, as major concert production firms provide highly skilled system engineers, who can EQ the system. Many older band engineers forget to walk around the venue and mix for the punters. **-Julius Grafton.**

## A.M.I.D. UPDATE

(Continued)

- Australia Council-Aboriginal & Torres Strait Islander Arts new phone: (02) 950 9111
- Australian Women's Contemporary Music Inc fax has changed to (02) 211 2281
- Backstage Australia has moved to 5922 Turberry Terrace, Sanctuary Cove QLD 4212
- BBC Touring have moved to: 2/34 Dover Road, Rose Bay NSW 2029
- Brett Oaten the solicitor has a new phone and fax number. Ph: (02) 550 4392 Fx: (02) 517 1038.
- Henry Davis York Solicitors have a change of phone number. Ph: (02) 364 6300.
- Phillips Fox have new phone numbers: Brisbane ph: (07) 246 4000; Canberra Ph: (06) 201 8787 Fx: (06) 201 8755.

(continued)

"Obie Lights flew in five guys to fix them as I really wanted to keep them," said John. "We started off with 16 Telescans and 8 Telespots. Before we left rehearsals we cut it down to a dozen Telescans and kept the 8 Telespots. After the first show, I decided they weren't worth spending the money on as I needed something that was going to work every day. I compromised by keeping 10 Telescans and one guy with them but I got rid of the Telespots. But then we had problems with those, we'd get 8 out of 10 to work the second night and then 7 out of 10 the next. It was stupid, I needed to get more conventional lighting in that I knew would work every day and I could focus in the sunlight out of doors."

As a result of this, more Vari\*lites were added plus 150 Par cans and 80 more colour changers. Equipment was repositioned so the overall rig did not look too different. Another problem encountered with the Telescans is that it meant there was another operator added to the show along with John, the Vari\*lite operator and the colour changer operator. Although John is not a control freak, if he doesn't have guys that are good operators his job is so much more difficult. The original

**“ Obie Lights flew in five guys to fix them as I really wanted to keep them, We started off with 16 Telescans and 8 Telespots. Before we left rehearsals we cut it down to a dozen Telescans and kept the 8 Telespots. After the first show, I decided they weren't worth spending the money on ”**

Vari\*lite operator had to leave due to personal problems and John bought in his long time friend Matt Druzvik. Matt was only too happy to leave a Julio Iglesias tour he had been on for a very long seven months to join Tina Turner. Apparently that went down like a lead brick. Matt and John have worked together on tours for nine years and communication is needed between them during a show.

"It was quite difficult coming into the show after it has started," admitted Matt. "Especially after Julio, I mean I can't sleep during this show. It eventually becomes your show as you start making changes. For the first three or four days, I had to learn the music and there are a lot of cues in the show."

"It goes back to timing," John added." To me, one of the

*(continued)*



• 1400 W • 37 Hz - 20 kHz ±5 dB • JBL Components • Passive Crossover • 4 Ω

Phone: (02) 516 3622, Fax: (02) 517 1045

**JANDS**

**SYSTEM 1400XL**

Jands Electronics Pty Ltd. 578 Princes Highway, St. Peters, NSW 2044

most important things in the show is having timing. It's particularly important with Tina, I mean it's like lighting Motley Crue. It's like lighting a Motley Crue show with Tina on stage."

"She is also a dancer and is moving the whole show," said Matt. "So it's like doing a rock show with a dancer."

"At the start of the tour, we had almost the same structure as it is now," John said. "To begin with Peter Morse (LD for Madonna, Michael Jackson, Michael Bolton) was involved as one of the designers but it just didn't work out. It wasn't anything he was doing or Tina was doing, sometimes you just can't paint the picture. They really wanted something different and he gave them everything they thought they wanted but it still didn't work out. He left quietly and I took over, the whole time we were doing it together anyway. We did the whole show again, top to bottom during the first two weeks of shows. That was probably the hardest thing I've ever had to do because once you're out it's hard enough getting it up every day to start with. Every day we'd get it up by 2pm, put a tape on and reprogram the show. That's something I don't want to do again."

John changed the structure a little and added the Pars and colour changers. Now there are 280 Par cans, 90 LSD Colourmag colour changers, a dozen Molemags and normally 12 spots - 4 in the rig and 8 front of house. Added to this is a smorgasbord of 76 Vari\*lites - VL2b's, VL2c's, VL4's and VL5's. Although John is not particularly a fan of pods, it was the obvious thing to use on this show and so he used 4 hexapods down stage right and down stage left.

"I think it's a real 'less is more but it looks big' show," explained John. "What we were lacking was the punch that was needed. It's basically a rock show and you have to know when to rock it and when to just make it pretty like in 'Private Dancer'."

Two of the most spectacular elements in the show - the staircase used for her entrance and the claw that takes her over the audience - were originally used on her last tour of Europe. Tina specifically wanted to use them again as no one in the US or Australia had seen them.

"It was a good idea to begin with," said John. "We had to change it around a little bit as we were playing different venues from Europe where they had played stadiums. To make sure we could always use the claw we had a subdeck built that sat at centre stage as we knew there was going to be a track 30ft long. We went to a few builders and told them we needed to accommodate a 30ft claw into 18 inches of stage set and most said it couldn't be done. Finally Magic Craft from LA built the claw for us. The subdeck comes in in the morning, we build the lighting system and then we build the tracks for the claw that lay across the centre of the stage. Once that is done we build the floor and put the stage set in place. There have been a lot of comments from the carpenters that have to work on it in the day about the people who designed it not understanding about touring. But Magic Craft are good at building gimmicks and they really had to engineer this from the ground up and it's worked every time. It's economic in truck space too. What they had on the last tour took one whole truck by itself."

Stage pieces at the back of the set were fashioned like wreckage and with the back light shining through them, they formed one giant gobo onto the set. Backline gear was kept clear so as not to interrupt the light beams. Built into the back of the set, obscured from the audience, is an elevator into which Tina goes at the start of the show. The elevator rises the same time the centre truss descends down to the stage. The truss tilts towards the audience to reveal a sweeping staircase on its roof. The top of the staircase meets the elevator which is supposed to grip the staircase. Once or twice there have been times when they had not docked and, at a height of 25ft, Tina has had to leap across and it's no wonder the crew describe her as a real trooper.

After John had won the battle with the lighting system he started on the set which was still brown and basically only looking good lit in white light. The set included two plane propellers, one of which would rotate occasionally through the show. The overall look was 'after the bomb meets Blade Runner' and John decided would be better with a chrome look. Not a new idea but definitely better to light. So when they had a couple of days off on the East Coast about two weeks into the tour, a day was spent spraying the whole set silver.

"We were going to New York to do 10 shows at Radio City and we really wanted it all together for that," said John. "We were looking to those gigs as our completion. After it had been sprayed silver, I went along the set with black paint to highlight elements. It makes it look a little bit more three dimensional."

With the lighting the emphasis is on back and side lighting. Often Tina is silhouetted which works well as she is so identifiable in this way. On either side of the set are 24ft high towers containing ACL's, Vari\*lites and audience lighting. The staircase is basically all Vari\*lites although there are some Dataflash and Molemags on it. On the last tour the staircase had some Vari\*lites hanging from it but not much lighting. Due to the variety of venues being played on this tour the air space is limited so the staircase was turned into a pod giving it two functions. We have a drop which we reveal during the show which is ruffled and in natural earth tone colours but it lights real well. We use it for 'Thunderdome' to bring her out of the picture because she's at the top of the stairs where she could get lost if there wasn't anything behind her. It looks real rough and adds a lot to the show."

Control for the show is a Celco Gold which John insisted on because of the colour changers although he like both Celco and Avo desks.

The tour began in June and John admits he is never completely happy with it, making changes even that day. After the two weeks of busting a gut to get the nucleus of the show completed, little changes are still being made.

"No show is ever complete, you're always making changes," said John. "But Tina is great to work with. She gets on with everyone, she likes to get involved and doesn't get too over the top. She's been through everything, I mean she's been doing this for years and years. She's 54 years old which is amazing and she blows my mind." ♦ **Catriona Forcer**

## A.M.I.D. UPDATE

(Continued)

- Tress Cocks & Maddox Melbourne office has moved to: Level 8, 155 Queen St. Melbourne VIC 3000 Ph: (03) 642 0011 Fax: (03) 642 0382.
- Australian Girlfriend Management have new phone and fax numbers. Ph: (02) 212 7600 Fax: (02) 211 0727.
- MMA Management International have had some changes in personnel, the Chief Executive Officer now being C.M. Murphy, while the Executive Director is now Lisa James.
- PGB Management have moved to: 10/19 Johnston St. Annandale NSW 2038. Ph: (02) 565 1573 Fax: (02) 565 1573.
- MAP Management have a new phone number, that being (03) 695 7863
- PBG Management have had a change of street & postal address: 10/19 Johnston Street, Annandale NSW 2038; PO Box 171, Annandale NSW 2038. Phone: (02) 565 1573 Fax: (02) 565 1573
- Duet Productions have moved to Suite 6A, 2nd Floor, 20 Young St. Neutral Bay NSW 2089
- Ceberano Management have moved to: 31 Greville St. Prahran. Ph: (03) 510 1077 Fax: (03) 510 1422
- Go Off Entertainment has moved to: 31 Davies Street, Port Melbourne 3207. Ph-(03) 646 8266 Fx- (03) 646 8277
- Bill Robertson has joined Castle Communications
- Chris Hanlon is now Managing Director of East West Records
- Melissa Chenery is now Australian Artist's Manager of Sony
- Lavender Music has moved to: 5/159 Arthurton Rd. Northcote VIC 3070 Ph: (03) 481 3741 Fx- (03) 481 3741
- Vicious Vinyl have changed their fax number to: 03 787 4889
- Former employee of EMI, Rob Walker, has been appointed General Manager of the newly established Roadshow Records, whose first release is to be a Seekers Xmas album.

♦♦♦♦

LIVE

## Bon Jovi easy to mix

Bon Jovi sound person Tony Blanc has an easy time of it, with 38 lines from the stage feeding two classic Clair Brothers Custom consoles. They have just four auxiliary sends, the solution to this dilemma is, according to Tony, to use four effects! With two consoles, the auxiliary sends can also feed different effects.

"This is a pretty basic 5 piece rock band with reverbs and some slap echo. There's not much going on as far as effects, it's all MIDI'ed together and it's tidy. Not like a show where you're trying to pitch shift vocals, put chorus in spots, or drop in echoes. It's straight ahead rock!"

"It's a fun band, but you don't muck up. These are professional artists, no feedback and watch the cues. The artist can perceive what's happening in the house. They're good pop songs!"

Whenever I meet up with a sound person I ask about equipment. Tony says he keeps up to date with technology by reading magazines "like yours", pointing to Connections. I ask about microphones: "I can't rave enough about the (Shure) SM 91, they're fantastic. I've got them in my kick drums, it's the boundary effect unit. The rise time is so quick, with most drums you just plop it in the bottom". AKG mic's are used for the vocal microphones.

On consoles, Tony's been using Yamaha PM3000 consoles for years, but he isn't too keen on the Midas XL-3. "I'm waiting for the XL-4, the XL-3 is a monitor board that has been modified to use as a house board. I don't like the (EX) Gamble, the dials are too small, and it's difficult to do anything precise. The crosstalk is horrendous. At the end of the day you're subject to what the Hire Company has. Soundcraft Europa's are nice to work on, but heavy! Jands had one of those in Singapore".

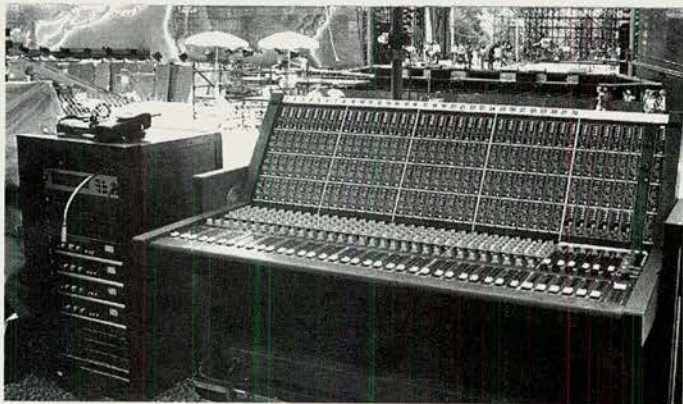
This is an interesting topic, the band have just completed a swing through Asia, picking up local speaker systems. They took consoles, monitors and effects. In Taipei it was a Turbo TMS-3 rig, in Hong Kong "we got rained out and didn't play. It was going to be a Meyer system, in Bangkok we used the old Tokyo Sound system - the old North-West audio stuff. It was excellent! In Manila we used Jands Concorde".

"In Singapore we used a Jands system, they've just taken a system up there to try to attack the far-East market, it has 60 (Clair Brothers) S4's. We had 20,000 there, Jimmy Barnes went on in torrential rain."

Tony has mixed for Midnight Oil, Steve Windwood, Mick Jagger, Bowie, Sting, and Wham amongst others. He has some firm views on the industry: "The world touring market is very depressed, it's about 60% what it was. It's hard to say who's being too greedy, the artists cut is too high because the profits from record sales aren't there any more so they need to tour. With ticket prices at \$30 - \$40, you spend \$100 if you take your girlfriend and buy a T-Shirt - before you park the car and have a meal. Not many kids have got \$100 and more for a night out".

"The Hire Companies will tell you the crew salaries are too high, 60% of their income goes to paying crew. The average crew salary in the USA is whatever you've got the gall to ask for! This is a profession, I've been in the business for 15 years but my income hasn't gone up in four years".

◆ Julius Grafton.



CLAIR CLASSIC CONSOLE

• High Output Power • Large Dynamic Range • Full Protection • Superior Audio Performance • Designed For Touring Use



SPLIT RAIL™ AMPLIFIER

JANDS

Jands Electronics Pty Ltd. 578 Princes Highway, St. Peters NSW 2044 Phone: (02) 516 3622, Fax: (02) 517 1045

Write in Reader Service number: 115

## The 'Human Strobe' returns

*How the Lighting Survivors conspired to show Martin & Clay Paky products to best effect - at a Music Show! Was this the biggest gig yet lit WITHOUT dimmers?*

"I've got an impossible job for you", he said, but for a guy they used to call 'The Human Strobe' it wasn't. Sam Zagami had three weeks to pull together the lighting of the AIMS '93 Theatre, along with a separate Clay Paky display theatre - something that at first thought shouldn't be too hard. Except almost all the equipment wasn't in the country yet!

Rod Salmon heads L.A.V.A., which stands for Lights Audio Video (Aust) Pty Ltd, and his major promotion this year extended to lighting the stage at the Australian International Music Show, solely with Martin lighting equipment, a brand he represents here. The Clay Paky theatre was an exhibit at the show, which catered to 80 people at a time, who sat through a choreographed light and sound show.

Rod has had some recent business dealings with The Human Strobe, so known due to his pioneering early work with rock band 'Outline' in the late 1970's. This was an era known as the hazy days of stage lighting, when Ray Hawkins invented the Ray Light and when things happened almost overnight. The Strobe was the first person to think of hanging a Space Beacon above his lead singers head, which sometimes meant bizarre and occasionally comic rigging methods were employed in dives like the Civic Hotel in Sydney.

Sam and his brother Steve Zagami were the road crew for this band, totting five tonnes of gear up stairs and down highways like many others at the time. This was when a time when a confluence of things like available technology led people to seek out rock bands as a new and exciting experience - before the CD player, FM Radio and Video Clip emerged, the end of a bland monochromatic century, when a rock gig suddenly offered gut wrenching sound that moved air, and lights became animated, while colour saturated the air. The novelty days, days that are, and have been for some time, well and truly over.

Back to the days leading up to AIMS, and virtually every major piece of gear for the show was bought new by LAVA. Rod Salmon gambled that he could then use the tradeshow to sell off the gear, virtually as soon as it came down out of the rig. Certainly the entire Martin complement was brought in, lock stock and barrel, for AIMS. To flog it all off, the Salmon was in typical deal mode. In fact, if you choose to buy the whole lot, he'd spring

you a trip around the world, flying NorthWest and Qantas, for two.

As it transpired, the gear was sold in licks as small as \$5,000 each, for which the buyer got a case of mixed spirits. "I gave away 9 cases", said Rod, "and I sold other deals too, like buy \$20,000 worth and you'd get either a trip to Singapore or an Olivetti PC". Last time we looked, Sydney Harbour Bridge and Tasmania hadn't been sold too, but perhaps they need to be chained down!

The Martin lightshow was the largest collection of Martin ever seen in one place south of the equator, and comprised 28 Roboscans (Pro 1220 and Pro 218 models), 36 Robocolours, 7 Robocolour MSD 200, 5 Robozap, 2 DJ sweepers and 2 Ministars. Keep in mind the changeable and programmable nature of these devices, and you have a lot of looks. All of this was run with no dimmer racks - a first for sure

The Human Strobe confesses he is not up to speed with modern lighting technology, in fact he shakes his head with a bemused look,

reaching for a cafe latte in a sidewalk cafe in little Italy - Sydney's Leichhardt. I've met up here to reminisce a little, and find out how someone very comfortable with lighting concepts a decade old, copes with today's equipment. "Well, no longer does a lighting engineer come in and

push buttons. He's a technical designer now", Sam suggests.

Rod Salmon's lighting problem was two-fold, having committed to light the stage at the show he had to come up with some kind of spectacular, so design, operation and logistics were all required. Enter Sam with his helper Michael Dudman (a solicitor between gigs!) and some current technicians from Perth, Brian Anslow and Anthony Johnson from Lightworks. They used Martin controllers linked with a PC to run the theatre. Local Sydney wiz kids James Evans and Mathew Cohen did the programming & operation.

Sam organised rigging, drapes and cabling from Chameleon Touring Systems in Sydney, and staging from Exhibition Hire. The PA system was coming from Australian Monitor, who had cut a deal with major A.M. operator Alan "Brownie" Brown, who tipped his entire production into the show, supplemented with some A.M. stock to make up a showcase PA. A 'dry run' of the theatre stage rig took place in an empty factory unit the week prior to the



*Sam Zagami, aka 'Human Strobe' - the guy Rod Salmon calls in for those special jobs!*

show, and the rest, they say, was history.

Just fifty paces or so away from the all-singing, all-jamming and all-star, celebrity showcase theatre stage, was the Clay Paky Theatre, a draped cube type showroom which entertained 80 people every 10 minutes, every day. Across almost 40 show-hours, that makes 240 separate shows.

Clay Paky are the up-market end of LAVA's portfolio, seen as the more robust and technically 'exact' moving light products for touring and TV, whereas Martin is most often found in Disco/Nightclub mode. Rod Salmon at LAVA gets away with representing two opposing brands like this, probably because prospective buyers see the distinction above, or something similar. It's an interesting juxtaposition that appears to be holding true.

Within the Clay Paky Theatre were 4 Superscan 1200, 18 Golden Scan 3, 16 Miniscans and 4 Pincans, run on the Scan Commander lighting console from MA Lighting in Germany. The audio within this area was provided by Troy Balance Corporation.

Four days, forty performance and hundreds of planning hours, and probably 10,000 probing punters later, LAVA had it's day. Rod Salmon had talked, smoothed and sold his way through most of the equipment The Human Strobe had rigged. The punters who came to oggle at the guitar hero's and imported musical legends had been full frontally exposed to the might of Martin, and the full gallery of prospects had been eased through the Clay Paky Theatre.

Mission accomplished.

*\*The Human Strobe is Sam Zagami, who's firm 'Venuelink' will do things for you. Call him on (018) 865-173. Martin & Clay Paky are distributed by LAVA - (02) 816-4444.*

# LETTERS

\*#//@%XX-?!

## No good without LUX

I query what use the lighting buyers guide is to readers when performance specifications of luminaires are omitted.

The reason for not quoting luminaire performance as published in the June Connections, is given as "When we first contacted the distributors the question of Lux was debated, we decided because different manufacturers use differing measurements (ie: centre of beam, 10m out, at lens etc) we'd leave this out". A dubious reason, to say the least, and a cop out!

All reputable manufacturers can supply Lux measurements at 1 metre called Candela's or CD for short. This figure is directly comparable across brands of the same wattage and angle. From this you can work out lux at any distance with a simple equation:

$$CD / \text{distance squared} = \text{Lux.}$$

As an example, we have a competitor whose comparable 1200w profile is half as bright as ours. I suggest in future you either nominate lux at a set distance in narrow or wide angle. This is much more important than things like stock info, which is usually out of date by print time.

Congratulations on a great magazine! It is good to have a medium for this sort of debate.  
-Simon Garrett, Selecon, New Zealand.

\* We will in future, Simon. No more cop out! 'In Stock' allows us to edit out distributors who make ambit listings of great swags of stock only available on an indent basis. Always happy to alter anything in Connections if it improves the usefulness of the magazine to the readers.

## Tripp, I sell to you!

Dear Phil: I can sell you a Micromate 304 Portable Screening Audiometer for \$2.5k to give to Tom Misner.

-Tony Russo, A.R. Audio Engineering.

\* This goes back to the stir Tripp perpetuated on page 18 of the September issue. In his debut column he started slagging off at Audio Schools in General, stating they didn't ever require an Audiometer test of their potential students. Without pointing the bone at Tom Misner, he later claimed that Tom said there is no such thing as an Audiometer. Get the drift? Anyway, read the next letter .....

## Tripp: 'Kitchen prof.'

Dear Phil: I enjoyed your column in September, but disagree on using an 'audiometer' to test the hearing of students before they enter an audio engineering course. It's what I call a 'kitchen professor' theory: it makes sense to the layman but is ludicrous in practice.

Hearing tests are conducted by presenting a series of tones to the listener, each representing a point along the audible frequency spectrum. The volume of each tone is varied to establish what the listener can hear. The result is plotted to a graph of frequency vs. amplitude. A different 'threshold of audibility curve' is produced for every listener.

If such a test was used to screen students someone would have to decide what the ideal 'threshold of audibility curve' was for a sound engineer, and how much deviation from the curve was acceptable across the frequency band. If so then it's perfectly reasonable to request all sound engineers currently working in the industry take the same test to determine if they can continue working!

There are many producers, engineers and musicians with less than perfect hearing. I've been teaching sound engineering for eight years, I dread to think how many of my students may not have passed an entrance test. Yet they're out there doing good work.

-Greg Simmons, Sydney

## Congratulations?

Just a short note to congratulate you folks in Sydney on winning the bid for the Olympics. You deserve it.

May we take this opportunity to prove our good sportsmanship and assure you that there are no hard feelings.

You bunch of arseholes.

-John Baron, Southbank Trading, Melbourne.

## The Sharp: Blatant Lie

On page 7 of Connections October 1993 issue in a column titled 'Venues' a reference was made to a Sharp tour of Perth in September. The article stated that The Sharp tour had stiffed. A completely false statement.

The tour was successful with 3 of the week's performances being full houses, only one moderate house and overall the Promotors guarantee being exceeded by a considerable margin. Where do you get your information??

The Sharp have worked extremely hard to build a strong live reputation in Perth and they don't deserve to have it tarnished by your magazine's presentation of a blatant lie.

-Neil Wiles, Manager, Sydney.

\* It WAS attributed, and Jennifer Temm responds: "The information came from Music Man Promotions' Eddie Robertson, to whom I spoke the week after the shows. Robertson said that The Sharp played five shows and none of them broke even." What now? -Ed

## A.T. amps not bipolar

The M-1000B has been published (in the Amplifier Buyers Guide) as having Bipolar output devices. It is a Mosfet amp. The error was brought to our attention by a respected customer who was concerned as what had really been purchased. (Otherwise) We find your magazine informative and useful.

-Richard Faint, Acoustic Technologies, QLD.

\* Our fault Richard, & we are very sorry. -Ed

## Kiwi Fan Mail

You have produced an excellent publication well worth the price. I use Connections to keep informed. They don't get chucked in the rubbish after I've finished reading them!

-Rowan Greig, Aro Valley, Wellington.

**BEEF MAIL:** Letters about injustices are usually sent to the accused (minus senders name & address) for comment. Often settlements occur(!), so we end up not printing the original letters. Readers should be aware we are obliged to verify accusations before publishing hate mail.

**SEND us your letter!** Yup, we ALWAYS print the aggro ones. We will award a free subscription for the best letter each month.  
PO Box 439, Epping 2121 NSW Aust, or fax: (02) 876-5715.



MELBOURNE • SYDNEY • BRISBANE

LIGHTING FOR ENTERTAINMENT

# AUSTRALIA'S PREMIER LIGHTING COMPANY

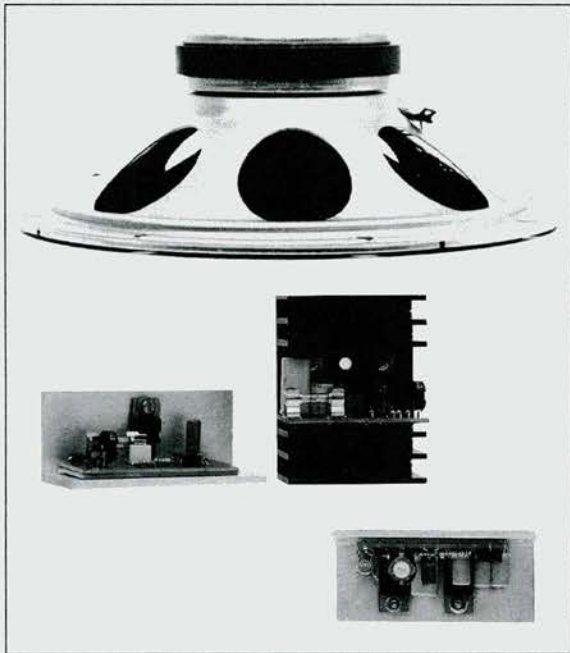
Melbourne - 646 4522

Sydney - 550 9233

Brisbane - 262 8366

# CONTRACTING NEWS

## IMP 'Building Block' C.P.A.



IMP speaker power modules will feed any speaker, & come in 2.5, 5 and 10 watt models.

The 100v line P.A. market is NOT glam, rather this is a coal face where many contracting firms toil daily. Sontec in Melbourne say the IMP system is a break with tradition, in fact Sontec's Hillary Evans is prone to excitement about it.

At left you see the common, garden variety commercial loudspeaker, a pedestrian device more often than not out-putting bland background music/noise, and vocal announcements. Also at left are IMP's SPU's - speaker power units, which you mount with each speaker RATHER than running a 100v line system to a transformer on each speaker.

The benefit is very obvious - some *FIDELITY* is possible from the speaker! Also volume can be controlled from each speaker or a remote location, and the system becomes modular. Call Sontec in your state for details.

## Music Canned, not Bland

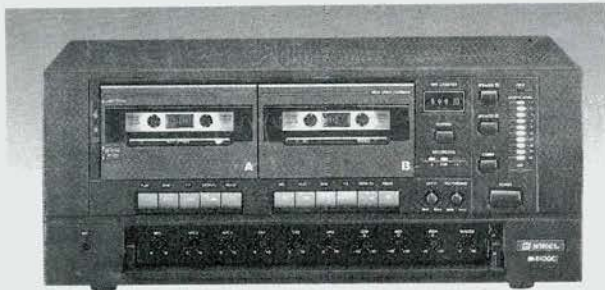
We all know Muzak is turgid elevator music, right? Not the stuff for vibrant commercial premises, where background music is an integral part of the ambience. AEI in America offer a package that is tailored to the need of the customer, an un-usual concept, according to our cynic!

AEI have rights to a zillion original recordings by genuine human musicians, which are carefully 'programmed' onto 4 hour cassettes. The choice of material is designed to maximise the vibe in your target installation. The cassettes play at a unique slow speed on the PROPAC 4+ (below), so the staff can't swap a Guns & Roses tape into the player when the boss is out to lunch. PROPAC 4+ has an in-built 25w amp, and fast-ish rewind.

Sontec are the AEI distributors, they will have Aussie programme soon too, they say, and offer a package rental deal which participating contractors can pull a commission on. A starter pack entails the PROPAC 4+ with 32 hours of music, which is exchangeable. This is 'foreground' music, say Sontec, call them for details.



## Inkel's latest All-In-One



At Magna Systems Peter Hotson rules the Inkel roost. His latest machine is the PA9100C, an amplifier, dual cassette deck and mixer in one. For \$1199 retail you get dual autoreverse decks, 3 XLR mic inputs, 3 line inputs, 100w output to 4Ω, 8Ω or 100v line, and 4 call signal tones. Ch. 1 mic input mutes the other programme, so the PA-9100C is happy in commercial installations of all kinds. Call Peter on (02) 417-1111.

## HERKES EXPANDS

Shortly after Thomas Edison invented the telephone (or was it electricity?) Bill Herkes opened shop in Sydney. The place has been selling electrical goods and theatre lamps ever since, expanding into luminaires and equipment when Garth Tanswel bought the old firm last decade.

Now located at Waterloo, the place is chocka full of everything electrical and lighting, so much so that a mezzanine level was added recently. The pic shows the assembled staff stress-testing the

floor, Garth is the short, prosperous one in the middle at front.

Wayne Kellet showed me the Eutrac system while I was there, this three circuit track comes in surface or recessed, and the adaptor (top right) allows you to switch on any or all of the 3 circuits to your light. Useful device.

Herkes are the No.1 Selecon dealer in the land, and do LSC, Kupo and many other brands. Lots of gels, rigging & cables too. Location: 890 Bourke St, Waterloo NSW, call (02) 319-3133.





## IRP Auto Mixer

The Voice-Matic DE-4024E reduces background noise while mixing up to 4 microphones unattended, say ESA Audio. In addition, it has an optional remote control. The mic gating circuit can be selected for LAST

MIC HOLD, whereby the most recently activated mic is held open till another input channel receives a signal. It has balanced inputs + 2 line inputs as well. *Details from ESA Audio, (03) 562-4605.*

Sound System Engineering

# MUNCHY

Bytes . . . .

**Obituary:** It is with particular sadness that we record the passing of John Truscott AO on Saturday 4th September 1993. A great Australian who dedicated his life to the Arts, John Truscott, through his immense energy and sheer brilliance, has left an indelible mark over the whole spectrum of our industry, both within Australia and throughout the world at large.

A memorial service was held in the Concert Hall at the Victorian Arts Centre on Thursday 7th October where friends and colleagues gathered to pay their respects. The large attendance, which was testament to the high regard in which John was held, was guided through his life's achievements in a journey that showed us all that we really had not realised just how our lives have been touched by this man.

An interim committee is moving to achieve a permanent recognition of John Truscott's special contributions to society through a fund for the arts which will have as its principal, but not exclusive aim, the development of the John Truscott Institute for Design. Allied to that, hopefully, can emerge initiatives for scholarships, exhibitions, links to performances and the streets, lanes and parks - the life blood of the city.

The committee needs indications of support whilst the legalities of the fund's purposes are approved. Your indications of support, which can come in a number of ways, will encourage these efforts. Please contact Martin Carlson, Convenor of the Interim Task Force, by phone or fax on (03) 867 1768 with any encouragement, suggestions, donations and other offers of assistance or support.

John Truscott AO - Sadly missed but never forgotten.

**International:** Bytecraft's International Marketing Manager (Asia), John Montgomery, recently hosted Australia's Minister for Trade, Senator Cooke, in Tokyo. The Senator was in Japan for talks with senior Japanese Cabinet Ministers and to review Bytecraft's penetration into the very conservative and tightly controlled Japanese hi-tech market. As reported previously in Munchy Bytes, earlier this year Bytecraft signed an exclusive agreement with Ushio U-Tech to distribute Bytecraft's Intelligent Dimming System (I.D.S.) Products into the Japanese market.

In one of Tokyo's most exclusive venues, the "Magical Studio", Senator Cooke operated Bytecraft's equipment and was treated to a light and sound spectacular, all controlled by Bytecraft technology. Senator Cooke said that his government was proud of Bytecraft's export achievements and expressed continuing support for export programs.

Subsequent to Bytecraft's participation at Plasa this year which featured the company's *State* stage movement control system, Bytecraft was invited to make presentations to the London Big 3. In a remarkable three days, presentations of *State* were made to Covent Garden, the Coliseum and the National Theatre.

**BYTECRAFT** are the sole Australasian distributors for Strand Lighting products and also manufacture a range of lighting control and stage movement control systems. Call them : 03 587 2555

### 100 volt line loudspeaker systems

Load Impedance vs Power Dissipation		dB Losses vs Voltage and Power			
Ohms	Watts	dB	Volts	% Power	% Power Loss
10	1000	0	100	100	0
20	500	-0.5	94.4	89	11
25	400	-1	89.1	79	21
33.3	300	-2	79.4	63	37
40	250	-3	70.7	50	50
30	200	-4	63.1	39.8	60.2
83	120	-5	56.2	31.6	68.4
100	100	-6	50.1	25	75
111	90	-7	44.6	19.9	80.1
125	80	-8	39.8	15.8	84.2
143	70	-9	35.4	12.5	87.5
167	60	-10	31.6	10	90
200	50	-11	28.1	7.9	92.1
250	40	-12	25.1	6.3	93.7
333	30	-13	22.4	5.0	95
500	20	-14	19.9	4.0	96
1K	10	-15	17.7	3.1	96.9
1.11K	9	-16	15.9	2.5	97.5
1.25K	8	-17	14.1	1.98	98.02
1	7	-18	12.6	1.59	98.41
1.67K	6	-19	11.2	1.25	98.75
2.00K	5	-20	10.5	1.0	99.00
2.50K	4	-21	8.91	0.79	99.21
3.33K	3	-22	7.94	0.63	99.37
5.00K	2	-23	7.08	0.50	99.50
10K	1	-24	6.31	0.40	99.60
20K	0.5	-25	5.62	0.32	99.68
40K	0.25	-26	5.01	0.25	99.75
80K	0.125	-30	3.16	0.1	99.90
		-40	1.00	0.01	99.99

For 70 volt systems, halve the load impedance.

From the Audio System Designer,  
Technical Reference, courtesy Mark IV Audio  
(Australia) (02) 648-3455

**KLARK TEKNIK**  
The first name with sound system designers

## Inside the Sony Music Manufacturing Facility

By Caroline Grafton

I was requested by our illustrious editor to go and check out the new Sony manufacturing plant and mastering facilities. So off I went with street directory in hand and a packed lunch, to the suburb of Huntingwood (near Eastern Creek) on the outskirts of Sydney. Actually, out of peak hour, it was quite a short run via the new expressway and I was comfortably settled with a cuppa within forty minutes of leaving my office.

After the antiquated facilities in the old Artarmon Studios, Mastering Manager, Daniel Segal is pleased with the design, construction and decor resulting from years of conceptualising. The Sony (International) organisation, was unsure of the final location

for the facility and at one point it didn't even look like Australia would win the bid for the entire plant project. But through the efforts and direction of, manufacturing plant manager, Louis Lambert, the first earth was turned in March '92 and the entire project was completed in one year with the facility opening for business in April this year.

There are many advantages with running mastering and manufacturing facilities in the same premises. Daniel summed it up, "in-house means your quality control is higher, because of the ease of accessibility and communication. The deadline stress factor is also



Mastering Manager, Daniel Segal

minimised because more time is available for mastering, instead of travelling and freight-ing". The Sony mastering facility contains one dubbing and four mastering studios. All rooms are tastefully and comfortably appointed with very impressive acoustic treatment (designed by Richard Priddle of ITS) and extremely well equipped.

The studios, while adaptable, are targeted for various tasks;

### Studio One:

Digital with analogue compatibility for Compilations and CD's Mastering.

Studio Two: Analogue for Compilations and CD's Mastering.

Studio Three: Cassette Mastering.

Studio Four: Fitted with Sonic Solution hard disk recorder for restoration and editing.

Studio Five: Dub suite.

Due to the nature of our industry, working hours are also adaptable in the mastering suites, but most engineers choose to work from 10.00am to 6.00pm. Very pleasant kitchen and lounge areas are adjacent to the mastering rooms, with cafeteria facilities available from 7.00am till 3.00pm and food vending machines operating twenty four hours a day, to accommodate the manufacturing plant staff of two hundred (three shifts per day) and all other staff and visitors.

Daniel tells me, "the distance has not affected the client base at all, in fact Sony mastering are enjoying a healthy trading growth rate". Daniel continues, "the clean and spacious working environment has had a positive effect on both management and staff. Some staff decided to leave when we moved, but staff changes were inevitable as some people had other projects etc."

All in all I was very impressed with both the manufacturing and mastering facilities, as well as the friendly attitude between client, staff and management.

*SONY Music Studios remains at its East Sydney location. Last issue we incorrectly stated it had moved with the mastering facility.*

## New Sydney studio to rise

By Caroline Grafton

In the heart of Ultimo a development is occurring that one day, could be, one of Sydney's prestige rehearsal, pre-production and recording venues. Masterminded by Isaia Brunt and David Mead the first stage, rehearsal studios 3 & 4, office and reception facilities, are completed and will be open for business this month.

Now you might get a shock when you first enter these premises because your first conception, like mine, will be "what a foul lug". But that means you must have used the stairs (like I did) instead of the 4.5 ton lift, into which you can drive a small truck, go up four flights and you're in!

What's really different about these rooms? All the materials (apart from studio wiring) have been recycled. Yep, you got it. Ceilings, walls, carpet, doors, windows, furniture and partitions have all been pre-loved and I might add in some of Sydney's most beloved thea-

tres and cinemas. The Regent, Embassy, Barclay, Bay Street and Manly Odeon theatres, among others, have all contributed to a mass of timber/panelling, plaster mouldings and glassworks and you can nearly feel the talents of ages oozing into your body. A bit cosmic but true.

Other classic contributing buildings have been the Martyr Hospital, White Horse Inn in Camperdown, Paddington Town Hall, St Josephs Convent and the 150 year old Toxteth Estate in Glebe.

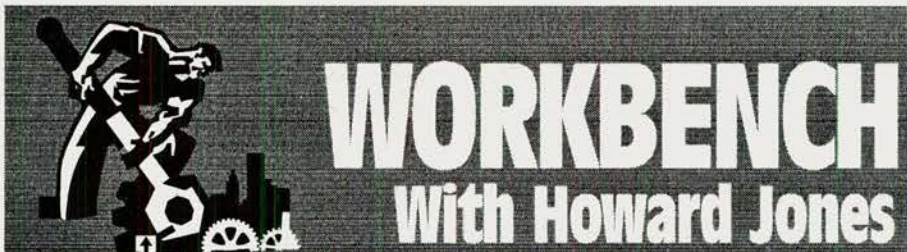
David and Isaia (call him 'Ike!') have been collecting from demolition sites for years and finally found the right location for their dream studios this year. A lot of hard work and forethought has gone into this facility and when completed will be spectacular. Eventually containing rehearsal rooms, recording and MIDI studios and a large pre-production room suitable for theatre and dance troops as well as music, with in view Edit Suite for video production. Not to mention residential type facilities usually only found in project studios, views to North Sydney and light airy spaces.

Mostly plans now, but looking at the council approved floor plan and seeing the excitement and ambition in David and Isaia, you can only wish them well and let yourself be absorbed into their dream.

Contact the guys on (02) 211-1474.



Isaia 'Ike' Brunt and David Mead



# WORKBENCH

## With Howard Jones

### Earthing in Consoles

During the course of the past year, I've had to work on several mixing consoles which, apart from all being of Japanese origin, were distinguished by the fact that they lacked a mains earth connection. In each case, this led to trouble which cost time and money.

The biggest and best reason for earthing a mixer is, of course, to provide a degree of safety for people touching it, or equipment connected to it, in the event of a failure. There are also compelling technical reasons for earthing a console.

The first case arose when I was called in to advise on a school concert set-up. The school had hired a lighting desk and dimmer racks for the show. To one side of the stage, the student band had an array of keyboards, guitars and instrument amps. The problem was simple: dimmer buzz was playing havoc with the audio, and they gave me 3 hours to troubleshoot. It was immediately apparent that their mixer didn't have an earth connection. Furthermore, the mixer, instrument amps, FOH amps etc were all plugged in to different power points around the hall and were operating off different phases from the distribution board. The dimmer racks themselves weren't shared equally across all 3 phases, as the necessary 415 V outlets had been wired mainly to one phase.

The interference was present at all times, and disconnecting various items modified the noise without killing it. Several of the power

points around the hall which I opened up had actually had the earth wire snapped off during careless installation. To cut a long story short, it was not possible to come up with a fix in the time allowed, and I left convinced that the beginning point was to wire up a mains earth to the console. The supervising teacher wouldn't allow it, as he felt that if the manufacturer had wanted one, then one would have been fitted. (During rehearsals the next day, the distribution board burst into flames, and large amounts of the mains wiring had to be redone before the concert that night! The audio still buzzed though.)

I came across this exact same problem just a short time later in a home studio. The band had bought a mid-sized desk and, using some multi-core leads provided by the shop, had hooked everything up together. They knew enough about installations to realise that the obnoxious noise they were hearing was due to an earth loop, but hadn't been able to isolate the problem. Again, the first thing I observed was the absence of an earth on the console itself. After a deal of fruitless experimenting with the grounding on the audio interconnects, I decided to open the mixer up for a closer look.

The power supply was a straight forward design based around a large transformer which, together with the component PCB, was mounted on metal rails connecting directly with the metal body of the mixer. As far as I

could see, there was no evidence of double insulation. Why then was there no mains earth on the thing? I got a jumper wire and connected it from the earth at the power point to the metalwork of the console. Ah! Suddenly all was silent - no more hums and buzzes.

With the agreement of the band, I removed the 2 wire mains cord, and installed a 3 wire cord, securing the incoming earth to the metal near the transformer. This left a few minor points to clear up and when I left, they were happily laying tracks. A week later I was called back - they'd decided they didn't like this console and the shop had agreed to exchange it for another one. Could I please convert it back to a 2 wire mains lead, as they didn't want the shop to know that they'd been modifying it! The next console had a 3 wire lead.

The final example of grounding hassles in mixers happened recently in the workshop when a powered mixer came in for some minor work. The console was turned on and when the technician working on it went to connect a cassette deck to the input, he was zapped. He wasn't hurt, but the shock he received left him feeling very unhappy. This desk, of course, didn't have a mains earth and the cassette deck did. The technician was holding the input connector in one hand - the metal body of which was an extension of the earth in the cassette deck - when he touched the console with the other. There was a high voltage present on the face plate of the mixer and - zappo! We subsequently measured a floating potential of 50 volts on the metalwork of the desk.

Why was this voltage lurking there? We asked ourselves the same question and immediately pulled the thing apart to find out why - without result. When we rang the service department of the company concerned we were told "Yeah, that's normal - all those desks do that. But don't worry about it - it's double insulated and there isn't enough current flow-

*(continued over)*

STUDIO EX

WE HIRE

WE HIRE ROLAND SAMPLERS, LIBRARIES, SYQUEST DRIVES AND MONITORS

STUDIO OUTBOARD EQUIPMENT  
ELECTRONIC MUSIC INSTRUMENTS

WE ALSO HIRE EQUIPMENT BY:

API • AMS • GML • DRAWMER • EVENTIDE  
FAIRCHILD • FOCUSRITE • LEXICON • PULTEC  
ROLAND • SUMMIT • BEHRINGER • UREI  
YAMAHA • NEUMANN • BSS • AKG • CALREC

AND NOW ALSO:

SYNTHESISERS & MODULES • ALESIS ADAT  
DRUM MACHINES • DAT MACHINES  
SAMPLERS • LIBRARIES & SYQUEST DRIVES

FOR ENQUIRIES AND BOOKINGS  
PH: 02-281-0272 FAX: 02-281-0276

## STUDIO 52: Innovators of Utilisation

By Caroline Grafton

The question on my and most peoples minds was, What came first, Nu-Music or Studio 52? The answer, Studio 52.

Studio 52 is the brainchild of two songwriters, Paul Higgins and Trevor Carter, who first met nine years ago, commencing their recording history with the basic 4 track and upgrading to an 8 track system, to record their own demos. Paul was working for a major distributor at the time and I think a little disillusioned and after the demise of 'the band' it was decided to lease a premise where Paul and Trevor could both live, work on material and expand the recording facilities to 16 track. Every man and his dog got involved and what was supposed to be your average home studio developed into a Ben Hur type production with the usual construction, acoustic treatment and equipment upgrades involved in the fit out of a studio.

By this time of course, the cash flow was flowing the wrong way and it was decided that, 'the studio would have to turn professional'. And guess what? Their first album gig was: 'Pat Cats Favourite Nursery Rhymes', later released on Fable/EMI and reputedly sold towards gold figures.

So a new studio was open for business and traded quite well, but then Nu-Music was born-stay tuned and I'll tell you how.

Well, Paul and Trevor built the usual clien-



Mark Murphy (Session Drummer)-Trevor Carter & Derek (Singer/Songwriter)

tele base and of course that included a certain amount of demos for unsigned acts, but they could see a flaw in the system (the flaw we all see). So many unsigned acts spend good money on demos, and most of the time the expense is fruitless, as it still takes the right timing, with the right A & R people hearing the result for any fruition to occur. This is when the story takes a pleasant twist.

"If the bands would pay a little more to raise the standard of the demos and if several sponsors, in the form of BASF, Soundcorp, Discronics and QUIT were available - and if the bands would be content with our knowledge of the industry, packaging and marketing ability, then we could get their music to the right people on an international as well as a national level. The concept has been achievable and the success has been huge. Commencing with the '52 Pick Up Series' in 1988, we have seen the Pick Up sequel as well as seven 'Nu-Music' and 'Real Aussie Blues' compilation releases, as well as the heavy metal compilation, 'While My Guitar Gently Kills Your Mother'. *Love it. -Editor*

Obviously Paul and Trevor's first love is music. This is evident in sponsorship they now return to various music contests. But the trust that has been built up between themselves and Nu-Music acts has returned to the Studio 52, a repeat client base that has enabled them to renovate and enlarge already comfortable facilities. When completed Studio 52 will be a very stylish studio with that residential feel that so many artists require when in lock out and pre-production mode.

### Studio 52 Facilities Available:

**24 Track Studio:** Soundtracs inline 36 console, Tascam 2" 24 Track recorder, Sony DAT, Live drum booth, B&K-Neumann-AKG & Beyer mics and a comprehensive FX rack.

**16 Track Studio:** Yamaha 2408 console, Tascam 1" ATR60-16 recorder, Sony DAT and a comprehensive selection of mics and FX.

**Rehearsal Rooms:** Well fitted out, clean, acoustically treated, well vented and reasonable access.

**Other:** Manufacturing and Organisational services include CD pressing, Cassette duplication and Mastering. An in-house graphic artist is available for Album cover and Promotional layout and artwork.

**Comfort:** Full kitchen, bathroom and lounge areas, as well as the ultimate in green rooms including a very deco pool room, including the fully fringed overhead light fitting. I haven't seen many green rooms that are actually green.

CALL (03) 417-7707. Located at Collingwood.

Paul Higgins



### WORKSHOP. (continued, prev. page)

ing to hurt you". The mixer sure didn't look double insulated to us, and this same person told us that we could earth the metalwork if we wanted - a definite no-no if it truly is double insulated. I think that this desk is badly designed and that there are leakage currents present which present a hazard to the user. For the manufacturer to know and accept this situation is simply not good enough. What if a guitarist using a microphone plugged into this desk brushed the mic with his or her lips. I bet he or she wouldn't think that there wasn't enough current flowing!

If your mixer lacks a mains earth, I'm not saying that you should automatically have it modified. If, however, you are experiencing hum loops, phantom buzzes or have received a shock from your equipment, then it's an option you should definitely investigate.

\*Howard Jones runs Studio Solutions in Sydney, who sell, repair, hire and install. Call him on (02) 906-4363, or fax: (02) 439-6444.



## BEYOND THE MIXDOWN : EDITING

For most recording projects the finished mixes will still need to be processed further to produce a master. This processing can consist of level changes, overall equalisation changes, editing and compiling.

Editing can remove unwanted sounds such as the mandatory "awun, chew, free, fore..." at the start of a song, or shorten longer tracks such as album mixes to form single or radio versions. The edited tracks are then compiled to give the desired playing sequence.

### ANALOGUE EDITING.

This is the most simple form of editing. The mixed tapes are out ("edited") and then stuck together ("spliced") in the required sequence using a precision splicing block which aligns the cut sections of tape accurately. This reduces audio "dropouts" when the spliced section passes over the playback head.

There are several disadvantages to this form of editing. Because two sections of tapes are "butted" together, the result is an abrupt change; "crossfades" are not possible. Also, the edits themselves are irreversible. Changing the sequence of the finished edits is relatively easy but if the level or equalisation is to be changed then the mix will have to be copied with the changes to another tape. This results in increased noise and distortion, so the potential improvement must be weighed against the corresponding losses.

### DIGITAL EDITING

Digital tapes cannot be spliced, so digital recordings are edited by making a new recording which incorporates the desired changes. Unlike analogue, if the recording is transferred digitally there is no loss in quality from the extra generation. This process is referred to as "non-destructive" editing as the original recordings remain intact. (Both DASH and PRODIGI digital recorders allow tape splicing but mastering machines in these formats are rare in Australia.)

### DIGITAL TAPE TO TAPE EDITING.

The simplest form of this is the tape to tape compilation, where one machine is used as a player and another as a recorder. The compiled master is assembled on the record machine from tracks played on the play machine.

The next level of editing is where the playback and record machines are linked by an edit controller. These offer precise control of the two tape transports giving accurate editing capabilities as well as audio panning, level control and crossfades.

This is how a 1630-Umatic editing system works and there are also several systems available for DAT recorders.

All these tape based digital systems are used sequentially, where each track is added to the previous one. If an earlier track is to be changed, then all the subsequent tracks will have to be re-recorded, unless the new track is exactly the same length as the one it replaces, in which case the new track can be "punched in" over the earlier version.

### DIGITAL AUDIO WORKSTATIONS

These are computers which can record digital audio. Once the audio has been recorded to hard-disc, it can be manipulated in ways which are impossible on a tape based system, such as sample accurate editing, dynamics control, equalisation, long crossfades, noise removal and so on. They are also very flexible. For example, most functions can be "undone" right up to the time that the material is taken off the disc, or "downloaded."

Workstations offer so much control that they become an extension of the mixdown process. One big drawback with workstations is the time taken up transferring audio into and out of the system, whereas with a tape based system the tape being worked on be-

comes the final master, and does not need to be downloaded.

Another drawback is that digital audio requires large amounts of disc space, around 10Mbytes per stereo minute. Generally, this means working on one project at a time, and that the disk will have to be cleared for each project, depending on the size of the drive.

Also, keep in mind that disc drives crash and when this happens everything will be lost. Computer operators back up data, and audio engineers working with digital should do the same.

### MAGNETO OPTICAL DISC RECORDERS

These devices combine features of both workstations and tape based recorders such as non-linear editing, fast random access, dumping of unwanted data, resequencing of tracks, and punch in/out recording.

The big improvement over a workstation is that the disc can be removed and played on another system, like a tape. There is also no need to download programme as the recording disc becomes the final master.

At present, there are two disadvantages of these systems. They do not offer the same degree of data manipulation as a digital workstation and the M.O. discs are expensive - around 5 times the cost of a Umatic tape of similar length - or 20 times that of an equivalent DAT. Nevertheless, M.O.D. is expected to replace the 1630 Umatic as the standard for CD master recording.

*PAUL BRYANT is a Mastering Engineer at All Music Manufacturing, call (02) 557-1169.*

SEND PAUL QUESTIONS: Fax (02) 876-5715.

## PAYING THROUGH THE NOSE FOR QUALITY MICROPHONES ?

OFTEN "BRAND" NOT QUALITY DETERMINES THE PRICE. - AUDIO TELEX HAVE

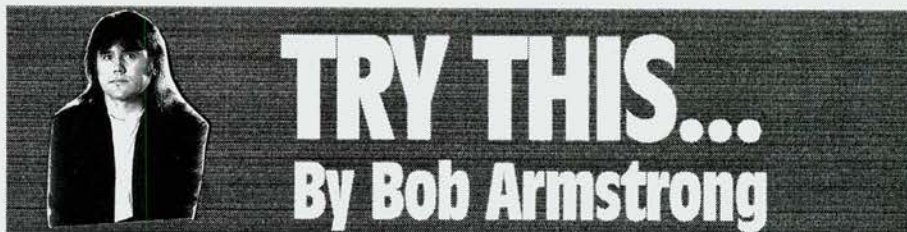
A RANGE OF ENTERTAINMENT  
AND PAGING MICROPHONES,  
WHICH IN MANY CASES USE  
THE SAME ELEMENTS AS SO  
CALLED "BRAND" NAMES,  
BUT AT AFFORDABLE PRICES.  
CHECK OUT OUR CATALOGUE -  
OR CALL OUR NEAREST DEALER.

### AUDIO TELEX

CALL US FOR A DEMONSTRATION

NSW	- Ph 647 1411	FAX 648 3698	VIC	- Ph 562 8566	FAX 562 8781
QLD	- Ph 852 1312	FAX 252 1237	W.A.	- Ph 356 2761	FAX 356 2762
S.A.	- Ph 234 9444	FAX 234 9441	TAS	- Ph 28 6373	FAX 78 1063

Write in Reader Service number: 140



## The cheapest album is sometimes the LIVE one. Some tips and pointers:

In this article we're going to talk about the cheapest of all albums, yes the live album! You may have thought that it went out with Deep Purple's 'Made In Japan' or (god help you) Frampton 'Comes Alive'. No, the old 'live album has made a resurgence, everyone has heard or has a copy of Eric Clapton's 'Unplugged' and Rod Stewart's 'Unplugged and Seated (or lying down I'm not quite sure) and who could forget Midnight Oil's MTV sessions (un-nuclear and Green).

Today these are seen to be quick and relatively cheap to make by the record companies, but can be hell on the engineer. Not only does he have to be aware of what he's putting down on tape but he also has to be aware that he doesn't impinge upon the feel and live sound of the band/artist. With all the extra equipment needed for a live recording this can severely restrict the room the artist has to give his performance, for you have to remember that the easier it is for the artist to give his all, the easier it is for you to get a quality sound down to tape.

Lets start from scratch, first things first, you have to analyse how many tracks you're going to need and whether it will be purely a live recording or whether you're going to add things later in the studio. You'll need two mixing desks (one for live and one for recording) and a multi-track recorder. Do your homework, for instance find out what format the artist require. If the band intend mixing it down at a studio which has a 24 track 2 inch recorder, this is what you'll need at the gig. Let's say your using a 16 track 1/2 inch and the band are your basic bass, drums, guitar and keys type outfit with three vocals across the front, you could get them all on 13-14 channels. Set up exactly how you would run your live gig. Let's run through the set up, leave channel one and sixteen for now, as you may well be aware that the inside and outside tracks on a tape are the ones with the most chance of corruption, they can be used but if you can it's best to leave them for spares.

Use Channels 2-7 for drums, bass drum, snare, hi-hats, tom 1, tom 2, and an overhead to get the cymbals and an all over kit sound. This overhead is particularly good for live re-

cordings because you can mix it in a bit under the kick drum and it gives a great natural reverby live room sound, not something clinical you can hear in some studio drum sounds. Remember we're talking 'live album' stuff here no techno-wiz-kid overdubs here! Leave channel 8-9 for bass. Two channels for bass, what extravagance you say! DI the bass and also mic up the bass rig as well. This with the tracks on the drums will give you a great bottom end sound, the DI signal will be devoid of speaker distortion and any effects the bass player might be running. The DI will be just the sound of his bass. Give the electric guitarist channel 10 and the keys channel 11, mic the guitarist stack and run a DI for the Keys. You may want to run an extra DI box for the keys depending on how many keyboards he's running, but generally keyboard players are pretty much on the ball and will have all their keys and effects sub-mixed together with levels pretty well set! It's guitarists you have to be wary about, if any equipment is going to break down, suffer a coronary or just generally loose the plot it'll be theirs. Also beware of guitarists who want you to mic up all their quad boxes. Vocals across the front: channels 12,13,14 simple as that. That's your basic live sounding set up, most engineers will set up like that.

As far as adding effects to the mix it then again depends on if you're doing the mix then and there or taking the tape and mixing elsewhere. Personally I would favour the method of mixing it well after the gig for three reasons, firstly you could add the effects in later therefore having a cleaner recording, secondly for some unforeseen reason something disastrous may happen and you will have the opportunity of fixing it in the mix. Thirdly it's always great to have a fresh ears approach to the mix. In the excitement of the gig the backing vocals may be a little out of tune etc, with the adrenaline pumping up on stage things can go a bit over the top, this is fine for the gig and crowd at the time, but can grate on the nerves heard in the cold light of day.

Now as I have mentioned in this column before the live sound is very much an audience vibe type of thing. The sound you will get will be devoid of any audience interaction, this

can make the performance seem a little flat. I would use those edge tracks one and sixteen (remember we didn't use them). Stick one mic on stage facing the audience and one down at the mixing bench facing the other way just to pick up the applause and cheering (or booing depending on the performance).

If bands and engineers are interested in this type of recording let me know, I can pass on more info to them. There are some fine venues that are doing this type of thing for their bands. One such venue is the Bridge Hotel (Sydney) where they have a wonderful sounding live room and have just acquired a Fostex 16 track 1/2 inch recorder. While we're on the subject of good sounding live rooms there was a band who decided to record a live album in a much loved but acoustically atrocious venue. Band and venue name have been deleted here because of defamation laws! They brought in 2 semis worth of gear and by the time they were ready to roll the gig could only fit one and a half punters and the managers dog! Five sound crew and an outside broadcast van to boot, away they went, the band played so loud the live desk engineer couldn't pump anything through the desk hence the OB boys could get any decent record levels. When little Joe the roadie was dispatched to the stage to turn the amps down he was unceremoniously turfed from the stage by irate guitarist. Several more attempts were made to reduce on stage playing volumes but they were met with even more opposition from offending band members. The crowd loved it, they were getting off, the band loved it because they thought they were having fun kicking defenceless roadies up the clacker and the dog! Well he was deaf anyway.

So these guys did all the wrong things; They picked the wrong venue, they didn't keep their levels set after soundcheck and they wasted thousands of dollars from their Record Company. There you go, now the upshot was they lost their contract, the crew walked out on them and the dog drank all the beer! Next month I'll tell you who they were - or maybe I won't!

*Bob Armstrong has a regular Saturday spot on 2SER-FM, talking about recording & music.*

Our expanded Sydney showroom is now

## open till 4pm Saturday . . .

Sydney: Ph 642 5344 • Canberra: Ph 280 6411 • Melbourne: Ph 808 2111 • Brisbane: Ph 857 6855



The  
P.A.  
People

# EX-TRACK

With Caroline Grafton

**Gotham Audio**, was host to the legendary double-bass player Ray Brown, during October. Brown was recording tracks for the upcoming release by Joe Chindamo, recorded by Michael Letho with Spiro assisting. call Tom (03)879-9400.

**Charing Cross Studios**, Bronte NSW have made a few items of studio equipment available for hire including: AKG C12 Mic (The Tube- 1957), 1x Pair RCA 77D Ribbon Mics (1944) and an SSL Stereo Compressor. Call Gordon on (02)387-8362.

**David Price of Vicki Watson Management**, Balmain NSW, has been busy last month with engineering a 'Bellydance' single, recorded at Festival and mixed at Studios 301. David also produced/engineered 'Massappeal', recorded at Megaphon and mixed at Electric Avenue. Call Vicki on (02)564-2383.

**Damien Gerard Sound Studios**, Ultimo NSW, are under pressure from clientele, engineers and staff to expand their facilities to include a table-tennis table and a pool table. But! it looks like the lobbyists for the table-tennis will have their requests fulfilled for Xmas with the pool table up for review in the new year. (I prefer pool myself!). Call Mandy on (02)692-9915.

**Bel Air Sound**, are now operating a windows based direct to hard disc recorder with 30 mins. per track and is suitable for both mastering and editing. Call Danny on (03)563-7887.

**Airmotion Studios**, St Peters NSW, has recently purchased a Fostex PD-2 Timecoded Portable DAT Machine to operate in sync with their Fostex E-2 Timecoded 1/4" and/or 24 track, video, MIDI or anything else that requires locking. The DAT machine is available for hire for anyone recording or audio/video syncing on location. Call Shane or Guy on (02)550-3863.

**Rich Music Studios**, Sydney NSW, have been busy around the clock last month, under the direction of newly appointed Studio Operations Manager, Jason Nairnsey. Future bookings look healthy for Rich but

ARTIST	PRODUCER	ENGINEER/S	NOTES
<b>New South Wales</b> <b>Airmotion Studio</b> Swordfish Catholics "Traps"	Contact Kristen Wolek	(02) 550-3863 Paul McKercher Adam Chapman Stephen Rae/Greg White	24 Track Album Album Filmscore
<b>All Music Manufacturing</b> John Waters Tezza & The Twistops Peter Coad Kilswitch Ground Level	Contact Geoff Sturte David Cafe Jeff Cripps Ross McGregor Kao Kazokas Vicious Vinyl	(02) 557-1169 Paul Bryant Paul Bryant Paul Bryant Paul Bryant Paul Bryant	"Glass Onion" CD CD Master CD Master CD Master 12" Vinyl
<b>Artrage Studio</b> Kim Sanders Radio Zero Viada Divlan Anthony Vadala Robert Sazdov	Contact Ian Chambers Rasty Jovasevic Rasty Jovasevic Viada Divlan Anthony/Rasty	(02) 564-2509 Rasty Jovasevic Rasty Jovasevic Rasty Jovasevic Rasty Jovasevic Rasty Jovasevic	24 Track Soundtrack Demo Jingle Single Sampling
<b>Bandit Audio</b> Rick Veneer	Contact Brett Coupland Brett Coupland	(02) 960 4598 Brett Coupland	24 Track Album
<b>Bush Traks Recording Studio</b> Chris Fisher Live Crisis Great Divide Sally Martin Darrell Maher	Contact Ruth Miller Rick Cole/G.Fisher Dave Highet G. Dutton/H.Vann Rex Forwood D.Maher/D.Highet	(066) 89-1290 Dave Highet Dave Highet Dave Highet Dave Highet Dave Highet	24 Track Album Tracks Album Album Demo Album
<b>Charring Cross Studios</b> Jenny Morris Dave Andor Warren Anderson	Contact Gordon Hervey Electric Hippies Dave Andor/David Russell Kevin Shirley	(02) 387-8362 Mark Forrester Prog./Recording/Mixing	16,24 Track Album
<b>Damien Gerard Studios</b> Mass Appeal Jamm Factory Mark O'Connor Mr. Scary QUAT	Contact Elia Bell Dave Price Mike Wood P.Dolso M.King Mr.Scary M.Cullen	(02) 660-8776 Mixing Live Tracks Mike Wood R.Pilling R.Pilling M.Cullen	Overdubs 16/32 Track  Album Tracks Release Tracks/Mixing Album Mixing Album Tracking
<b>David Hinds Recording Studios</b> Gregg Love Jim Pearson Transport Ultimate Audio Vision Port Macquarie Hotel	Contact David Hinds David Hinds David Hinds David Hinds David Hinds	(065) 81-1235 Gary Buckridge Gary Buckridge Gary Buckridge Gary Buckridge Gary Buckridge	Demos Jingle Jingle Jingle Jingle
<b>Enrec Studios</b> Jimmy Little Vince Brophy Stephen Cant U-Boats John Williamson	Contact Ed Matzenik Steve Newton Steve Newton Steve Newton Steve Newton Steve Newton	(049) 36 1376 Steve Newton Steve Newton Steve Newton Steve Newton Steve Newton	32 Track Album for Opal Records Album Single Demo. Demo
<b>Main Street Studios</b> Ukikuna Wongawilli Still Falling Advent Thousand Plane Raid Gypsy Rose Sweet DV8 Shot to Pieces Robertson Bros.	Contact Rob or Murray Band R.Specogna Ed Tacey Tim & Andy Troy Keen/R.Specogna Band Band Band Geoff Robertson	(042) 83-4515 R.Specogna R.Specogna R.Specogna R.Specogna R.Specogna M.Nicholas M.Nicholas R.Specogna Murray Nicholas	16 Track CD Album CD Album CD E.P. CD Album Demos Demos CD Single CD Album Demos
<b>Megaphon Sound Recording</b> Exponents Pathway Recording Studio GANG gajang	Contact Guy Dickerson David Hemming Frank Keresteshjian The GANG	(02) 516 3917 Asst.Jason Blackwell (02) 048 721 336 Rick Will/Asst.Frank K.	24 Track Album 24 Track CD Mixing 24 Track Album Project Album Demos Album Tracking E.P. Album
<b>Paradise Studio</b> Skunkhour Art Storey Monica Trapaga & Cont. Deli Playdeum Relic of Mary Lou Ratcat	Contact Bill Field Skunkhour Tad Yanni Juliene Gouga Playdeum Daniel Denholm Ratcat	(02) 357 1599 Muff Smith David Lumsdale/Muff Smith David Cafe Alex Wong Robbie Rowlands Colin Simkens/Muff Smith	24 Track Album Project Album Demos Album Tracking E.P. Album
<b>R&amp;R Recordings</b> Pat Lohalan Trigen Nat.Architectural Awards C. Turner	Contact Robert Zimola P.Whalan Trigen P. Saunders C. Turner	(02) 624 4484 R.Zimola R.Zimola R.Zimola R.Zimola	16 Track Gardening Demos Production Demos
<b>Rich Music Studios</b> Olympic Jingle Relic of Mary Lou Eddie Duquerman Richard Lawson Los Chicanos Tina Harrad Geoff Wood Swirl Alan Imbriotis Venus Envy Dorian Mode	Contact Jason Nairnsay Robbie Porter Daniel Denholm Eddie Duquerman Tom Kazas Tom Kazas Gary Key Tom Kazas Swirl Al Wright Jacquie Daley Julian Lee	(02) 264-7734 Guy Grey Darriel Denholm Fraser Stuart Tom Kazas Tom Kazas Jacquie Daley Tom Kazas Tom Kazas Al Wright Jacquie Daley Brendon Frost	24,32 Track Song for Monaco Bid E.P. Mixing Album Album Album Album Mixing Album Album Mix Album Live to Dat Album
<b>Sony Music Studios</b> Poor Boys Armoured Angel Primitive Faith Skunk Hour Lisa Maxwell	Contact Ross Ahern Paul Northfield Band	(02) 332-0320 Asst. Jock Tim Whitten Simon Tonx Tim Whitten Simon Tonx	24 Track Overdubs Album E.P. Mixing Tracks Mixing Tracks
<b>The Enterprise</b> The Sprinklers Blaise Various High Schools Enterprise Singwriter's Group	Contact Graeme Storer Sprinklers Blaise/Storer	(02) 564 3225 G. Storer G. Storer	8 Track Album Album Mixdown Mac/Atari Sequ. Setups Publishing Demos
<b>The Vault Studio</b> Divinyls This Life Fantastic	Contact Michael Tame Mark Moffatt Mark Moffatt	(the usual) (02) 953 0332 Mark Moffatt Mark Moffatt	24 Track Pre-Production Demos

YOUR MUSIC IS SAFE WITH US



# BASF

**EX-TRACK**  
(continued)

for bookings and info. call Jason on (02)264-7734.

**Planet Sound Studios**, Perth WA, have purchased two new FocusRite mic pre-amps and KRK 9000 Monitors. Give John (Chicky-Babe) Villani a call on (09)382-2211.

**Enrec Studios**, that intergalactic studio in Kurri Kurri NSW, engineer/producer Steve Neutron (Steve Newton) married Janet Planet on the October 9th, at a ceremony in Maitland. And in case you didn't know, Ed Matzenik of Enrec is the off the planet person responsible for inflicting us with the off the wall monthly Connections comic 'Little Sharky' (see Activity Fun Page). If you feel you must contact these 'loops, call (049) 361-376.

**All Music Manufacturing**, St Peters NSW, have added a Denon CD player to their mastering equipment. The Denon's features include digital output and varispeed. Call Paul on (02)557-1169.

**SBS Audio**, have changed their phone number to (03)685-2523, give them a call. The SBS facility has been open for some time now and since opening their doors to the entire commercial market, have enjoyed considerable success. Give Richard a call on the above number.

**Sony Music Studios**, East Sydney NSW, have improved their facility with the addition of a new Galaga machine and acoustic baffling in the main studio. Call David or Ross on (02)332-0320.

**The Enterprise**, Dulwich Hill NSW, are always on the look out for reputable and serious musos, programmers and songwriters to add to an already strong pool of talent. You can send a demo of your *copyrighted* work (no more than two tracks), and a stamped, self addressed envelope to, 51 Windsor Road, Dulwich Hill, NSW 2203 to the attention of Graeme Storer.

**Trackdown Pty Ltd**, Sydney NSW,

BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER/S	NOTES
<b>Trackdown P/L</b> Robyne Dunn Blinky Bill Radio Zero A.B.C.	<b>Contact Jeff Watson</b> Robyne Y.G.E.S. Band A.B.C.	<b>(02) 550 6890</b> Michelle Barry Simon Leudley Simon Leudley Kathy Naunton	<b>24 Track</b> Album TV Series E.P. Album
<b>Tracking Station Studios</b> Redneck Mothers SQUID The Promotions Dept. Merry Widows Wayne Law Bazato	<b>Contact Martin Cass</b>  Martin Cass	<b>(02) 212 4801</b> Steve Pomfrett Anthony McKenzie Steve Pomfrett Anthony McKenzie Martin Cass Steve Pomfrett <b>(02) 951 2270</b> D. White K. Carthier D. White Terry Garland <b>(02)605 1203</b> Ian Cooper Ian Cooper Ian Cooper Will Rout	<b>24 Track</b> Album Demo Jingle Album Album Jupiters Casino <b>24 Track &amp; Pro-tools</b> 1 x 30sec TVC 1 x 30sec TVC 1 x 30 TVC D. White Mix <b>24 Track &amp; 8 Track Digital</b> Demo Demo 3rd Album Demo
<b>Trinity Noise</b> Berlei - Music Comp. Masterfoods Salsa - Music fx Qantas Music Comp. Sydney 2000 Olympic bid film #1	<b>Contact David White</b> David Holmes David Holmes David Holmes Music Composition	<b>(07) 262-8422</b> Bruce Jacobson Bruce Jacobson Malcolm Jacobson <b>(07) 369 8733</b> Julian Lynch Julian Lynch <b>(07) 8445189</b> Wyn.Wynyard Robby Roland Brendan Morley	<b>24 Track</b> A/V Mix Demos Loc rec at St. Mary's Cathedral <b>16 Track</b> Demo Songs Demo Songs <b>24 Track</b> E.P. E.P. Single
<b>Wirra Willa Studios</b> "True Story" "Minoo Choun" Malcolm Baxter "The Voodoo"	<b>Contact Will Rout</b> The Band Minoo Phil Stein The Band	<b>Contact Malcolm Jacobson</b> Robert Moore/Col Elliott Leigh Fielding John Webber <b>Contact Murray Lyons</b> Garry Smith Garry Smith <b>Contact Cliff Chandler</b> Pangaea	<b>24 Track</b> Album
<b>Queensland</b> <b>Greenville Recording Studios</b> Col Elliott Leigh Fielding Vox	<b>Contact Mick Wordley</b> L. Karski	<b>(08) 278-8506</b> M. Wordley	<b>24 Track</b> Album
<b>Suite 16 Audio Productions</b> Ernie & The Wheels Peter Roberts <b>W.E.M. Studios</b> Pangaea Dream Poppies Reign International	<b>Contact Nikki Mackenzie</b> G. MacKenzie Band/MacKenzie G. Mackenzie G. Mackenzie Band G. Mackenzie <b>Contact Danny Olesh</b> Shivai Daf Ryme Ernie S. Segal Jabulani <b>Contact Tom Kehoe</b> John Farnham/Ross Fraser Albare Danon James Reyne  Doug Brady <b>Contact Gary Moorhead</b> E. Rayner Shane O'Mara G.P./Phil Jones D.K. <b>Contact Richard Micallef</b>  <b>Contact Ross Burton (03) 429 6199</b> Maria Raue Robert Severini Greg Hind Geraldine John Justin Ross Burton Self Matt Voigt	<b>(03) 532 0633</b> Gary MacKenzie Gary Mackenzie Flannery/Mackenzie Mackenzie/Flannery Gary Mackenzie Gary Mackenzie <b>(03) 563 7887</b> D.Olesh/Sam Pulley Paul Anison Ernie D. Olesh D. Olesh <b>(03) 879 9400</b> Doug Brady/Spiro Tony Espie/Spiro Doug Roberts/Spiro Michael Letho/Spiro Paul Kosky/Spiro Nigel Derricks/Spiro Doug Brady/Spiro <b>(03) 827-7483</b> C. Dorr Chris Corr Kalju Tonuma Laurence Maddy <b>(03) 685 2523</b> James Taylor James Taylor James Taylor Terry Dodson Vlad Longdma Milita Jagic Mark McDougall Stewart Day Milita Jagic John Justin Stewart Day Mark McDougall Matt Voigt	<b>24 Track</b> Pre-Production Pre-Production Demo CD Album Demo. <b>24 Track</b> E.P. Album Pre-Production Album Album Album Pre-Production <b>48 Track</b> Album Album tracks Project Album Tracks Demo Mixes Demos Demo Mixes <b>48 Track</b> Live Album Album Album E.P. <b>24 Track</b> Song for Compilation Album Song for Compilation Album Song for Compilation Album Album Album <b>24 Track</b> Album Album E.P. Album Album Film Trax Album Demos
<b>South Australia</b> <b>Mixmaster Productions</b> Story Time			
<b>Victoria</b> <b>Audio House Pty.Ltd.</b> Call of the Wild Talon Vyroid Def Records Indie/Grunge Compilation Bengal Tigers Angel Dust <b>Bel Air Sound</b> Shivai Def Ryme Rapscaalion Home Land Jabulani <b>Gotham Audio</b> John Farnham Albare Danon James Reyne Joe Chindamo Tina Arena Matt Turley Leather Zen <b>Platinum Studios</b> Split Enz Matt Kirsch Gentle Persuasion Diana Kiss <b>SBS Audio</b> Things of Stone & Wood Weddings Parties Anything Greg Champion Australia Chinese Orchestra Lewis & Young Ensemble <b>Studio RB-X</b> Michael Herry Georgietta Patrick McMahon Geraldine Wilson Tan Punturumpon Sinbad Paul Gibbs Not Big Wot Box			

YOUR MUSIC IS SAFE WITH US



**BASF**

**damiengerard** SOUND STUDIOS  
Phone: (02) 660-8776  
FAX: (02) 692-9915  
**Professional Recording & Rehearsal Studios.**  
64 WATTLE ST, ULTIMO, N.S.W. 2007.

Skyhigh Music Constructions and Studio. Hot, Hip & Groovy Amek Hendrix Console, forty tracks of Tascam digital & analogue recording, Lexicon 480L, Akai DD1000 and a ridiculous amount more. Far out in-house engineers, Rob Taylor, David Henderson & Chris Greenhalg.... the most happening studio in the universe. We specialise in anything musical or extra-terrestrial. Phone us for an outrageous quote on, (049) 50-1574 or Fax on (049)50-1986.

**24 Track Professional Recording Studio.**  
TEL: (02) 684 2039  
9 BRIDGE ST, RYDALMERE. **Nullabalo Music**

**EX-TRACK**  
(continued)

has expanded their facilities with the installation of two Pro Tools digital work stations (1x4 and 1x8 track). Pro Tools offers flexibility, speed and expansion capability in a powerful multitrack hard disk recording system and is available for demonstration through Sound Devices in Sydney. Call Geoff at Trackdown on (02)550-6890.

**WEM Studios**, West End Brisbane Qld, have now introduced a new 2" facility with 24/36 channel automation. Call Cliff-(07) 844-5189.

**David Hinds Recording Studios**, Port Macquarie NSW,- remember back in September issue, the owners and engineers of this facility were brutally attacked by their egos and formed a band called 'Dangerous Mongrels'. Well, guess what? Their first gig has proven to be a *howling* success in a local Port Macquarie nightclub. I thought I'd be in the *doghouse* after what I said last time but it appears David will continuously *hound* me for recognition, but I think the editor might have a *bone* to pick with this and I shall have to *ig-gnaw* the *hairy* situation. Call David on (065)81-1235.

BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER/S	NOTES
Harry Coxan	Self	Matt Voigt	Album
Hot Shots	Ross Burton	Matt Voigt	TV Post
Cesary	Cesary	Stewart Day	TV Theme
Backlash	Backlash	Day Voigt	E>P.
Tina Arena	Rick Price	Paul Kosky	Demos
Roger Woodward	Andrew McKeich	Stewart Day	Doco
Copping/Brady/Saverini/Fitzgerald	Themselves	Various	Jingles
<b>Sing Sing</b>	<b>Contact Mark Wood</b>	<b>(03) 428 4622</b>	<b>48 Track</b>
Hunters & Collectors	Band/Nick Mainsbridge	Nick Mainsbridge	Album
Frente		Daniel Denholm	Single
Steve Hoy		Trevor Reading	Album
Daily Planet		Kaj Dahlstrom	E.P.
Killjoys		Phil Butson	Album Track
<b>Studio 52</b>	<b>Contact Paul Higgins</b>	<b>(03) 417 7707</b>	<b>16, 24 Track</b>
Warcry	Warcry	Trevor Carter	C.D. Single
Drama Queen	Band	Trevor Carter	C.D. E.P.
Indian	Trevor Carter	Trevor Carter	C.D. Album
Tinsley Waterholse	Trevor Carter	Trevor Carter	C.D. Album
Luciano Menolascina	Luciano	Trevor Carter	C.D. E.P.
Strictly Oz	Band	John Copeland	16 Track Demo - Covers Oz
<b>Western Australia</b>			
<b>Bonsai Recording Studio</b>	<b>Contact Tom Thorpe</b>	<b>(09) 349 6029</b>	<b>24 Track</b>
Logical Choice	T. Thorpe	T. Thorpe	Sports Media Music CD
A. Breen	T. Thorpe	T. Thorpe	Demo
P.M.F.M.	T. Thorpe	T. Thorpe	"Morning Crew" Jingles
<b>Planet Sound Studios</b>	<b>Contact John Villani</b>	<b>(09) 382-2211</b>	<b>24,32,48 Track</b>
Jeff Brownrigg	J.V. & J.B.	John Villani	Album - Tracking
Allegiance		Les Williams/John Villani	Album - Mix
Rick Healey - Ainsley Crosser		John Villani	Single Mix
Bran Nu - Dae	Chong Lim	Les Williams	Album Tracking

**YOUR MUSIC IS SAFE WITH US**



**BASF**

**SEND your studio activities by the 15th of the month, for inclusion here.**

**Fax: (02) 876-5715,**

**Post: PO Box 439, Epping NSW, 2121.**

**Call Caroline (02) 876-3530 for details.**

**COMPLETE CUSTOM MANUFACTURE SPECIALISTS**

For all your Manufacturing needs speak to Paul at Studio 52

- CD's & Cassettes
- Digital Compilation & Mastering
- Complete Artwork & Printing Service



**(03) 417 7707**

fax: (03) 417 5294



*The History Maker*

Since the 1950's Celestion speakers have provided the driving force behind the greatest names in Rock & Roll history.

Today, more of the world's leading amplifier manufactures still choose Celestion above any other loudspeaker - **because even after nearly 40 years, nothing else sounds like Celestion!**

**CELESTION**  
PROFESSIONAL LOUDSPEAKERS



FOR YOUR FREE CELESTION CATALOGUE,

PLEASE CONTACT:

**SYDNEY:** TEL: (02) 975 1211 FAX: (02) 975 1368  
**MELBOURNE:** TEL: (03) 646 5811 FAX: (03) 6465887  
**BRISBANE:** TEL: (075) 29 0619 FAX: (075) 73 1650

# Buyers Guide

## SPEAKERS:

All prices are the top RETAIL price and INCLUDE sales tax.

### Systems ▼

#### ARK SYSTEMS. (03) 555 7859

**Powermax 1** processor controlled 2 way speaker system with 300mm woofer and 25mm CD loaded 90° x 40° horn. Sens. 99db, 50Hz-20kHz. 565 x 380 x 380mm. 20kgs trapezoidal. \$1566

**Powermax 2** processor controlled 2 way speaker system with 380mm LF unit and 25mm CD 60° x 40°. Sens. 101db, 50Hz-20kHz, 763 x 445 x 414mm, 27kgs trapezoidal. \$1920

**Powermax 3** processor controlled 2 way F.B. system with 2 profiles using 300mm LF unit and 25mm CD 90° x 40° horn. 99db Sens. 50Hz - 20kHz. 565 x 380 x 380mm 20kgs \$1566

**Powermax 4** - processor controlled 2 way F.B. system featuring concert system profile with 380mm L.F. unit and 25mm HF unit. Sens. 101db. 50Hz - 20kHz. 700 x 445 x 400mm. 25kgs. \$2030

**922** Processor controlled 2 way speaker system with 380mm woofer, 305mm MR, 25mm compression driver, Dispersion 90° x 50°. Sens. 104db, 40 Hz - 20kHz. H.1000 x W. 515 x D. 580mm. Trapezoidal 65kgs. \$3270

**212** Processor controlled speaker system. MID/Hi Cabinet with 2 x 305mm power dome M.R. + 50mm H.F. unit. Sens. 106db 200Hz - 20kHz. H. 1000 x W. 515 x D. 580mm. Trapezoidal 60kgs, \$3395

**925** Processor controlled speaker system 2 x 380mm woofers loaded into coupled vented enclosures for use with 212/925 systems 40Hz - 250Hz. H. 1000 x W. 515 x D. 580mm trapezoidal 65 kgs \$3096

**218** Processor controlled sub bass system 2 x 480mm woofers in optimally tuned enclosures 35Hz - 250Hz. Sens. 102db. H. 1000 x W. 515 x D. 725mm, 80kgs, \$3564

**215T** - processor controlled 2 way compact full range enclosure with 380mm LF driver and 50mm HF driver on 90° x 40° CD. 50Hz-20kHz. H. 760 x W. 450 x D. 420mm trapezoidal 30kgs \$3546

**215L, 215M** - Processor controlled 2 way F.B. system with 380mm LF driver and 50mm HF unit on 90° x 40° radial horn with 3 profiles available 215M: H670 x W450 x D480 215L: H460 x W460 x D760 30kgs \$3366

**1812** - one box concert speaker system with 212 MID/HIGH pack plus 2 x 480mm LF units. 1812 is designed to be used with CU118 & CU212 processors. 40Hz - 20kHz. H. 1016 x W. 1016 x D. 577mm. 130kgs. \$6804

**Powermax Sub** - subwoofer system with 2 x 305mm proprietary woofers in optimally coupled vented enclosure 35Hz-100Hz,

### Components ▶

Sens. 103db. H. 930 x W. 540 x D. 400mm. 36 kgs. \$1675

**Powerpro** - dual channel processor for all Powermax range with EQ and phase alignment. I.S.C. protection circuitry and sub output \$1150

**MICROMAX** - processor controlled passive 2 way system featuring 1 x 200mm LF unit and 1 x 25mm H.F. unit with ferrofluid 60Hz - 20kHz, 92db Sens. H. 380 x W. 275 x D. 275mm, 9kgs \$587

**Micro Sub** - processor controlled sub bass system for Micro Max system featuring 2 x 200mm LF units in optimally coupled enclosure. Sens. 95db. H. 535 x W. 500 x D. 450mm 20kgs \$832

**MICROPRO** - dual channel speaker processor for Micro Max series with I.S.C. speaker protection and auto output \$885

**CU215, CU222, CU118** - dedicated processor systems featuring variable ip level, band control levels and ISC protection circuitry \$1385

#### AUDIO TELEX COMMUNICATIONS (02) 647 1411 Made in Australia

**MODEL ATC16** 2 Way, 8 Ohm, 150 Watts C/W 12" full range speaker and horn c/w carry handle and stand mount adaptor. W.40 x D.26 x H.52 \$592.61

**MODEL ATC17** 3 Way, 8 Ohm, 200 Watts, c/w 15" & 10" speakers and horn. Heavy duty c/w carry handles. W. 48 x D. 38 x H. 94 \$1158.16

**MODEL ATC18** 2 Way, 8 Ohm, 150 Watts c/w 12" full range speaker and horn Foldback wedge W40 x H26 x D35 \$633

#### AMPS UNLIMITED (03) 354 7184. AMPOWER - made in Australia

**Foldback Wedge** 100 Watt double angle black carpet finish but with 1 x 12" imported speaker plus horn. H. 400 x W. 530 x D. 340 14Kg \$365

**Foldback wedge** 200 Watt as above with 1 x 12" Australian (Lorantz) speaker plus horn. H. 400 x W. 530 x D. 340 15Kg. \$515

**Foldback wedge** 150 Watt as above but with 15" imported speaker plus horn. H. 440 x W. 590 x D. 360 16Kg \$485

**Foldback wedge** 150 watt as above but with 15" "eminence" speaker plus horn. H. 440 x W. 590 x D. 360 16Kg \$525

**100 Watt** "mini bin" black carpet finish 1 x 12" Australian (Lorantz) speaker plus horn. Inputs 1 x 6.5, 1 x XLR, Top hat stand base H. 550 x W. 400 x D. 290 16Kg each \$865 pair

**100 Watt** "Mini bin" as above but with imported 12" speaker. H. 550 x W. 400 x D. 290 16Kg

each \$805 pair  
**200 Watt** "Mini Bin" black carpet finish as above with 1 x 12" Australian (Lorantz) speaker. H. 550 x W. 400 x D. 200 17kg each \$1050 pair

**Foldback wedge** 100 watt double angle black carpet finish 1 x 12" Australian (Lorantz) speaker plus horn H. 400 x W. 530 x D. 340 14Kg \$435

**FB100/A** Powered wedge 100 watt double angle, black carpet finish with 1 x 12" Australian (Lorantz) speaker plus horn. H. 400 x W. 530 x D. 340 17kg \$735

**FB100/I** Powered wedge 100 watt as above but with 12" imported speaker plus horn. H. 400 x W. 530 x D. 340 17kg \$665

**FB 100/15** Powered wedge 100 watt as above but with 15" eminence speaker plus horn. H. 440 x W. 590 x D. 360 20kg \$805

#### AUSTRALIAN MONITOR, (02) 8163544. Made in Australia

**Qmx DS18** - Dynamic, high power dual 18" sub woofer system Specification: TBA

**Qmx SS15** - Designed for use with Qmx Double 12 or NRG 500 loudspeaker single 15" low frequency driver for limited space applications Specifications: TBA RRP: \$1270

**HDIA Column** - High definition tapered array utilising frequency and phase tapering techniques providing high intelligibility over critical speech band width. 70/100 volt switchable 6 ohms, 100 watts Size: 1032mm x 200mm x 140mm Weight: 14 kgs RRP: \$910

**T1200** - Designed for musician/performer. The T1200 is compact and easily transportable, high power 12" cast frame woofer coupled with a phenolic compression driver, 1400 watts RMS, 560 watts peak. Size: 510mm x 381mm x 406mm Weight: 18kgs RRP: \$1090

**T1212** - Compact low profile stage monitor featuring the same components and rugged construction as the T1200. 140 watts RMS, 560 watts peak. Size: 546mm x 381mm x 365mm Weight: 16.5kgs RRP: \$1144

**T1500** - Ideal reinforcement enclosure. The T1500 features high power 15" cast frame woofer with phenolic compression driver, rugged carpeted exterior and recessed pole mount. 160 watts RMS, 720 watts peak Size: 711mm x 457mm x 483mm Weight: 24 kgs RRP: \$1360

**NRG500** - Energy 500 ultra compact, high efficiency two way enclosure utilising 15" woofer and " compression driver on a 90 degrees x 40 degrees constant directivity 4 350 continuous 500 watts peak Size: 630mm x

460mm x 295mm (trapezoidal) Weight: 37kgs RRP: \$1735

**F300** - 'Industry standard' compact wedge monitor, clear, clean reproduction features swivel horn allowing vertical/horizontal use. 15" co-axial loudspeaker, 200 watts RMS 500 watt peak. Size: 550mm x 450mm x 460mm Weight: 32 kgs RRP: \$1735

**SL/AM** - High Sensitivity, double band-pass design, utilising 2 x 15" low frequency drivers producing a massive 137db SPL. Frequency response 40Hz - 250Hz Size: 1084mm x 540mm x 700mm Weight: 75kgs RRP: \$2195

**Qmx Double 12** - Dynamic, accurate high power and compact. The Qmx Double 12 is the ideal installation system where space is at a premium. 2 x 12" woofer 1 x 2" compression driver. 400 watts RMS, 700 watts peak. Size: 380mm x 870mm x 460mm Weight: 44kgs RRP: \$2500

**Qmx Maxx** Concert Wedge Monitor - Switchable Mid/H.F. voicing low profile, high power stage monitor. 2 x 12" low frequency drivers 1 x 2" compression drivers 400 watts RMS 700 watts peak. Size: 380mm x 870mm x 460mm Weight: 42kgs RRP: \$2575

**Qmx Double 15** - The unique concept of Qmx provides dynamically accurate high fidelity performance constant directivity, phase coherence, stable beamwidth and is capable of delivering a minimum SPL of 136db. 600watts RMS. 1200 watts peak. Size: 550mm x 1060mm x 570mm Weight: 70kgs RRP: \$3200

**APOGEE SOUND - ESA Audio (03) 562 4605. Made in USA**

**SSM** Compact Loudspeaker, 85 Hz - 25 kHz ± 3dB, 112 dB continuous, 118 dB peak 1 metre on axis. Horizontal - 90° Vertical - 100°, 150 watts continuous @ 16 ohms. 5kg, 140 x 330 x 149. \$1583.

**AE-1S2** Compact Loudspeaker. 63 Hz - 19 kHz ± 3dB, 110 dB continuous, 116 dB peak 1 metre on axis. Horizontal - 90° Vertical - 90°, 60 watts continuous @ 8 ohms. 7.7kg. 406x 260x 178. \$1791.

**AE-2S2** Wide Angle Loudspeaker. 63 Hz - 19 kHz ± 3dB, 114 dB continuous, 120 dB peak 1 metre on axis. Horizontal - 165° Vertical - 45°. 120 watts continuous @ 16 ohms. 18.2kg, 267x 813x 254. \$2343.

**AE-3S2** 70 Hz - 18 kHz ± 3dB, 121 dB continuous, 127 dB peak. Horizontal - 70° Vertical - 45°. 300 watts continuous @ 8 ohms. 16.4kg. 406x 318x 254. \$2571.

**AE-3MS2** High Output Monitor Loudspeaker. 70 Hz - 18 kHz ± 3dB, 121 dB continuous, 127 dB peak. Horizontal - 45° Vertical -

70°. 300 watts continuous @ 8 ohms. 16.4kg. 318x413x356. \$2678

**AE-4** AE-4 Full Range Loudspeaker. 60 Hz - 16.5 kHz ± 3dB, 123 dB continuous, 127 dB peak. Horizontal - 90° Vertical - 45°. 200 watts continuous @ 8 ohms. 26.8kg. 584x 356x 356. \$4392.

**AE-4M** Full Range Monitor 60 Hz - 16.5 kHz ± 3dB, 1 metre on axis 123 dB continuous, 127 dB peak. Horizontal - 90° Vertical - 45°, 200 watts continuous @ 8 ohms. 24.5kg. 521x 356x 699. \$4403.

**AE-5** Arrayable Full Range Speaker. 53 Hz - 17 kHz ± 3dB, 125 dB continuous, 131 dB peak. Horizontal - 90° Vertical - 45°. HF - 150 watts cont @ 8 ohms LF - 300 watts cont @ 8 ohms. 34.5kg. 584x 356x 419. \$6020.

**AE-5NC** Arrayable Full Range Speaker with Narrow Conical Horn. 53 Hz - 17 kHz ± 3dB, 125 dB continuous, 131 dB peak. Horizontal - 60° Vertical - 60°. HF - 150 watts cont @ 8 ohms LF - 300 watts cont @ 8 ohms. 34.5kg. 584x 356x 419. \$6020.

**AE-SHF** HF Speaker Only, HF Horn and driver only of the AE-5 enclosure for increasing coverage in larger auditoriums and for underbalcony fill. 18.1kg. 381x 457x 305. \$2493.

**AE-6** Monitor Loudspeaker, 53 Hz - 17 kHz ± 3dB, 125 dB continuous, 131 dB peak. Horizontal - 45° Vertical - 90° HF - 150 watts cont @ 8 ohms LF - 300 watts cont @ 8 ohms. 30kg. 356x 584x 394. \$6020.

**AE-6NC** Monitor Loudspeaker with Narrow Conical Horn. 53 Hz - 17 kHz ± 3dB, 125 dB continuous, 131 dB peak. Horizontal - 60° Vertical - 60°. HF - 150 w cont @ 8 ohms. LF - 300 w cont @ 8 ohms. 30kg. 356x 584x 394. \$6020.

**AE-6B** Stage Monitor. A wedge-style, two-way, bi-amped stage monitor utilising electronic control for improved performance. 53-17 kHz ± 3dB, 125 dB continuous, 131 dB peak. Vertical - 45 degrees; Horizontal - 90 degrees, 300 watts continuous, 28.6kg 470x 356x 673 \$6020.

**AE-8** Arrayable Full Range Speaker, 40 Hz - 16 kHz ± 3dB, 128 dB continuous, 135 dB peak. Vertical - 40 degrees; Horizontal - 60 degrees, HF - 150 watts cont @ 8 ohms LF - 500 watts cont @ 8 ohms. 45hz, 970x 480x 440. POA

**AE-8B** Concert Stage Monitor. 46 Hz - 16 kHz ± 3dB, 126 dB continuous, 132 dB peak. Vertical - 40 degrees; Horizontal - 60 degrees. HF - 150 watts cont @ 8 ohms LF - 500 watts cont @ 8 ohms. 36kg. 546x 495x 677. \$7182.

**AE-9** Advanced Generation Concert Loudspeaker, 38 Hz - 19 kHz ± 3dB, 128 dB continuous, 135 dB peak. Vertical - 40 degrees; Horizontal - 60 degrees. Three-way, 3i-amped 67kg. 970x 560x 580.

**POA**  
**AE-SB**, Sub Bass Loudspeaker. 35 Hz - 105 Hz ± 3dB, 125 dB continuous, 131dB peak, Omnidirectional. 600w cont. @ 8 ohms. 48.6kg 572 x 762 x 353. \$4155.

**AE-10s2** Compact Subwoofer. 38 Hz - 120 Hz ± 3dB, 125 dB continuous, 131 dB peak, Omnidirectional, 800 watts continuous, 3200 watts peak. 59.6kg 572x 813x 610. \$5572.

**AE-12s2** 2 x 450mm Drivers, 30 Hz - 105 Hz ± 3dB, 128 dB continuous, 134 dB peak, Omnidirectional, 1200 watts continuous, 4800 watts peak. 92.7kg, 762x 1137x 572. \$6933.

**3X3 II** Arrayable Concert Loudspeaker, 55 Hz - 17.3 kHz ± 3dB, 132 dB continuous, 138 dB peak. Vertical - 40 degrees; Horizontal - 60 degrees, HF - 100 watts cont, MF - 150 watts cont, LF - 800 watts cont @ 8 ohms. 122.7kg, 1143x 737x 762. \$13,588.

**AS-3200** Artist Systems 3000 Loudspeaker. Single-amp, 2-way electronically-coupled compact loudspeaker with extremely high output. 65-19 kHz ± 3dB, 1 metre on axis. 121 dB continuous, 127 dB peak 1 metre on axis. Vertical-40 degrees; Horizontal-70 degrees, 300 watts continuous. 495 x 406 x 343, 19kg. \$2035

**AS-3600** Artist Systems 3500 Monitor Loudspeaker. Single-amp, 2-way electronically-coupled compact stage monitor with extremely high output. 65-19 kHz ± 3dB, 1 metre on axis. 121 dB continuous, 127 dB peak 1 metre on axis. Vertical-70 degrees; Horizontal-40 degrees, 300 watts continuous. 18.1kg, 406 x 495 x 394. \$2118

**AS-4200** Artist Systems 4000 Loudspeaker. Single-amp, 2-way electronically-coupled moderate size loudspeaker with extremely high output. 55-18 kHz ± 3dB, 1 metre on axis. 123 dB continuous, 128 dB peak 1 metre on axis. Vertical-45 degrees; Horizontal-90 degrees, 300 watts continuous. 31.1kg. 610 x 406 x 406. \$3432

**AS-4600** Artist Systems 4500 Loudspeaker. Single-amp, 2-way electronically-coupled moderate size stage monitor with extremely high output. 55-18 kHz ± 3dB, 1 metre on axis. 123 dB continuous, 128 dB peak 1 metre on axis. Vertical-45 degrees; Horizontal-90 degrees, 300 watts continuous. 32kg. 610 x 406 x 406. \$3443

**AS-5000** Artist Systems 5000 Loudspeaker. Single-amp, electronically coupled moderate size sub-woofer with extremely high output and deep bass response. 36-105 Hz ± 3dB, 1 metre on axis, 125 dB continuous, 131 dB peak 1 metre on axis. Vertical-OMNI; Horizontal-OMNI.

## No 1 for microphones . . .

Come in and try mics from AKG, Audio Technica, Beyer, Chiayo, Crown, EV, Peavey, Shure, TOA and Vega. The P.A. People has the widest selection of microphones on display and available for hire - Cable or Radio, Vocal or Instrument, Headset or Handheld. Compare for yourself - and get the best deal.



Sydney • Canberra • Melbourne • Brisbane



# EnTech '94



**Connections  
South Pacific  
Entertainment  
Technology  
Tradeshaw**

Olympics  
2000

**October 6th - 8th, 1994**

**Sydney Exhibition Centre, Darling Harbour,  
Sydney, AUSTRALIA**





## A fresh, new Tradeshow for the Entertainment Technology industry!

- **Pro Audio**
- **Recording**
- **Theatre**
- **Touring**
- **Public Address**
- **Venues**
- **Lighting**
- **Nightclub**
- **Disco**
- **Broadcast**
- **Contracting**
- **Rigging**
- **Flying**
- **Stage Machinery**
- **Services**
- **Software**
- **MIDI**
- **Architectural PA & Lighting**



Finally technology comes together at ENTECH '94 - the first biennial tradeshow run by Connections Magazine. ENTECH '94 gives Australia, New Zealand and Asia a venue to display the latest technology - 'hands ON!'

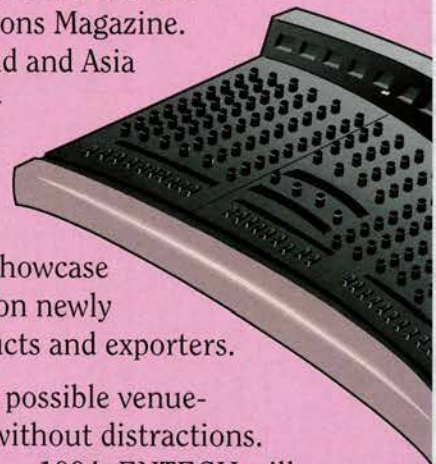
Timed carefully with the world tradeshow calendar in mind, ENTECH offers 3 days and nights of Workshops, Showcase Performances and Events - with a focus on newly evolving Australasian innovations, products and exporters.

Sydney Exhibition Centre offers the best possible venue- ENTECH '94 will get down to business, without distractions. Opening at 10am on Thursday 6th October 1994, ENTECH will trade 10am - 6pm for three days. Careful planning and consultation with the trade will ensure visitors are offered a controlled, conducive environment in which to conduct business and create alliances. Admittance to the trade is free, without pre-registration.

Workshops and panel sessions will run continuously, with industry professionals delivering 'how to do it' talks, and end user panels debating actual experiences - an invaluable forum, run to a logical timetable during the three ENTECH days.

At night SYDNEY comes alive with ENTECH SHOWCASE performances at venues around town, where Sound & Lighting systems available from participating exhibitors will be demonstrated - with great Australian bands and entertainers providing the programme!

International participation at ENTECH is expected, with extensive advertising committed already- in China, Singapore and the USA to date. Special travel and accommodation packages are available through QANTAS- the Australian Airline.





## A TRADE SHOW

### SHOW CASES

These performances will show new equipment **at work** and provide a series of unique right shows, for ENTECH visitors & trade.

See and hear the latest in Sound & Lighting, after hours at ENTECH '94!

ENTECH '94 offers a unique environment in which to display equipment, and solicit business. Sydney Exhibition Centre features clean, clear-span exhibition space with internal height maximised to 10.5m.

ENTECH '94 offers a flexible floor plan that provides for enclosed 'theatrette' style displays, or open plan. Fixed 'Shell scheme' modules are offered, along with unique and affordable 'Sideshow' modules for exhibitors not needing much space. Everyone is catered to at ENTECH!

Business is the theme at ENTECH '94, no live music will be allowed by day, and sound will be strictly controlled to provide an atmosphere conducive to all. On-stand equipment demonstrations are encouraged, but may only occur through monitors, subject to strict control and scheduling. ENTECH '94 will offer 'quiet' zones.

The organisers have surveyed many overseas events, and unashamedly draw on the best aspects of tradeshow from around the world. Extensive Australian tradeshow expertise is provided by Robert Walker, who has also organised the major Australian industry tradeshow during 1993.

**Best of all, ENTECH is also affordable, but be quick!**



## WORKSHOPS

✓ *Value added*

The 'Engine Room' of ENTECH '94 is the Workshop programme, where accredited industry professionals will present 'How To Do It' sessions. These will not be manufacturers giving white papers, rather the emphasis is on the practical, covering all ENTECH industry disciplines. Panel Discussions will be conducted with End-Users debating equipment uses, brands and techniques. The WORKSHOP programme is available from May - and will include:

#### WORKSHOP TOPICS:

- ◆ **Mixing Live Music**
- ◆ **Moving Lights**
- ◆ **Studio Engineering**
- ◆ **MIDI & DMX**
- ◆ **Computer protocols**
- ◆ **Design & Installation**

#### PANEL DISCUSSIONS:

- ◆ **Equipping Venues**
- ◆ **Touring & Management**
- ◆ **Technology Directions**
- ◆ **Exporting: what's next?**
- ◆ **Hire Company directions**
- ◆ **Where next for large studios?**

The organisers *welcome* submissions regarding the proposed Workshop programme.





## Connections *South Pacific* Entertainment Technology Tradeshow

**DATES:** Thursday 6th October,  
Friday 7th October,  
Saturday 8th October, 1994.

**TIMES:** 10am - 6pm daily.

**VENUE:** Sydney Exhibition Centre,  
Darling Harbour, Sydney.

**LOCATION:** Approximately a 5 minute walk from the centre of Sydney City C.B.D., serviced by Monorail and public transport. The Centre has a large onsite car park.

**ADMITTANCE:** Free to trade after registration. Two registration zones will be provided: for Pre Registered trade, and Walk-Up trade. Trade is qualified to mean anyone working within the target industries, anyone on the Connections Magazine database, anyone able to produce a relevant business card, and/or anyone fulfilling the requirements detailed on the registration form available at the front counter. OTHERS or those unable to qualify as 'Trade' will not be admitted, except on Saturday 8th October. Non trade ('OTHERS') may register on Saturday and enter after payment of a \$10 registration fee.

**STUDENTS** enrolled in relevant courses may attend and qualify as Trade. Secondary students must produce a letter from School stating a pre-interest in relevant technology has been demonstrated. Other students may register and attend on Saturday 8th October, and pay a \$5 fee.

**FLOOR PLAN:** is available from the organisers. The floor plan will carry a version number, and is subject to periodical changes. No additional space will be made available for ENTECH '94, floor plan revisions will only cater to stand adjustments.

**RATES:** start at \$145 per square metre, for 30m or more, booked **prior to** February 1st 1994. Rates **will rise** incrementally thereafter. Shell scheme and Sideshow modules are available at an additional charge over the floor cost.

**SPACE BOOKINGS:** are accepted on a first come, first-in basis. All exhibitors are treated equally, large and small.

**PAYMENT:** 10% deposit required upon booking, 40% due April 30, (or 90 days after booking if booked later than Feb. 1st 1994,) balance due August 30th, 1994. Subject to terms and conditions.

**SHOWCASE PERFORMANCES:** are available to exhibitors. ENTECH will provide a limited number of venues and time slots. Exhibitors should book early.

**WORKSHOPS:** will carry a nominal admittance charge. International visitors are entitled to attend one workshop daily at no cost if pre-booked. Interstate visitors will be entitled to attend one workshop free if pre-booked. Pre booking is highly recommended. Workshop Programme advertised from May '94.

**TRADE PROSPECTUS: AVAILABLE NOW. VISITORS GUIDE: AVAILABLE MAY 1994.**

ENTECH '94 is proudly presented by Connections Publishing Pty Ltd, PO Box 439, Epping 2121, NSW, Australia. Call 61-2-876-3530, Fax 61-2-876-5715. (ACN 058443182)

**Connections**  
YOUR trade magazine

600 watts continuous. 55.3kg, 660x 838x 635. \$3796.  
**AS-8000** Artist Systems 8000 Loudspeakers, Bi-amped, 3-way electronically coupled trapezoidal enclosure with extremely high output power. 36-17 kHz  $\pm$  3dB, 1 metre on axis, 130 dB continuous, 136 dB peak 1 metre on axis Vertical - 40 degrees; Horizontal - 60 degrees. Low 800 watts; Mid/High 300 watts cont. 86.2kg, 1397x 737 x 787. \$8060.

**ANCHOR AUDIO**, from **ESA Audio**, (03) 562-4605. Made in Canada.  
**AN-100** Powered Monitor Speaker, 4.5" woofer coupled & ferrofluid-cooled dome tweeter with inbuilt amplifier. Wireless mic option, 65-18 kHz  $\pm$  3dB, 101 dB maximum @ rated power, 25 watts continuous. 3.8kg 230x 210x 230 \$489.  
**AN-1000X** Full Range Powered Monitor Speaker, 4.5" woofer coupled & ferrofluid-cooled dome tweeter with inbuilt amplifier. 65-20 kHz  $\pm$  3dB, 103 dB maximum @ rated power, 45 watts continuous. 4.3kg 130x 210x 230. \$971.  
**AN-1001X** Unpowered Companion Speaker, 4.5" woofer coupled & ferrofluid-cooled dome tweeter. 65-20 kHz  $\pm$  3dB, 103 dB maximum @ rated power, 45 watts continuous. 2.4kg, 130x 210x 230 \$378.

**BOSE**, from **Bose Australia**, (02) 884-1022.  
**802II**. A full range, actively equalised system designed for high quality sound reinforcement in installed and mobile environments. 240w/ch RMS  $\pm$  8 $\Omega$ . H. 34cm W 52cm D 33cm. 14kg. \$1590  
**402**: Four full range drivers positioned for wide horizontal and narrow vertical dispersion. Reinforcement of voice & music in medium-high SPL applications. 240w/ch H:59cm W:21cm D:18cm. 7kg. \$850  
**102** Commercial system, engineered for distributed sound applications. Available in flush mount & surface mount enclosures & range 100v, 70v & 8 $\Omega$  versions. Flush: 32.5cm dia x 9.5cm deep. \$230. Surface: H:14.4cm. W 21.5cm x D 15.4cm. \$539.  
**301 II** Music monitor which provides reliable hi fidelity performance for foreground music applications. 200watts, 10" woofer and 1" horn-loaded tweeter. \$1200.00  
**PS-12**, 12" 3-Way system. 350 watts, 12" woofer and 2" phenolic diaphragm compression driver. 1" horn-loaded tweeter. \$1898.35  
**PROSTAX SERIES** (Carwin Vega)  
**PS10**, 10" 2-Way system. 200watts, 10" woofer and 1" horn-loaded tweeter. \$1200.00  
**PS-12**, 12" 3-Way system. 350 watts, 12" woofer and 2" phenolic diaphragm compression driver with 2" throat radial horn. 1" horn-loaded tweeter. \$2205.40  
**PS-410**, Quad 10" subwoofer cabinet. 800 watts. Four 10" woofers. Trapezoidal vinyl covered cabinet. \$2359.80  
**PS-10F**, Flying Version PS-10, \$1375.70  
**PS-12F**, Flying Version PS-12, \$2149.25  
**PS-15F**, Flying Version PS-15,

**Panaray System**, 2 x 502 array, each with five Bose 4.5" full range drivers, (60.4cm H, 14.6cm W, 18cm D, 6.8kg) 1 x 502 Acoustimass bass encl (78.8cm H, 35.6cm W, 40cm D, 36kg) & 1 x 502 system controller. \$5,350 complete system.

**CERWIN VEGA**, from **Ashton Admore** (09) 478-3800. Made in USA

**V-35D**, 18" High Performance 3-Way Systems with JMH-1 Driver, \$2495.85  
**PD-18C**, 18" 3-Way System with 12" Midrange, \$2272.05.  
**V-37D**, 18" High Performance 2-Way System with JMH-1 Driver, \$1846.70.  
**V-30D**, 15" 2-Way System, \$1453.00.  
**MV-15B**, 15" 3-Way System, \$1172.55.  
**V-15B**, 15" 3-Way System, \$1072.95.  
**V-12B**, 12" 2-Way System \$836.85.  
**L-36PE**, 18" 189JL "Junior Earthquake" Folded Horn (Portable), \$2754.70.  
**B-36A**, 18" 188EB In Compact Folded Horn, \$2059.05  
**B-119B**, 18" 188EB In Direct Radiating Vented Box, \$1847.35  
**B-215B** (2) 15" 154EB In Direct Radiating Vented Box, \$1955.90  
**B-15**, 15" Direct Radiating Vented Box, \$880.30.

**DSM-200A** Dual Spruce Moose Horn with (2) M-161 & (1) T1-1 (200Hz-20kHz) with Crossovers, \$2855.20SSM-200A Single Spruce Moose Horn with (1) M-161 & (1) JMH-1 (200Hz-20kHz) with Crossovers, \$2055.05.  
**D-32D**, (2) 12" ER124 3-Way Horn Loaded Mid/Treble with Crossovers, \$2307.00.  
**M-1**, (1) 12" ER124, Tweeter, \$855.15.  
**P-10** 10" 2-Way Satellite, \$560.45.  
**CM-12**, 12" 3-Way, 150W, High Performance, \$798.60.  
**CM-10**, 10" 2-Way, 125W, Compact, \$569.60.  
**CM-8**, 8" 2-Way, 100W, Broadcast, \$403.00.  
**SM-15B**, 15" 2-Way Stage Monitor, \$1046.05.  
**SM-12B**, 12" 2-Way Vocal Spot Monitor, \$801.55  
**F1**, \$3376.35.  
**PROSTAX SERIES** (Carwin Vega)  
**PS10**, 10" 2-Way system. 200watts, 10" woofer and 1" horn-loaded tweeter. \$1200.00  
**PS-12**, 12" 3-Way system. 350 watts, 12" woofer and 2" phenolic diaphragm compression driver. 1" horn-loaded tweeter. \$1898.35  
**PS-15**, 15" 3-Way system. 450 watts, 15" woofer and 2" phenolic diaphragm compression driver with 2" throat radial horn. 1" horn-loaded tweeter. \$2205.40  
**PS-410**, Quad 10" subwoofer cabinet. 800 watts. Four 10" woofers. Trapezoidal vinyl covered cabinet. \$2359.80  
**PS-10F**, Flying Version PS-10, \$1375.70  
**PS-12F**, Flying Version PS-12, \$2149.25  
**PS-15F**, Flying Version PS-15,

\$2406.00  
**PS-15BD**, 15" dual voice coil subwoofer cabinet. 200watts. 15" woofer with 3" dual voice coil @ 8 ohms per coil. Built-in passive crossover, \$1452.75  
**PS-215B**, Dual 15" subwoofer cabinet. 800 watts continuous program power. Two 15" woofers with 3" voice coil and diecast aluminium frame. \$2039.45  
**PS-18B**, 18" Folded horn cabinet. 800 watts continuous program power. 18" woofer with 3" voice with 3" voice coil and diecast aluminium frame. \$2636.65.

**CELESTION**, from **AMBER TECHNOLOGY** (02) 975 1211 Made in U.K.

**SR1** - "SR Series", Full Range Cabinet - 2 x 8" Full range concentric dome radiators in injection moulded cab, 500 watts @ 97 dB Sens., 50Hz - 20kHz, 124dB Max SPL H. 302 x W. 556 x D. 358 - 15.5kg \$1699  
**SR3** - "SR Series" Full range cabinet - 1 x 8" Full range concentric dome radiator in injection moulded cab, 250 watt @ 93dB Sens, 60Hz - 20kHz, 117 dB Max SPL H. 226 x W. 325 x D. 240 - 9kg \$799  
**SR Compact** - "SR Series" Compact F/Range - 1 x 5" Concentric Dome radiator in injection moulded cab, 100 watts @ 91dB, 80Hz - 20kHz, 111 dB Max SPL H. 174 x W. 218 x D. 177 - 3.2kg \$999pr.  
**SR2** - "SR Series" Bass Cabinet - 1 x 18" Driver, 1000 Watts @ 98dB Sensitivity, Freq. Resp. 40Hz - 150Hz H. 714 x W. 600 x D. 510 - 49 kg \$2599  
**SR4** - "SR Series" Bass Cabinet - 2 x 10" Drivers in "Paraflo" Configuration, 250 watts @ 94dB Sens., 50Hz - 250Hz, 118 dB Max SPL H. 770 x W. 320 x D. 370 - 25kg \$1375  
**SR8** - "SR Series" Bass Cabinet - 2 x 15" Drivers in "Paraflo" Configuration, 500 Watts @ 98 dB Sens, 40 Hz - 250Hz, 126 dB Max SPL H. 860 x W. 560 x D. 450 - 38.2 kg \$2899

**SR Compact** - "SR Series" Compact F/Range - 1 x 5" Concentric Dome radiator in injection moulded cab, 100 watts @ 91dB, 80Hz - 20kHz, 111 dB Max SPL H. 174 x W. 218 x D. 177 - 3.2kg \$999pr.  
**SR2** - "SR Series" Bass Cabinet - 1 x 18" Driver, 1000 Watts @ 98dB Sensitivity, Freq. Resp. 40Hz - 150Hz H. 714 x W. 600 x D. 510 - 49 kg \$2599  
**SR4** - "SR Series" Bass Cabinet - 2 x 10" Drivers in "Paraflo" Configuration, 250 watts @ 94dB Sens., 50Hz - 250Hz, 118 dB Max SPL H. 770 x W. 320 x D. 370 - 25kg \$1375  
**SR8** - "SR Series" Bass Cabinet - 2 x 15" Drivers in "Paraflo" Configuration, 500 Watts @ 98 dB Sens, 40 Hz - 250Hz, 126 dB Max SPL H. 860 x W. 560 x D. 450 - 38.2 kg \$2899

**SR3** - "SR Series" Full range cabinet - 1 x 8" Full range concentric dome radiator in injection moulded cab, 250 watt @ 93dB Sens, 60Hz - 20kHz, 117 dB Max SPL H. 226 x W. 325 x D. 240 - 9kg \$799  
**SR Compact** - "SR Series" Compact F/Range - 1 x 5" Concentric Dome radiator in injection moulded cab, 100 watts @ 91dB, 80Hz - 20kHz, 111 dB Max SPL H. 174 x W. 218 x D. 177 - 3.2kg \$999pr.  
**SR2** - "SR Series" Bass Cabinet - 1 x 18" Driver, 1000 Watts @ 98dB Sensitivity, Freq. Resp. 40Hz - 150Hz H. 714 x W. 600 x D. 510 - 49 kg \$2599  
**SR4** - "SR Series" Bass Cabinet - 2 x 10" Drivers in "Paraflo" Configuration, 250 watts @ 94dB Sens., 50Hz - 250Hz, 118 dB Max SPL H. 770 x W. 320 x D. 370 - 25kg \$1375  
**SR8** - "SR Series" Bass Cabinet - 2 x 15" Drivers in "Paraflo" Configuration, 500 Watts @ 98 dB Sens, 40 Hz - 250Hz, 126 dB Max SPL H. 860 x W. 560 x D. 450 - 38.2 kg \$2899

**COMMUNITY** from **PRODUCTION AUDIO SERVICES P.A.** (03) 852 0900 Made in U.S.A.

**CSX70** - 3 Way bass reflex, 45Hz - 18KHz, 4 x 12", 2 x 2" compression drivers, 1 x PZT horn, 600W (RMS), 1500W (Program), Nominal impedance 4 Ohms, 132 Max dB SPL @ 1M. H. 26.75" x W. 33.5" x D. 18" Weight 56.8kg. \$3395  
**CSX57** - 3 Way bass reflex, 40Hz - 18KHz, 2 x 15", 1 x 1" PZT horn, 300W (RMS) 750W (Program). Nominal impedance 4 Ohms. 128 dB Max SPL @ 1M H. 33.5" x W. 26.75" x D. 18" Weight 52.3kg. \$2375  
**CSX52** - 3 Way bass reflex, 40Hz - 20KHz, 1 x 15", 1 x 6.5" Midrange, 1 x PZT horn, 200W (RMS) 500W (Program). Nominal impedance 4 Ohms. 119 dB Max SPL @ 1M. H. 33.5" x W.

18" x D. 18" Weight 40kg. \$2095  
**CSX35** - 2 Way Bass reflex, 60Hz - 18KHz, 1 x 15", 1 x PZT horn. 150W (RMS) 375W (Program). Nominal impedance 8 Ohms. 121.3 dB Max SPL @ 1M. H. 23.75" x W. 17.25" x D. 13.5" Weight 21.8kg. \$1095  
**CSX25** - 2 Way bass reflex, 70Hz - 18KHz, 1 x 12", 1 PZT horn. 100W (RMS) 250W (Program). Nominal impedance 8 Ohms. 117.5 dB Max SPL @ 1M. H. 18.25" x W. 15" x D. 13.5" Weight 17.3kg \$895  
**CSX50B** (Subwoofer) - Bass reflex, 35Hz - 500Hz, 1 x 18" driver. 200W (RMS) 500W (Program). Nominal impedance 8 Ohms. 122dB Max SPL @ 1M. H. 33.5" x W. 26.75" x D. 18" Weight > 47.7kg. \$2295  
**CSX60B** (Subwoofer) - Bass reflex, 35Hz - 800Hz, 4 x 15" drivers. 600W (RMS) 1500W (Program). Nominal impedance 4 Ohms. 132 dB Max SPL @ 1M. H. 33.5" x W. 33.5" x D. 22" Weight 65.9kg. \$3295  
**CSX20M** (Monitor Wedge) - 2 Way bass reflex, 70Hz - 18KHz, 1 x 12", 1 x PZT horn. 100W (RMS) 250W (Program). Nominal impedance 8 Ohms. 117.5 dB Max SPL @ 1M. H. 14" x W. 15" x D. 22.25" Weight 13kg \$950  
**CSX38M** (Monitor Wedge) - 2 Way bass reflex, 60Hz - 18KHz, 1 x 15", 1 x PZT horn. 150W (RMS) 375W (Program). Nominal impedance 8 Ohms. 121.3 dB Max SPL @ 1M. H. 17.5" x W. 17.5" x D. 25" Weight 18.5 Kg \$1150

**DEX AUDIO PTY. LTD.** (03) 372 2266 Made in Australia

**DEX 200 P.A.** - Rugged, compact design with an incredibly smooth sound, 12" woofer, Bi-Radial Horn with compression driver, sensitivity 100db/1 watt/1 Metre \$950  
**DEX 200 FB Wedge** - Compact and light. This foldback wedge gives smooth high performance sound at high levels. 12" Woofer, h/f ring radiator, sensitivity - 100db/1 watt/1 metre. Power rating - 250 watts RMS \$900  
**DEX P.A.** - A medium sized box with excellent performance characteristics. Like all Dex speaker systems, this box is very realistic and smooth sounding. 2 x 12" woofers, bi-radial horn with compression driver. Sensitivity - 103db/1 watt/1 metre. Power Rating - 1000 Watts R.M.S. POA **DEX 1200**  
**P.A.** - This system provides high power handling and high efficiency from two 15" woofers with a bi-radial horn and compression driver in a heavily braced enclosure. The most realistic sounding box on the market. Sensitivity - 100db/1 watt/1 metre. Power handling - 1400 watts. POA

**ETONE P.A.** (02) 533 1911, Made in Australia

**Model 3001** Speaker cabinet, Vocal P.A., Disco/Dance Party Hire 100 watts 540 x 400 x 340mm 15kg \$468  
**Model 2122** Speaker Cabinet Disco/Dance Party Hire 200 Watts 860 x 435 x 350mm 28kg \$860  
**Model 3654** Wedge monitor High output Rock Band Stage Monitor 300 watts 630 x 490 x 390 33kg \$1499  
**Model 1508** Speaker Cabinet Full Range Band P.A. 600 Watts 1240 x 450 x 550 \$2451.00

**ELECTRIC FACTORY** (03) 480 5988 SESSION - made in Australia

**112H** 100 Watt 12" Eminence & Zomax Horn covered in black "Ensemble" carpet, steel grill, rear corners 18Kgs 31 x 43.5 x 55.5cm \$399  
**112 FB** Wedge version 112H 18Kgs. \$399  
**115H** 125 Watt 15" Eminence & Zomax Horn covered in black "Ensemble", steel grill, rear corners. 24 Kgs. 39 x 49.5 x 63.5cm \$499  
**115FB** Wedge Version 115H 24Kgs. \$499

**E.V. from Mark IV AUDIO, AUSTRALIA.** (02) 648-3455. Made in USA and Australia.

**DELTA MAX™ SYSTEMS**  
**DML-1122A**, 67-20,000Hz, 75/300 watts, 98 dB SPL, 80° x 55°, 1250Hz X/O, 58.4cm x 37.1cm x 35.6cm, 32.1kg, \$3917.00  
**DML-1152A**, 50-20,000Hz, 75/400 watts, 100dB SPL, 60° x 40°, 1100Hz X/O, 75.9cm x 45.2cm x 41.4cm, 48.7kg, \$4853.00

**STAGE MONITORS**

**FM-1202ER**, 60-23,000Hz, 300W/1200W, 101.5dB SPL, 80hms, 90° x 40°, 1600Hz X/O, 49.5cm x 49.5cm x 63cm, 30kg, \$1602.00  
**FM-1502ER**, 47-23,000Hz, 300W/1200W, 102dB SPL, 8 ohms, 90° x 40°, 1600Hz X/O, 55.9cm x 57.1cm x 70.8cm, 34kg, \$1,745.00  
**FM-12C**, 80-20,000Hz, 200W/800W, 99dB SPL, 8 ohms, 90° x 90°, 1200Hz X/O, 41.4cm x 45.7cm x 39.1cm, 13.4kg, \$979.00  
**DML-2181A**, 36-100Hz, 800 watts, 98dB SPL, 285° x 240°, 100Hz X/O, Two 8 ohms loads, Two DL 18mt (18in), 91.4cm x 57.2cm x 75.9cm, 74.5kg, \$3917.00.

**MANIFOLD**

**MTH-2/94A**, 150-20,000 Hz, HF: MB, 150/600 watts, HF/MB 110/106dB Sens., 90° x 40°, 160/1600 Hz X/O, Two DHIA variants, Two DL 10x (10in.), 91.4cm x 57.2cm x 75.9cm, 97kg, \$9164  
**ML-2A**, 40-200Hz, 800 watts, 98dB Sens., 285° x 240°, 160Hz X/O Two DL 18 (18in.), 91.4cm x 57.2cm x 75.9cm, 75.5kg, \$4528  
**MTH-4A**, 150-20,000 Hz, MB/MF, HF, 1200/240/100 watts, MB/MF, HF, 109/113, 108 dB Sens., 60° x 40°, 160/1600/8000 Hz X/O, One DH2A/4mt, One DH2A/4mt, Fou DL10X (10in), 91.4cm x 91.4cm x 75.9cm, 166kg, \$15,761.00.  
**MTL-4**, 40-225Hz, 1600 watts 102dB Sens., 177° x 177°, 160Hz:

X/O, Four DL 18mt (18in.), 91.4cm x 91.4cm, 75.9cm, 119kg, \$9261.00

**COMPACT STAGE SYSTEMS**

**100S** Moulded, one-piece cabinet. 80-18,000 Hz + 3dB, 100W/400W, 96dB SPL, 100° x 100°, 1500Hz X/O, 61cm x 38.1cm x 21.6cm, 12.7kg, \$1338.00  
**S-200**, Carry a powerful full-range system in one hand. (Optional) Active equalizer lowers the -3dB point, 44-20,000Hz, 300W/1200W, 100dB SPL, 100° x 100°, 2,000 Hz X/O, 61cm x 38.1cm x 21.8cm, 16.3kg, \$1,742.00

**STAGE SPEAKER SYSTEMS**

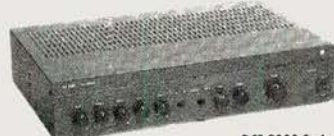
**S-1503ER**, Three-way system, either full-range or biamp. 40-20,000 Hz, Full Range : 300W/1200W, 100dB SPL, 8 ohms, Nom. Dispersion 90° x 40°, 600Hz/4000 Hz X/O, 72cm x 35.1cm x 61.9cm, 47.7kg, \$2059.90  
**S-1803ER**, Biampable or full-range three-way system, 35-20Hz, Full Range : 300W/1200W, 100dB SPL, 8 ohms, Dispersion 90° x 40°, 600Hz/4000 Hz X/O, 90.2cm x 49.2cm x 71.1cm, 60.9kg, \$2571.00  
**S-122**, 70,20,000 Hz Response, 200 watts, 99dB Sens, 90° x 40°, 1600Hz X/O, 62.8cm x 46.2cm x 30.5cm, 21.8kg, \$1025.00  
**S-152**, 55-20,000 Hz Response, 200 watts, 100dB Sens., 90° x 40°, 1600Hz X/O, 59.1cm x 53.8cm x 40.6cm, 25kg, \$1334.00  
**S-181**, 48-200Hz Response, 400 watts, 98dB Sens, Omnidirectional, 200Hz X/O, 70.4cm x 53.8cm x 58.2cm, 35.4kg, \$1597.00  
**RV200** 40-18000 Hz (-10dB) 1200 watts, 100dB Sens., 100° x 100°, 2000Hz X/O, Transducer Complement, H.F.: 1.5" super dome tweeter coupled to 9" Direktor. 660 cm x 420cm 24.5cm, 18kgs. \$1422.00

**218EVX** Frequency Response +/- 3dB : 36Hz, 2000 continuous program, 99dB Sens., 78cm x 1150cm x 650cm, 85kgs, \$3704.00  
**215EVX (Mongoose)**, 35-23000 Hz (-10dB) 2000 watt continuous program, 100dB Sens., 90° x 40°, 1250Hz X/O, Transducer Complement, H.F.: DH1A/HP9A, L.F.: 2 x EVX 150A, 207cm x 59cm x 47cm 60kgs, \$4424.00  
**S1500**, 47-23000 Hz (-10dB), 47-23000 Hz (-10dB) 300 watt, 1200 watt, 102dB Sens., 90° x 40°, 1600Hz X/O, Transducer Complement, H.F.: DH2010A/HT9A, L.F.: DL15M, 760cm x 45cm x 42cm, 35kgs, \$1632.00  
**S1200**, 40-18000 Hz (-10dB), 1200 watt, 100dB Sens., 90° x 40°, 1600Hz X/O, 8 ohms, Transducer complement, H.F.: DH2010A/HT9A, L.F.: EVM12S Pro Line, 610cm x 390cm x 370cm, 24kgs, \$1540.00

**S-181**, 48-200Hz Response, 400 watts, 98dB Sens, Omnidirectional, 200Hz X/O, 70.4cm x 53.8cm x 58.2cm, 35.4kg, \$1597.00  
**RV200** 40-18000 Hz (-10dB) 1200 watts, 100dB Sens., 100° x 100°, 2000Hz X/O, Transducer Complement, H.F.: 1.5" super dome tweeter coupled to 9" Direktor. 660 cm x 420cm 24.5cm, 18kgs. \$1422.00  
**218EVX** Frequency Response +/- 3dB : 36Hz, 2000 continuous program, 99dB Sens., 78cm x 1150cm x 650cm, 85kgs, \$3704.00  
**215EVX (Mongoose)**, 35-23000 Hz (-10dB) 2000 watt continuous program, 100dB Sens., 90° x 40°, 1250Hz X/O, Transducer Complement, H.F.: DH1A/HP9A, L.F.: 2 x EVX 150A, 207cm x 59cm x 47cm 60kgs, \$4424.00  
**S1500**, 47-23000 Hz (-10dB), 47-23000 Hz (-10dB) 300 watt, 1200 watt, 102dB Sens., 90° x 40°, 1600Hz X/O, Transducer Complement, H.F.: DH2010A/HT9A, L.F.: DL15M, 760cm x 45cm x 42cm, 35kgs, \$1632.00  
**S1200**, 40-18000 Hz (-10dB), 1200 watt, 100dB Sens., 90° x 40°, 1600Hz X/O, 8 ohms, Transducer complement, H.F.: DH2010A/HT9A, L.F.: EVM12S Pro Line, 610cm x 390cm x 370cm, 24kgs, \$1540.00

**JANDS** (02) 516 3622. Made in AUSTRALIA  
**System 44** Satellite: Compact two-way for pro disco applications, passive, 400W, JBL 2202H mid/bass, JBL 2426J on JBL 2344 horn. 695mm x 365mm x 300mm 32kg \$2795  
**System 80** Birch: Super compact,

## RCF COMMERCIAL AUDIO P.A. SYSTEMS



RCF 2000 Series

Our range consists of mixers, amplifiers, ceiling/horn/cabir at loudspeakers. Weatherproof loudspeakers, paging microphones and mobile PA systems.



Monitor 55 (4T & 4 Black)

## INSTALLATION VERSATILITY

The RCF MONITOR SERIES: Impedance matched, high power, compact systems with CD horns + 48Hz-23KHz response (+/-2dB). Wall, ceiling and 360° cluster mounting access available

## MAJOR DEVELOPMENTS IN LOUDSPEAKER TECHNOLOGY



L155800

The new S80C LAB SERIES and P540 PRO SERIES loudspeakers represent a major improvement in: high power, low frequency sound reproduction. Unique side vented radiator system and state of the art suspension allow high peak power levels - up to +10dB Crest Factor.



Distributed through:  
**RCF Australia**, 139 Richmond Rd, Richmond, SA 5033.  
**Ph: (08) 234 2789 Fax: (08) 234 2791**

Write in Reader Service number: 136

# GRAFTONS



LIGHTS

# GRAFTONS

Sydney's largest  
AM Rental  
Department

THE RIGHT  
CHOICE

SOUND

# GRAFTONS

Seasoned  
Professionals  
understanding your  
Professional needs!

THE RIGHT  
ANGLE

SALES

# GRAFTONS



Phone  
698 7777  
Fax  
698 9999

THE RIGHT  
NUMBER

HIRE

## SPEAKERS

super high sensitivity sub-woofer designed for max kick, 2 x JBL 2441 18" drivers, 1200W RMS, black birch ply, wheels & bar handles. 985mm x 595mm x 700mm 35kg \$3895

**System 80 STD:** Touring version of System 80 Birch with standard ply, without wheels. 985mm x 595mm x 700mm 93kg \$2795

**System 1400XL:** Full range with 2 x JBL 2226 15" drivers & JBL 2446J 2" compression driver with titanium diaphragm, 1400W RMS, black carpet finish, wheels & handles. 1245mm x 510mm x 510mm. 90kg. \$4495

**System 700:** Full range with JBL 2226 15" driver & JBL 2426J 1" compression driver with titanium diaphragm, 700W RMS, black carpet covered with bar handles. 740mm x 510mm x 410mm. 40kg \$2495

**System 400 Wedge:** Full range with JBL 2206 driver & JBL 2426J 1" compression driver with titanium diaphragm, 400W RMS, black carpet covered. 646mm x 438mm x 304mm, 34kg \$2995

**System 1200 Sub:** Bandpass loaded sub-woofer, 2 x JBL 2226 15" drivers, 1200W RMS, black carpet covered, wheels & bar handles. 1245mm x 510mm x 725mm. 75kg \$2695

**AF42:** Low profile two-way wedge, bi-amp, 400W, JBL 2225H, JBL 2426J on JBL 2370. 630mm (L) x 390mm (Total Depth) 33.5kg \$1395

**AF32:** Low profile two-way wedge, passive, 400W, JBL 2225H, G-791 power pack. 630mm (L) x 390mm (Total Depth) 29kg \$1995

**AD15:** Sub-woofer for use with satellites in pro disco applications, 400W, JBL 2225H bass driver. 775mm x 545mm x 482mm 39kg, \$1195

**AD18:** Sub-woofer as per AD15 with JBL 2240H 18" bass driver, 600W. 825mm x 632mm x 520mm 53kg. \$1695

**AD50:** Extremely sensitive sub-bass cabinet, bandpass design, 2 x JBL 2225H 15" drivers. 1020mm x 530mm x 530mm. 68kg. \$2295

**AT-08:** Low frequency theatre system for general purpose reinforcement & cinema use, 2 x JBL 2226H bass drivers. 1010mm x 663mm x 473mm 54kg. \$1795

**JBL. From Jands Electronics, (02) 516-3622. Made in the USA**  
**MR802:** Two-way wedge system, 12" & HF compression driver with

titanium diaphragm, 250W RMS. Size (LxBxD): 441mm x 590mm x 403mm. 24.3kg. \$1495

**MR805:** Two-way wedge system, 15" & HF compression driver with titanium diaphragm, 250W RMS. 505mm x 667mm x 441mm 28.6kg. \$1635

**MR812:** Musical instrument system with M121 12" lead guitar speaker, 300W RMS. 464mm x 413mm x 311mm 19kg \$795

**MR 815:** Musical instrument system with M151 15" bass guitar speaker, 300W RMS. 578mm x 527mm x 311mm 23.6kg \$895

**MR818:** Sub-woofer system, 18" speaker, 250W RMS, \$1695. 1035mm x 714mm x 457mm 42.2kg \$1655

**MR822:** Two-way system, 12" & HF compression driver with titanium diaphragm, 250W RMS. 590mm x 432mm x 279mm 22.7kg \$1495

**MR825:** As per MR822 with 15" & HF compression driver with titanium diaphragm, 250W RMS. 667mm x 495mm x 337mm 26.3kg \$1695

**MR826:** Two-way horn loaded system with 15" & HF compression driver with titanium diaphragm, 250W RMS. 1035mm x 714mm x 457mm 50.8kg \$2195

**MR835:** Three-way system with 15", 8" & HF compression driver with titanium diaphragm, 250W RMS. 714mm x 714mm x 457mm 41.3kg \$2095

**MR838:** Three-way system with 18", 10" & HF compression driver with titanium diaphragm, 250W RMS. 845mm x 714mm x 457mm 45.4kg \$2395

**Sound Power 4716A:** Compact bi-radial system, trapezoid shaped, 2123H 10" high power LF driver & 2416H compression driver on 2342 flare, passive, 300W RMS, 114dB max SPL, 70Hz-19kHz. 520mm x 236mm x 280mm 18kg \$2595

**Sound Power 4726A:** Compact bi-radial system, trapezoid shaped, 2206H 12" high power LF driver & 2426J compression driver on 2344A flare, 600W+70W RMS, 117dB max SPL, 60Hz-20kHz. 646mm x 332mm x 356mm 22kg \$3895

**Sound Power 4726AP:** Passive version of 4726. \$3895

**Sound Power 4728AP:** Compact bi-radial stage monitor system, wedge shaped, specs as per 4726AP. €46mm x 438mm x 302mm 22kg \$3895

**Sound Power 4730A:** High power three-way full range system, trapezoid shaped, 2226H 15" LF driver, 2118H midrange & 2404H tweeter,

119dB max SPL, 35Hz-22kHz. 850mm x 565mm x 440mm 45kg \$4295

**Sound Power 4731A:** High power two-way full range system, trapezoid shaped, 2226H 15" LF driver & 2426J compression driver on 2370A flare, 119dB max SPL, 35Hz-20kHz. 850mm x 565mm x 440mm. 41kg \$4295

**Sound Power 4742A:** Dual 12" direct radiator sub-bass system, 2 x 2206H high power drivers, 1200W RMS, 125dB max SPL, 35Hz-2.8kHz. 500mm x 850mm x 530mm 46kg \$3695

**Sound Power 4745A:** Dual 15" direct radiator sub-bass system, 2 x 2226H high power drivers, 1200W RMS, 128dB max SPL, 32Hz-2.2kHz. 800mm x 850mm x 530mm 65kg \$4295

**Sound Power 4748A:** 18" direct radiator sub-bass, 1 x 2241H high power driver, 600W RMS, 126dB max SPL, 30Hz-2kHz. 800mm x 850mm x 530mm 53kg \$3595

**Sound Power 4750A:** High power two-way full range system, trapezoid shaped, 2 x 2206H 12" LF drivers & 2445J compression driver on 2380A flare, 1200W + 150W RMS, 131dB max SPL, 40Hz-20kHz. 972mm x 620mm x 440mm 60kg \$6595

**Sound Power 4755A:** High power two-way full range system, rectangular shaped, drivers as per 4750A, 131dB max SPL, 32Hz-20kHz. 680mm x 850mm x 530mm 60kg \$7195

**Soundpower 4756A:** Dual 12" high power tri-amplifier system. 680mm x 850mm x 530mm 60kg \$8195

**Sound Power 4770A:** High power two-way full range system, trapezoid shaped, 2 x 2226H 15" LF drivers & 2445J compression driver on 2380A flare, 1200W + 150W RMS, 133dB max SPL, 32Hz-20kHz. 1250mm x 750mm x 533mm 100kg \$7895

**Soundpower 4771A:** Dual 15" high power tri-amplifier system. 1250mm x 750mm x 533mm 100kg, \$8395

**Sound Power 4782A:** Dual 12" triple chamber bandpass sub-pass system, 2 x 2206H high power drivers, 1200W RMS, 126dB max SPL, 28-250Hz. 620mm x 1050mm x 550mm 50kg \$5295

**Sound Power 4785A:** Dual 15" triple chamber bandpass sub-bass system, 2 x 2225H high power drivers, 800W RMS < 130dB max SPL, 25-250Hz. 750mm x 1240mm x 550mm 70kg \$5895

**Sound Power 4788A:** Dual 18" triple chamber bandpass sub-bass system, 2 x 2240H high power

drivers, 1200W RMS, 131dB max SPL, 20-260Hz. 750mm x 1500mm x 800mm 120kg \$7695

**Array 4892:** Compact high power system, trapezoid shaped, 14" neodymium magnet LF driver & 1.5" exit compression driver, special 45° flare, active requires JBL ES52000 controller, 600W + 150W RMS, 50Hz-18kHz. 628mm x 394mm x 362mm 30kg \$6695

**Array 4892A:** Compact high power system, trapezoid shaped, 14" neodymium magnet LF driver & 1.5" exit compression driver, special 90° flare, active requires JBL ES52000 controller, 600W + 150W RMS, 50Hz-18kHz. 628mm x 394mm x 362mm 30kg \$6695

**Array 4893:** Compact high power sub-woofer system, dual 14" LF drivers, requires JBL ES52000 controller, 2 x 600W RMS, 38-400Hz. 1066mm x 394mm x 362mm 45.5kg \$4495

**Array 4894:** Compact high power system, trapezoid shaped, 2 x 14" neodymium magnet LF drivers & 1.5" exit compression driver, special 45° flare, requires JBL ES52000 controller, 1200W + 150W RMS, 46Hz-18kHz. 1066mm x 394mm x 362mm 47.3kg \$8995

**Array 4894-90:** Compact high power system, trapezoid shaped, 2 x 14" neodymium magnet LF drivers & 1.5" exit compression driver, special 90° flare, requires JBL ES52000 controller, 1200W + 150W RMS, 46Hz-18kHz. 1066mm x 394mm x 362mm 47.3kg \$9895

**Control Micro:** Full range point source monitor with 5" woofer, 40W program. 159mm x 152mm x 140mm 1.6kg \$445

**Control 1:** Miniature system, two-way with tweeter designed as mix monitors, video monitors (magnetically shielded cabinets) or background/foreground music systems, 150W program, 70Hz-20kHz. 235mm x 159mm x 143mm 1.8kg \$595

**Control 1Plus:** High performance control monitor. 235mm x 159mm x 143mm 2.5kg \$795

**Control 1AT:** 100V line version of Control 1. 235mm x 159mm x 149mm 2.2kg \$735

**Control 1AW:** All weather version of Control 1 with stainless steel grille. 235mm x 159mm x 149mm 2.2kg \$815

**Control 1CM:** Ceiling mount, 100V line version of Control 1. Below ceiling: 330mm x 254mm x 15mm 3.2kg \$915

**Control 1 Subwoofer:** Extends low frequency response, passive crossover. 290mm x 555mm x 170mm 11.7kg \$645

**Control 5:** Compact control moni-

tor, two-way with 6.5" woofer & 44mm pure titanium tweeter, designed for near-field monitoring or as main monitors where size a consideration, 175W, 75Hz-20kHz. 387mm x 251mm x 229mm 4.5kg \$895

**Control 5 Plus:** 8" woofer, 45Hz-20kHz. 387mm x 251mm x 229mm 4.4kg \$1095

**Control 5 Subwoofer:** Extends low frequency response, passive crossover. 330mm x 595mm x 315mm 19kg \$845

**Control 8SR:** Compact sound reinforcement, two-way with 8" woofer & compression driver/horn HF, 200W, 75Hz-20kHz. 387mm x 251mm x 229mm 5.7kg \$1695

**Control 10:** Three-way monitor with 12" woofer, 5" & pure titanium tweeter; designed for main monitoring, programme replay & video; magnetically shielded; 35Hz-27kHz, 300W. 610mm x 432mm x 305mm 14.5kg \$3495

**Control 12SR:** Two-way sound reinforcement with 12" LF transducer & 1" titanium diaphragm compression driver on 2371 flare, 90° H x 40° V, 55Hz-16.5kHz, 200W. 610mm x 432mm x 305mm 20kg \$4295

**4660A:** Defined coverage system, sensitivity 99dB, 40Hz-15kHz, skewed coverage for ideal performance in rectangular rooms. 2225H bass driver with 2426J bi-radial horn. 1102mm x 607mm x 518mm 70kg \$5095

**4670D:** Standard cinema system, 2 x 2226 LF drivers in 4508 enclosure, 1 x 2446J on 2380 flare with passive crossover & horn mounting bracket. 1289mm x 673mm x 438mm 92kg \$4195

**8330:** 8" three-way surround/foreground music system. 494mm x 481mm x 257mm 14kg \$645

**MEYER. From AUDIO & RECORDING PTY. LTD. Made in USA (02) 316 9935.**

**USW-1** Loudspeaker Driver Complement Two MS-15 U drivers Nominal Impedance - 8 ohms per driver Enclosure - 5cu. ft. vented, Dimensions 31"W x 21 9/16" x 21 5/16" D Weight 115lbs (52kg) \$6557 excl. tax

**MSL-3** Loudspeaker Driver Complement L/F MS-12 (2) H/F MS-2001 VHF Tweeter Array MS-P4 H/F Horn 70 degree modified radial. Enclosure - Vented, horn loaded, multi-ply Finnish birch plywood; Physical Overall Dimensions 21 1/4"W x 56 3/4"H x 30"D; Weight: 265lbs. (121 kg) \$10,218

**UPA-1A** Loudspeaker Response 60-16,000 Hz±4dB; SPL: Con-

tinuous 125dB; Peak 132dB; HF Coverage 80° x 60° L/F Driver MS-12, H/F Driver MS-1401A Horn Modified Radial Enclosure 0.8cu ft vented \$5796

**650-R2 SUBWOOFER** MS-18 (Two) driver Minimum Impedance 8 ohms per driver Enclosure 14cu. ft vented; Finish - Black textured; 30"W x 45"H x 22 1/2"D; 180lbs. (82 kg) \$4663

**PEAVEY - from AUSTRALIS MUSIC GROUP (02) 938 3463; Made in USA**

**DTH SUB** - compact design subwoofer. 2 x 15" Black Widow Kevlar speakers 4 or 8 ohm operation. Dual vented enclosure. 45 Hz - 3 kHz response. 99 dB at 1w - 1 metre sensitivity. Easily portable. Rated = 1400W W 53cm x H. 90cm x D. 65cm 58kg. 4 or 8 ohms \$1795

**DTH-1** Low Mid to Ultra High frequency enclosure. 2 x 13" Scorpien mid drivers, 1 x 4" titanium h/f driver, 1 x 4 element VHF horn. Full Range or biamp operation. 115Hz - 15kHz response. 103dB at 1w - 1m Sens. Rated = 600W W. 53cm x H. 114cm x D. 65cm. 80kg 4 or 8 ohms \$2795

**DTH-2** 2 Way Trapezoidal Design, Full Range/Biampable. 1 x 15" Black Widow Kevlar Speaker, 44" titanium h/f compression driver CH5 horn. Passive Crossover. Interlocking system. 55Hz - 18kHz response. 98dB at 1w - 1mtr. Rated = 800W W. 47cm x H. 82cm x D. 76cm 54kg. 8 ohms \$1995

**DTH-4** Power by Peavey, covered by Chevrolet Motor Co. 3 way enclosure 2 x 15" Black Widow woofer. 1 x 44T compression driver with CH5 Flare. Interlocking, stackability 50Hz to 18kHz response. 98dB at 1w - 1 metre. Sensitivity Rated - 1000W/covered with Chevrolet car carpet in Battleship Grey colour. W. 47cm x H. 117cm x D. 76cm 72kg 4 ohms \$2795

**115 INTERNATIONAL HC** - 3 way, full range/Biampable. 15" Kevlar Black Widow woofer 22T titanium driver, HT 94 Super tweeter, vented enclosure. 55Hz to 20kHz response. 100dB at 1w - 1metre sensitivity. Built in processor Rated = 700W W. 60cm x 77cm x D. 41cm 39kg 8 ohms \$1595

**118 INTERNATIONAL HC** - 3 Way, full range/Biampable. 16" Kevlar Black Widow Woofer 22T titanium driver with CH3 Horn, HT94. Super Tweeter, 48Hz to 20kHz response. 99dB at 1w - 1 metre Sensitivity. Built in pro-

# Lots Of Watts

## Everything in Sound & Lighting: Hire, Sales, Installations and Service

Lots Of Watts Pty Ltd (ACN 055008314)  
47 Brodie Street Rydalmere NSW 2116 Call (02) 638-0302, Fax (02) 638-0331



## SPEAKERS

horn, crossed over with a LOW IMPEDANCE COMPENSATED CROSSOVER(tm) enclosed in high density foamed polystyrene, 175W \$806.00P

**MONITOR 4-4T:** Available in both black and white available with 100 volt line transformer, loaded with a 110 x 110 degree constant directivity flare, features special built in active equaliser preventing diaphragm break up, 60W, \$360.00ea

**MONITOR 8:** 8" carbon fibre woofer coupled with a new 25mm Titanium diaphragm HF driver w/phase plug developed to provide frequency response up to 23,000Hz mounted on a constant directivity flare 110d x 80d, 275W \$850.00ea

**ROSS from CENTRAL MUSICAL INSTRUMENTS PTY. LTD. (03) 315 2244, Made in U.S.A.**

**R-122,** 100 watts, 2-way system with Ross P.A. 12" heavy duty speaker with RZH1 high frequency driver, Imp. 8 Ohms, frequency response 70 - 18.5K, H. 24" x W. 20" x D. 14", 44lbs, \$499.00.

**RZ-122,** 150 watts, 2-way system with Ross premium 12" speaker, CDX 90° x 60° constant directivity horn, RZH2 phenolic compression driver, 22"H x 20"W x 14"D, Imp. 8 Ohms, frequency response 65 - 18.5K, 50lbs, \$689.00.

**R-152,** 200 watts, 2-way system with Ross premium 15" speaker plus RZH1 high frequency driver with CDT horn, 26"H x 25"W x 18"D Imp. 8 Ohms, frequency response 50 - 18.5K, 75lbs, \$899.00.

**RZ-152,** 200 watts, 2-way system with Ross L Series 15" low frequency driver, CDX 90° x 60° constant directivity horn, RZH2 phenolic compression driver, 28"H x 25"W x 18"D, Imp. 8 Ohms, 50 - 18.5K, 74lbs, \$1069.00.

**RCS-153,** 400 watts, 3-way with Ross RCS 300 watt 15" & 1 x 175 watt 10" speaker, RZH2 driver, CDX horn, 38"H x 27"W x 18"D, Imp. 8 Ohms, 48-18.5K, 132lbs, \$1469.00.

**RCS-183,** 400 watts, 3-way system with 1 x Ross RCS series 300 watts 18" speaker, 1 x RZ10M 175 watts 10" speaker, RZH2 driver and CDX horn, 32"H x 27"W x 18"D, Imp. 4 Ohms, 35 - 18.5K, 109lbs, \$1649.00.

**RZ-452,** 400 watts, 2-way with 2 x Ross RZ series 200 watts 15" speakers, 1 x RCSH3 titanium compression driver with new 90° x 50° CDZ horn, 44"H x 25"W x 18"C, Imp. 4 Ohms, 48 - 18.5K, 126lbs, \$1679.00.

**RZ-210,** 250 watts, 2-way system with 2 x Ross 175 watt RZ10M 10" speakers, RZ H2 phenolic compression driver CDX 90° x 60° constant directivity horn, 23"H x 25"W x 15"D, Imp. 4 Ohms, 1kHz - 18.5K, 73lbs, \$1169.00.

**RCS-210,** 250 watts, 2-way system with 2 x Ross 175 watt RZ10M 10" speakers, RCS H3 titanium compression driver with the new 90° x 50° CDZ horn, 23"H x 25"W x 15"D, Imp. 4 Ohms, 1kHz - 18.5K, 73lbs, \$1169.00.

**RCS-115SUB,** 300 watts sub-woofer with 1 x Ross RCS series 15" speakers (w. 3" voice coil, 90oz magnet) impedance 8 Ohms, fre-

quency response 45Hz - 210Hz, 90 lbs, \$929.00.

**RCS-118SUB,** 300 watts sub-woofer with 1 x Ross RCS series 18" speaker, (w. 3" voice coil, 90oz magnet) 41"H x 27"W x 18"D, impedance 8 Ohms, freq. 35Hz - 250Hz, 112lbs, \$1299.00.

**RCS-1812,** 400 watts, 3-way system with 1 x Ross RCS series 18" speaker, 1 x RCS12L 12" speaker, 1 x RCSH3 titanium compression driver with new 90° x 50° CDZ constant directivity horn, 44"H x 27"W x 18"D, Imp. 8 Ohms, frequency response 35 - 18.5K, 138 lbs, \$2299.

**RCS-218HL,** 600 watts, 3-way system with 2 horn loaded Ross RCS series 18" speakers, 1 x RCS12L 12" speaker, 1 x RCSH3 titanium compression driver with new 90° x 50° CDZ constant directivity horn, 42"H x 29"W x 25"D, Imp. 4 Ohms, frequency response 35Hz - 18.5K, 215 lbs, \$3699.00.

**RZ-110M Monitor,** 175 watts, 10" 2-way, Ross 10" RZ series, speaker and RZH1 high frequency driver, CDX 90° x 60° constant directivity horn, 16"H x 20"W x 17"D, Imp. 8 Ohms, freq. 75 - 18.5K, 49lbs, \$679.00.

**RZ-122M Monitor,** 150 watts, 12" 2-way, Ross 12" premium speaker and RZH2 phenolic compression driver, 22"H x 20"W x 17"D, Imp. 8 Ohms, freq. 60 - 18.5K, 49lbs, \$749.00.

**RZ-152M Monitor,** 200 watts, 15" 2-way, Ross 15" premium speaker, RZH2 phenolic compression driver, CDX 90° x 60° constant directivity horn, 32"H x 20"W x 17"D, Imp. 8 Ohms, freq. 55 - 18.5K, 68lbs, \$949.00.

**RCS-152M Monitor,** 300 watts, 15" 2-way, Ross 15" RCS series speaker, RZH3 titanium compression driver with new CDZ horn, 32"H x 29"W x 17"D, Imp. 8 Ohms, freq. 50 - 18.5K, \$1199.00.

**R-24 Monitor,** 50 watts, 2 x 5" Ross speakers with attenuator control, mic stand mountable, nominal Imp. 8 Ohms impedance attenuator from 16 Ohms to 4 Ohms, \$229.00.

**R-28,** 75 watts, 2 x 8" Ross speakers with HF01 high frequency piezo driver, Imp. 8 Ohms, mic stand mountable both horizontally and vertically, \$369.00.

**TOA from AWA DISTRIBUTION (02) 888 9000, Made in JAPAN**  
**SL120 -** Compact Integrated 2 way speaker system 12" Woofer, 80W RMS, 8 ohms with a 95dB Sensitivity. W. 380 x H.520 x D. 310mm. Weight 13 kg. \$429.00.

**SL150 -** Compact Integrated 2 way speaker system, 15" Woofer, 80W RMS, 8 ohms with a 98dB Sensitivity. W. 460 x H. 600 x D 310mm, Weight 16kg. \$479.00.

**SL221 -** Two Way Twin Woofer system. 12" & 10" Woofers. Constant directivity with Piezo Driver. 80 W RMS, 96dB, W. 380 x H. 846 x D. 310mm, Weight 20kg. \$809.00.

**SL150M -** Two Way integrated floor monitor. 15" Woofers, 80W RMS, 8 ohm with 98 dB Sensitivity. W. 446 x H. 452 x D. 573mm. Weight 14kgs. \$569.00.

**YORKVILLE - from DYNAMIC MUSIC (02) 939 1299 - made in**

**Canada and New Zealand**  
**Ex - 2000 -** Full Range Cabinet 2 x 15" RCF 1 x 2" Compression Driver, 1" Throat & Horn 1 x Tweeter Biampable with Horn & Circuit Breaker Protection, 1000 watt, 85kg, H.114cm x W.67cm x D.46cm, \$3995ea.  
**Ex 401** 1 x 15" RCF 1" Compression Driver & Horn 400 watt Full Protected 32kg H. 69cm x W. 55cm x D. 41cm Ideal for Duo etc.\$1995  
**Ex 350** High Level Vocal Cabinet 350 watt 1 x 12" Driver & 1" Horn. 27kg. H.57cm x W.44.5cm x D.36.8cm \$1795

### COMPONENTS

**AUDIO & RECORDING PTY. LTD. (02) 316 9935 RADIAN, U.S.A. Compression Drivers**

**4450-8(16)** Compact comp driver, 1" throat, 1.75" diaphragm, 80Wpeak \$251.22  
**4450A-8(16)** as 4450, with extended HF response, 80W peak \$251.22

**4455-8(16)** Standard Comp driver, 1" Throat, 1.75" diap, 100W peak \$329.72  
**4455A08(16)** as 4455, with extended HF response, 80W peak \$329.72

**4375-8(16)** Large Comp driver, 1.4" Throat, 3" Diaphragm, 150W peak \$659.45  
**4750-8(16)** Large Comp driver, 2" Throat, 3" Diaphragm, 150W peak \$659.45

**Fibreglass Horns**  
**FH500:** 500Hz \$310.88  
**FH800:** 800Hz \$244.94  
**FH820:** 800Hz \$361.13  
**FH860:** 800Hz \$361.13  
**FH1200:** 1200Hz \$194.69  
**FH1220:** 1200Hz \$329.72

**Coaxial Speakers**  
Extended range series Cast frame.....or High output Series Cast frame

**5008 8" 150W 89.6dB Sens** \$471.03  
**5208 8"100W, 95dB** \$471.03  
**5010 10" 200W 91.7dB** \$516.39  
**5210 10"150W, 96dB** \$516.39  
**5012 12" 300W 93.6dB** \$596.64  
**5212 12" 200W, 96dB** \$596.64

**508 8" 150W 89.6dB** \$439.63  
**508/2 8" 100W, 95dB** \$439.63  
**510 10" 200W 91.7dB** \$471.03  
**510/2 10" 150W, 96dB** \$471.03  
**512 12" 300W 93.6dB** \$533.84  
**512/2 12" 200W, 96dB** \$533.84

**Replacement Diaphragms**  
**175-8(16)** For Emilar EA175, EC175, ECH175, EK175 \$96.00  
**1320-8(16)** For Emilar EC320, EC320B \$109.45  
**1225-8(16)** For JBL L85, 376, 2420, 2421, 2425, 2427, 247C \$140.80

**C1225** Adaptor Kit for 1225 to fit JBL 2415 and 2416 drivers \$25.46  
**1245-16** For JBL 375H, 2440 2441, 2445, 2446, 245C \$153.60  
**1228(16)** For Altec 604, 802 806, 808, 902, MR902, 904, 908, 909, 4 TOA

**1450PB-8(16)** For Radian 4450, 4455 \$128.00  
**1450-8(16)** For Radian 500, 500/2, 5000, 5200 Series Coaxial speakers \$121.60  
**1750PB-8(16)** For Radian 4735, 4750 \$153.60

**ETONE PTY. LTD. (02) 533 1911**

**Model 267** 300mm Speaker P.A. Bass/Mid 300 watts \$448.00  
**Model 806** 380mm Speaker P.A. Bass 600 watts \$591.00  
**Model 785** 460mm Speaker P.A. Bass 400 watts \$699.00  
**Model 267** 300mm Speaker PA Bass/Mid 200 watts \$321.00  
**Model 451** 380mm Speaker PA Bass or Bass Guitar 150 watts \$304.00

**Model 484** 380mm Speaker PA Bass or Bass Guitar 300 watts \$480.00  
**Model 805** 380mm Speaker PA Bass 300 watts \$591.00  
**Model 131** 250mm Speaker - PA Bass/Mid or Bass Guitar Quad Box 100 watts \$161.00

**Model 511** 300mm Speaker - Instrument 50 watts \$120.00  
**Model 231** 300mm Speaker - Instrument 80 watts \$162.00  
**Model 246** 300mm Speaker - PA Extended Range. Ideal for use with Piezo Tweeter 100 Watts \$216.00

**CELESTION BX SERIES P.A. from AMBER TECHNOLOGY (02) 975 1211**

**BX12 - 2560 - 12"** Driver with 2.5" Edge-Wound Voice Coil 250 watt Cont/500W Peak 97dB sens, 60Hz-4KHz, 8 ohms \$389.00  
**BX12-3075 - 12"** with 3" Edge-Wound Voice Coil 300W Cont/600W Peak, 98dB Sens, 45Hz-3kHz, 8 ohms \$535.00  
**BX12-4085 - 12"** with 4" Edge-Wound Voice Coil 600W Cont/1200 Peak 97dB Sens, 38Hz-2kHz, 8 ohms \$799.00

**BX15-2560 15"** Bass Driver 2.5" Edge-Wound Voice Coil 250W Cont/500W Peak 98dB Sens, 45Hz-4KHz, 8 ohms \$425.00  
**BX15-3075 15"** Bass Driver 3" Edge-Wound Voice Coil 300W Cont/600W Peak 99dB Sens, 35Hz-3kHz, 8 ohms \$615.00  
**BX15-4085 15"** Bass Driver 4" Edge-Wound Voice Coil 600W Cont/1200W Peak 97dB Sens, 38Hz-2kHz, 8 ohms \$799.00

**BX15-4085HS 15"** Bass Driver 4" Edge Wound Voice Coil 400W Cont/800W Peak 100 dB Sens, 35Hz-3kHz, 8 ohms \$849  
**BX18 - 3075 18"** Bass Driver 300W Cont/600W Peak 99dB Sens, 30Hz - 500Hz, 8 ohms \$725.00  
**BX18 - 3085 18"** Bass Driver 400W Cont/800W Peak 100dB Sens, 30Hz - 500Hz, 8 ohms \$825.00

**BX18 - 4085 18"** Bass Driver 600W Cont/1200W Peak 99 dB Sens, 30Hz - 300Hz, 8 ohms \$940.00  
**CELESTION HIGH FREQUENCY DRIVER UNITS**

**"Bullet"** Tweeter - 50 Watts Cont. Program, 3.5 kHz - 20kHz, 109dB Sensitivity, Titanium Diaphragm, 8 ohms 60° Disp. @ 5kHz \$455.00  
**"Slot"** Tweeter - 50 Watts con. Program, 3.5 kHz - 20kHz, 105dB Sensitivity, Titanium Diaphragm, 8 ohms, 120°H x 60°V Dispersion @ 5kHz \$495.00

**DCR1000** Compression Driver - 1" Throat, 65 Watts (Pink Noise) 700Hz - 8kHz, 103dB Sensitivity, 8/16 ohms \$325.00  
**RH500** Radial Horn Flare - 90° x 40°, 1" Throat \$299.00  
**HF50 -** Ring Style Tweeter, 25

watts (Pink Noise) 2kHz - 16kHz, 103 dB Sens, 8/16 ohms \$150.00  
**HF50X -** As per HF50 but with integral 3kHz Cross-Over \$195.00  
**RTT50 -** 70° X 45° Horn Style Tweeter, 25 Watts (Pink Noise) 1.5kHz - 15kHz, 101 dB Sens, 8/16 ohms \$179.00  
**RTT50X -** As per RTT50 but with integral 2kHz Cross-O ver \$225.00

**CELESTION "K-SERIES"**  
**KS-30 - 5",** 30 watts, 100Hz - 15kHz, 90dB Sens, 8 ohms \$105.00  
**K8-80 - 8",** 50 watts, 80Hz - 7kHz, 95dB Sens, 4/8/16 ohms \$145.00  
**K10-70 - 10",** 70 Watts, 60Hz - 7kHz, 95 dB Sens, 8 ohms \$149.00  
**K10T-200 - 10",** 200 Watts, 50Hz - 6kHz, 97dB Sens, 4/8/16 ohms \$185.00  
**K12L-50 - 12",** 50 watts, 50Hz - 5kHz, 95 dB Sens, 8 ohms \$129.00K12S-100 - 12", 100 watts, 50Hz - 6kHz, 96dB Sens 8 ohms \$149.00  
**K12T-100 - 12",** 100 Watts, 50Hz - 6kHz, 97dB Sens, 8/16 ohms \$155.00  
**K12T-150 - 12",** 150 watts, 50Hz - 5kHz, 97 dB Sens 8 ohms \$189.00  
**K12H-100 - 12",** 100 watts, 50Hz - 6kHz, 98 dB Sens, 8/16 ohms \$219.00  
**K12H-100TC - 12",** 100 watts, 50Hz - 10kHz, 97dB Sens, 8/16 ohms (Twin-Cone) \$225.00  
**K12T-200 - 12",** 200 Watts, 50Hz - 4kHz, 98dB Sens, 4/8/16 ohms \$229.00  
**K15-100 - 15",** 100 watts, 35 Hz-4 kHz, 96 dB Sens, 4/8 ohms \$219.00  
**K15T-200 - 15",** 200 watts, 30Hz - 4kHz, 95 dB Sens 4/8 ohms \$265.00  
**K15H-200 - 15",** 200 Watts, 30Hz - 4kHz, 98 dB Sens, 4/8/16 ohms \$289.00  
**K18-300 - 18",** 300 Watts, 30Hz - 1 kHz, 97 dB Sens, 8 ohms \$525.00

**EV from MARK IV AUDIO (Australia) (02) 648-3455. Woofers**  
**DL10X 10"** woofer 115 - 5kHz 300w, 98dB \$720  
**DL12X 12"** woofer 58-5.2kHz 300w, 98dB \$761  
**DL15X 15"** woofer 45-3.2kHz 400w, 101dB \$921  
**DL15W 15"** woofer 38-2.8kHz 400w, 97dB \$881  
**DL18X 18"** woofer 40-3kHz 400w, 97dB \$1323  
**DL18W 18"** woofer 34-3.2kHz 400w, 95dB \$1323  
**EVX-150A 15"** woofer 40-1.8kHz 600w, 96dB \$953  
**EVX-180A 18"** woofer 37-1.5Hz, 600w, 96dB \$1544

**H/F Compression Drivers**  
**DH-1A,** 2" throat, 500-20kHz, 114dB, 75W \$1509  
**DH3,** 1" throat, 5kHz - 20kHz, 111dB, 30W \$411  
**H/F Horns**  
**HPT Horns, suit DH-1.**  
**HPT 42,** 40 x 20 \$441  
**HPT 64,** 60 x 40 \$372  
**HPT 94,** 90 x 40 \$372  
**Small Format for 2" drivers**  
**HP64 60 x 40 \$469**

**HP94 90 x 40 \$469**  
**Large format horns, 2" drivers**  
**HP4020 40 x 20 \$2601**  
**HP6040 60 x 40 \$1885**  
**HP9040 90 x 40 \$1885**  
**Medium format horns, 2" drivers**  
**HP420 40 x 20 \$881**  
**HP640 60 x 40 \$757**  
**HP940 90 x 40 \$757**  
**HP1240 120 x 40 \$851**

**JBL Cone Transducers-JANDS (02) 516 3822**  
**2118H/J:** 8" high power, midrange/low frequency, 200W, sensitivity 97dB, \$395  
**2123H:** 10" high power, midrange, 250W, sensitivity 101dB \$615  
**2142H:** 12" co-axial, titanium dome HF unit, 90W, sensitivity 97dB \$695  
**2152H:** 12" co-axial with 2416H HF compression driver, 150W, sensitivity 102dB \$1245  
**2155H:** 15" co-axial with 2416H HF compression driver, 150W, sensitivity 102dB \$1445  
**2202H:** 12" high power, midrange, 300W, sensitivity 99dB \$745  
**2206H:** 12" high power with Vented Gap Cooling, low frequency, 600W, sensitivity 95dB \$695  
**2226H/J:** 15" high power with Vented Gap Cooling, low frequency, 600W, sensitivity 97dB \$695  
**2235H:** 15" Medium efficiency, extended bass, 300W, sensitivity 93dB \$825  
**2241H/G:** 18" high power with Vented Gap Cooling, low frequency, 600W, sensitivity 98dB \$1095  
**2245H:** 18" medium efficiency, extended bass, 600W, sensitivity 95dB \$1145

**JBL Compression Drivers**  
**2402H (Bullet):** Ultra high frequency driver/conical horn, disp 40° conical, 40W, sensitivity 110dB, lowest recommended crossover, 3kHz \$595  
**2405H (Slot):** Ultra high frequency driver/rectangular horn, 40W, sensitivity 105dB, lowest recommended crossover, 7kHz \$645  
**2426H/J:** 1" throat, titanium diaphragm, 70W above 800Hz, 100W above 1.2kHz, sensitivity 110dB, minimum recommended crossover 800Hz \$775  
**2446H/J:** 2" throat, titanium diaphragm, Coherent Wave phasing plug, 100W above 500Hz, 150W above 1kHz, sensitivity 111dB, minimum recommended crossover 500Hz \$1425  
**2447:** 1.5" throat, titanium diaphragm, Coherent Wave phasing plug, 100W above 500Hz, 150W above 1kHz, sensitivity 111dB, minimum recommended crossover 500Hz \$2345  
**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-

**2485J:** 2" throat, phenolic diaphragm, waterproof rear transformer housing, 120W above 300Hz, sensitivity 111dB, mini-



# Rockard

**FINALLY! THE PAINT THE ENTERTAINMENT INDUSTRY NEEDS, IS HERE!**

**ALL ENQUIRIES WELCOME**

Phone: (02) 550-3823  
Toll Free: 008 804-994  
Fax: (02) 550-6919

- Water based
- Various textures achievable
- Touch dry in 30 minutes
- One coat only required

mum recommended crossover 500Hz.\$1545  
**2490H:** 3" throat, midrange compression driver with titanium diaphragm, 200W above 250Hz, sensitivity 115dB, minimum recommended crossover 250Hz.\$1895  
**2451:** 1.5" throat, titanium diaphragm, Coherent Wave phasing plug, neodymium rare earth magnet structure, 100W above 500Hz, 150W above 1kHz, sensitivity 111dB, minimum crossover frequency 500Hz.\$2695  
**JBL Horns**  
**2344A:** Bi-radial 1" throat horn, 90° H x 100°V, 800Hz.\$645  
**2360A:** Bi-radial, constant coverage horn, 90° H x 40° V, minimum recommended crossover 350Hz.\$1965  
**2385A:** As per 2360A but 60° H x 40° V.\$1965  
**2366A:** As per 2360A but 40° H x 20° V, crossover 300Hz.\$2355  
**2370A:** Bi-radial, flat-front horn, uniform on/off axis frequency response in horizontal plane, 25mm throat, minimum recommended crossover 630Hz, 90° H x 40° V, \$295  
**2380A:** Bi-radial, flat front horn, uniform on/off axis frequency response in vertical and horizontal planes, 49mm throat, 90° H x 40° V, minimum recommended crossover 500Hz.\$375  
**2382A:** As per 2380A but 120° H x 40° V.\$530  
**2385A:** As per 2380A but 60° H x 40° V.\$345  
**2386:** As per 2380A but 40° H x 20° V, minimum recommended crossover 400Hz.\$665  
**2393:** Optimised aperture bi-radial horn, 60° H x 40° V, 3" throat, minimum recommended crossover 300Hz.\$3435  
**2394:** Optimised aperture bi-radial horn, 40° H x 30° V, 3" throat, minimum recommended crossover 300Hz.\$5995  
**JBL MI SPEAKERS**  
**E110-B:** 10" for lead or rhythm guitar, piano, vocals, line-array, 150W, sensitivity 98dB, 3" voice coil, \$695  
**E120-B:** 12" for guitar, electric piano, organ, vocals, 300W, sensitivity 103dB, 4" voice coil, 8 or 16 ohms.\$845  
**E130-B:** 15" for guitar, electric piano, organ, vocals, 300W, sensitivity 105dB, 4" voice coil.\$935  
**E140-B:** 15" for electric bass, low frequency organ, 400W, sensitivity 100dB, 4" voice coil.\$895  
**E145-B:** 15" for electric bass, subwoofer, low frequency rein-

forcement, 300W, sensitivity 98dB, 4" voice coil.\$945  
**E155-B:** 18" for electric bass, subwoofer, low frequency reinforcement, 600W, sensitivity 100dB, 4" voice coil, 8 or 4 ohms.\$1345  
**QUAM-NICHOLS from PRODUCTION AUDIO SERVICES P/L (03) 852 0000 made in U.S.A.**  
**4C10PA** (Background music speaker) 50Hz - 15kHz, 5" with single foam surround, power handling 18W (RMS). Sensitivity 91dB. Nominal impedance 8 Ohms. \$54  
**8C10FEPA** (Background music speaker) 30Hz - 20kHz, 8" with dual foam surround power handling 18W (RMS). Sensitivity 92dB. Nominal impedance 8 Ohms. \$50.50  
**8C10FECA** (Background music speaker) 30Hz - 30kHz, 8" with foam surround and piezo tweeter, power handling 15W (RMS). Sensitivity 92dB. Nominal impedance 8 Ohms. \$86  
**RCF LAB SERIES LOUDSPEAKERS**  
**L6L380K:** 6.5" Carbon Fibre Cone 150W, 97dB; 200Hz-9kHz. \$192.55  
**L8L750:** 8" 130W; 101.5dB; 150-4kHz \$278.33  
**L10/750YK:** 10"; 400W; 101dB; 70Hz-9kHz. \$386.80  
**L12P540:** 12"; Radiated basket; 400W; 97dB; 50 - 2kHz \$439.08  
**L12P11WK:** 12"; 450W; 102dB; 46Hz-5kHz. \$523.67  
**L12P110K:** 12"; 500W; 101dB; 45Hz-3kHz. \$541.28  
**L12P400K:** 12"; 500W; 94dB; 34Hz-4kHz. \$390.77  
**L15P200AK:** 15"; 700W; 95dB; 29Hz-3kHz. \$390.00  
**L15L600K:** 15"; 700W; 98dB; 29Hz-3kHz. \$588.98  
**L15/554K:** 15"; 500W; 102dB; 33-4kHz. \$577.05  
**L15S80:** 5"; Radiated basket; 600W; 99.5dB; 42 - 2K5 \$629.36  
**L15P540:** 15"; Radiated basket; 400W; 98dB; 50 - 2kHz \$482  
**L18/851K:** 18"; 1000W; 99dB; 39Hz-3kHz. \$730.98  
**L18P200K:** 18"; 900W; 97dB; 22Hz-3kHz. \$781.51  
**L18S800:** 18"; Radiated Basket; 600W; 99.5dB; 39 - 2kHz \$775.91  
**PRO SERIES LOUDSPEAKERS**  
**L10P15K:** 10"; 100W; Twin Cone 99dB; 81Hz 15kHz. \$199.94  
**L12/31K:** 12"; 100W; Twin Cone 99.5dB; 51Hz - 16kHz. \$242.55  
**L10/61K:** 10"; 250W; 97dB; 85Hz-7kHz. \$264.13  
**L10/581K:** 10"; 200W; 101dB; 87Hz-

7kHz. \$295.37  
**L10/568H:** 10"; 200W; 97.5dB; 70-3kHz \$314.68  
**L12/568H:** 12"; 250W; 98dB; 58Hz-5kHz. \$240.00  
**L12/564K:** 12"; 250W; 98dB; 55Hz-5kHz. \$283.44  
**L12/565K:** 12"; 250W; 98dB; 55Hz-5kHz. \$320.37  
**L12/544K:** 12"; 400W; 97dB; 40Hz-4kHz. \$436.23  
**L12/854K:** 12"; 350W; 101dB; 55Hz-5kHz. \$307.86  
**L15/541K:** 15"; 500W; 97dB; 31Hz-3kHz. \$460.10  
**L15/542K:** 15"; 500W; 98dB; 36Hz-6kHz. \$458.40  
**L15/854K:** 15"; 350W; 101dB; 50Hz-6kHz. \$250.00  
**L15P801K:** 15"; 450W; 102.5dB; 40Hz-4kHz. \$458.68  
**L18P751K:** 18"; 500W; 102dB; 29Hz-3kHz. \$599.26  
**COAXIAL SERIES LOUDSPEAKERS**  
**L8CX8:** 8"; 40W; 97dB; 40Hz - 20kHz. \$172.11  
**L10CX1AK:** 10"; Ferro Fluid; 140W; 95dB; 68Hz-18kHz. \$389.09  
**L12CX2K:** 12"; Ferro Fluid; 180W; 90dB; 60Hz-18kHz. \$478.27  
**LAB SERIES HIGH FREQUENCY**  
**N481K:** 1"; 120W; 500Hz-20kHz. \$369.78  
**N482K:** 1"; Titanium/Kapton/Edge wound; 90W; 500Hz-20kHz. \$424.88  
**N681:** 1"; Titanium/Kapton/Edge wound; 100W; 500Hz-20kHz. \$519.74  
**N980:** 2"; Carbon Fibre; 250W; 400Hz-20kHz. \$550.00  
**HIGH FREQUENCY DRIVERS**  
**N281:** 1 3/8"; Nomex; 100W; 500Hz-18kHz. \$194.26  
**TW101:** 1 3/8"; 450Hz-16kHz. \$236.29  
**N580:** 120W; 1"; 450Hz-20kHz. \$349.89  
**CONSTANT DIRECTIVITY HORNS**  
**H6040:** 2"; Throat flange mounting, 60 x 40. \$270.95  
**H9040:** 2"; Throat flange mounting, 90 x 40. \$306.17  
**H9041:** 1"; Throat flange mounting, 90 x 40. \$128.94  
**PROFESSIONAL HORNS**  
**H2006:** 1 3/8"; Thread, 110 x 180-10dB/80 x 120-6dB. \$35.21  
**H3709:** 1"; Flange mount, 120 x 110-10dB/90 x 80-6dB. \$117.58  
**PROFESSIONAL TWEETERS**  
**N252:** 150W; 102.5dB; 1kHz-18kHz. Wide Coverage. \$163.58  
**N255:** 150W; 103dB; 1.5kHz-18kHz. Constant Directivity. \$168.12  
**TW105:** 150W; 102.5dB; 2.4kHz-20kHz. \$131.22  
**TW116:** 100W; 99dB; 1kHz-20kHz. \$253.33

## FRESNEL SPOTS All prices are EXCLUDING SALES TAX.

	WATTAGE	LAMP TYPE	Beam Spread	Typical throw	Weight (kg)	Length	Width	Height	Frame size	Price \$	Stock?
<b>PROLITE MANUFACTURING P/L</b>											
PRF-5	500/650	T25/27	12/55	5-12	3.6	295	228	282	155	176	YES
PF6-F	500/600	T25/27	12/55	5-12	4.3	295	228	282	155	191	YES
PR10-F	1000/1200	T19/29	12/55	7-18	4.1	315	253	330	180	305	YES
PR12-F	1000/1200	T19/29	12/55	7-18	6.1	315	253	330	185	345	YES
PR22-F	2000/2500	CP72/91	12/60	15-50	7.5	375	303	453	230	410	YES
<b>COEMAR DE SISTI AUST.</b>											
<b>TAS:</b>											
SPOT 300/500 ECC	300/500	GY9.5	9-38	4-10	5	295	225	180	133	150	YES
SPOT 300/500 ECC F	300/500	GY9.5	9-27	4-12	4	295	225	180	133	178	YES
SPOT 650/1000 ECC	650/1000	GX9.5	7-60	4-16	5.5	380	260	300	165	195	YES
SPOT 650/1000 EC3F	650/1000	GX9.5	12-52	4-15	4.5	330	260	300	165	210	YES
SPOT 650/1000	650/1000	GX9.5	7-60	4-16	5.5	409	254	300	165	275	YES
SPOT 650/1000F	650/1000	GX9.5	12-52	4-15	4.5	341	254	300	165	285	YES
<b>COEMAR</b>											
CORTO E	300/500	GY9.5	8-50°	3-10	3	225	204	156	120	165	YES
CORTO E F	300/500	GY9.5	11-40°	3-9	2.8	225	204	156	120	190	YES
SOLAR 300/500/650	300/500/650	GY9.5	9.5-38°	4-10	3.2	295	203	175	133	188	YES
SOLAR 300/500/650F	300/500/650	GY9.5	9-27°	5-12	3.2	295	223	175	133	222	YES
SOLAR 650/1000	650/1000	GX9.5	10-41	5-15	3.7	305	223	175	133	203	YES
SOLAR 650/1000F	650/1000	GX9.5	10-28	10-28	3.7	305	223	175	133	237	YES
PASSO 650/1000	650/1000	GX9.5	5.5-58	5-18	6	435	290	240	200	271	YES
PASSO 650/1000F	650/1000	GX9.5	8.5-50	5-17	6	435	290	240	200	320	YES
PASSO 2000	2000	GY16	5-60	5-25	6.2	435	290	240	200	320	YES
PASSO 2000F	2000	GY16	11-52	5-20	6.2	435	290	240	200	360	YES
PRIMO HQ1 70F	70	HQ1-70	11-40	4-10	2.2	225	202	245	120	787	NO
PRIMO HQ1 150F	150	HQ1-150	11-40	4-12	2.2	225	202	243	120	817	NO
<b>BYTECRAFT PTY LTD</b>											
<b>STRAND LIGHTING</b>											
Minim F	300/500	CP81	13-40	5m	2.5	216	174	205	125	213	YES
Quartet F	500/650	T26	10-40	6m	3.1	286	243	288	150	233	YES
Prélude F	650	T26	9-40	3m	3.5	225	230	270	150	333	YES
Cantata	1200	T29	7-50	15m	5.8	380	360	460	185	488	YES
Alto F	2500	CP91	7-62	20m	9.7	380	360	460	245	955	YES
Castor MO	5000	CP94	10-53	14m	13.5	356	420	670	320	1564	YES
Pollux MO	5000	CP29	12-59	17m	16.5	361	508	725	405	2027	YES
<b>HERKES</b>											
<b>SELECCN</b>											
MINIFRESNEL	650	T27	8-55	4-12	3	268	210	245	125	228	YES
MINIFRESNEL	500	T25	8-55	4-11	3	268	210	245	125	228	YES
SF1200 7"	1200	T29	7-56	6-20	5	320	280	320	185	480	YES
SF1200 7"	1000	T19	7-56	6-18	5	320	280	320	185	480	YES
SF2500 8"	2500	CP91	7-60	6-28	8.5	400	365	450	245	790	YES
SF2000 8"	2000	CP72	7-60	6-25	8.5	400	365	450	245	720	YES
SF2500 10"	2500	CP91	8-60	6-30	9	400	365	450	245	860	YES
SF2000 10"	2000	CP72	8-60	6-29	9	400	365	450	245	860	YES
<b>LIGHTMOVES TECHNOLOGY</b>											
<b>TEATRO</b>											
PUNTO F500	500	T25	11-40°	9	2.8	255	204	255	120	280	YES
COMMA F650	650	T26	9-27°	12	3.5	295	223	294	133	260	YES
TIPO F1000	1000	T19	8.5-50	15	4.7	340	252	295	165	460	YES
SPAZIO F1000	1000	T19	8.5-50	17	5.2	435	290	400	200	410	YES
TRATTC 2 F1200	1200	T29	6.35	18	5.5	372	285	420	165	620	YES
ACUTO F2000	2000	CP72	8-53°	30	10.6	462	365	550	245	1060	IDENT
SPAZIO F2000	2000	CP72	11-52	20	5.2	435	200	400	200	490	YES
<b>(076) 327 312 SEAN CAIRNS Made in Australia</b>											
<b>(03) 487 3666 PETER KEMP Made in Italy</b>											
<b>(03) 587 2555 DURHAM RITCHIE Made in U.K.</b>											
<b>(02) 316 3133 WAYNE KEL.ETT Made in New Zealand</b>											
<b>(02) 566 0000 JONATHAN CIDDOFF Made in Italy</b>											

## APOGEE ARTIST SYSTEM 8000

Power, Clarity & Bottom End  
 from a 3-way System like  
 you've NEVER heard before

- \* Wide Frequency Response 38 Hz - 17 kHz ± 3 db
- \* Extremely High Output Power for Largest Venues
- \* Accurate & Natural Reproduction of Voice & Music
- \* Processor Incorporates Built-in Protection, Crossover, Tonal Balance Adjustment and Turn on/off Muting
- \* Trapezoidal Enclosure for Ultimate Arrayability
- \* Equipped with Aeroquip Style Rigging Points

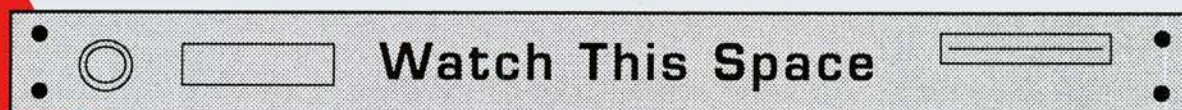
ESA Audio, 703 Heatherton Road,  
 Clayton South, Victoria.  
 Ph: (03)562-4605. Fax: (03) 547-6683.

**Artist**  
 Systems

APOGEE SOUND is distributed exclusively by ESA Audio

# Roland S SERIES SAMPLING TECHNOLOGY

*For Under \$4,500?  
And a Huge Sample Library too?*



 **Roland**

Roland Corporation Aust. Pty Ltd  
38 Campbell Avenue DEE WHY 2099  
Ph: (02) 982 8266 Fax: (02) 981 1875

# MUSIC & TECHNOLOGY

## Music Show Opinions

As normal hearing returns to the trade after the temporary tinnitus brought on by the AIMS show at Darling Harbour, Jennifer Temm asks a cross-section of exhibitors if they were satisfied with the turnout, how they approached their marketing and how much it all cost.

### John Fitzpatrick - Amber Technology:

It was good. From our point of view, it was the first music show we've done in about 10 years, mainly because most of our products go to the professional market but in the last 12 months we've taken on a few more dealer oriented products. We achieved what we were looking for, which was to get exposure for our new products. My only problems was with the chaos of noise. People were holding demonstrations without regard to what was going on around them and they were useless because you couldn't hear what was going on. We were satisfied with it though. It was more of an exposure thing for us, we weren't looking to write orders.

### John Brownrigg - Aust. Music Supplies

It was very good, particularly the trade days. We were heads down and bums up right through. I have no complaints at all except for the noise factor, but that's what we all sell.

We sent out our normal invitations to dealers. We did advise our dealers particularly, and we had Tommy Emmanuel and Frank Gambale on the stand.

Cost - Scary amounts, suffice it to say. On advertising, minimal. No glossy ads or anything like that, just phone calls and mail.

### David Croxton - Australian Audio Supplies

I found there was plenty of optimism at the show and generally it was good all round to exhibit new products. We found it quite effective.

Cost - All up, probably around \$5000. \$1250 of that would have been on advertising; we took a full page ad in the main show catalogue.

(continued over >)

## What is MIDI & how does it work?

part six

### MUSICAL INFORMATION TRANSMITTED VIA MIDI

#### (1) MIDI Channel and Mode

##### 1. Channel (continued)

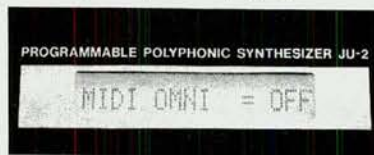
So that if the master keyboard is sending on MIDI ch.1, only synth 1 will respond. Similarly, if the master is on MIDI ch.2, only synth 2 will respond. Even though synth 1 is obviously receiving the information, it cannot respond because it is switched to a different channel. In other words, for this system to work correctly, YOU MUST CAREFULLY SELECT MIDI CHANNELS.

With this concept of MIDI channels, it is then possible to play 16 different parts on 16 instruments, via a sequencer, and all originally down one MIDI cable.

##### 2. Modes

As we mentioned before, it is necessary to use the same MIDI channel if a master and a slave are to play in unison, but there is another way

to make the slave receive the information. This mode is called "OMNI ON", and it forces the slave to respond to all 16 MIDI channels at once. In a simple set-up of one master and one slave this becomes very useful, because the slave doesn't care which channel the master is using, it will "hear" them all. However, when using a sequencer playing on a variety

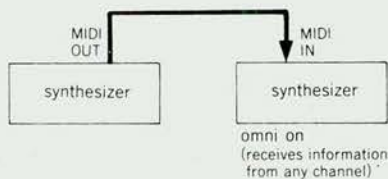


↑ "omni off" on display

of different channels, it is impossible to separate the information. So then the slave must be in the OMNI OFF mode, so that it will only receive information on the chosen channel.

There are also "POLY" and "MONO" modes in MIDI, which decide whether the information is to be sent as "monophonic" information (one note), or "polyphonic" information (more than one note). Keyboard instruments such as pianos and synths usually use the POLY mode. MONO mode is mainly used for MIDI guitar controllers. (continued next month)

Re-printed from the MIDI Guidebook, courtesy of Roland Corporation.



**BBE® gives your music the sound it deserves.**

"It makes just about everything sound marvelous with virtually no effort . . . no kidding!"  
*Keyboard Magazine*

**BBE® puts a professional edge on your home recordings.**

"The effect transfers beautifully to tape . . . works great for guitar and keyboardists who want to restore that wonderful sound they got in the studio."  
*Music Technology Magazine*

**"With BBE® you're in Aural Heaven."**

*Music and Sound Output Magazine*

"Increases intelligibility, restores harmonics, and improves clarity . . . most impressed with the effect on instrumental tracks of all sorts . . . recaptured the natural sparkle and punch . . . an indispensable tool for the audio professional."

**BBE 862**  
*Mix Magazine*

- ▼ 10K ohms input; 600 ohms output
- ▼ +24dBu clip point
- ▼ XLR and 1/4" Tip-Ring-Sleeve Balanced/Unbalanced

- SONIC MAXIMIZERS
- INSTRUMENT PRE-AMPS
- AUDIO RESTORATION SYSTEMS
- CAR AUDIO MAXIMIZERS

Call Us Now For A Demo In Your Area

Distributed by:  
**BBE F. Payton & Son**

12 Waltham St., Artarmon, N.S.W. 2064  
Phone: (02) 439 1822 Fax: (02) 439 1553  
Melbourne Brisbane Perth  
(03) 704 9632 (07) 207 3447 (09) 244 3664

Circle 117 On Reader Service Card

## ACOUSTIC INSTRUMENT PROCESSOR

MAP 33 is a unique device from RANE, which is almost an entire solo act processor. You plug in two different pickups from your acoustic instrument, a mic and a piezo pickup. MAP allows EQ and mixing to provide a wide, full bodied sound, the RANE people say. It accepts three sets of inputs, with each processed sepa-

ately. Various EQ, filtering panning and mixing can be saved to memory. A vocal mic can be plugged in too. A built in setup procedure lets you use it without the manual. It's a great machine if you play acoustic, often, and perhaps alone.

Retail \$6,495, from Jands: (02) 516-3622.



# VOCAL

## TG-X 180

Microphones · Headphones · Wireless Systems

# beyerdynamic

Distributed by Amber Technology Pty Ltd ACN 003231187  
Tel: Syd (02) 975-1211 Melb (03) 646-5811 Bris (075) 29-0619

WRITE IN 154 ON READER SERVICE CARD

## info freako

With Danny Dun

### READERS Q & A

**DEAR FREAKO:** I recently saw an advert for a **WIRELESS MIDI** system in a German magazine, and wonder what this actually **MEANS**. I can't read German too well, so I thought I'd put you to the test! I'm a composer/musician, with a PC. I don't work live, but will before the middle of next year. Why would anyone want a **Wireless MIDI** system? I like your column, by the way!  
-Paul Daral, Paddington NSW.

The idea behind a wireless MIDI system is similar to a wireless mic or guitar system. Instead of transmitting an audio signal it sends and receives MIDI messages. This would be useful if you required a MIDI connection but didn't want, or couldn't have, the restrictions of one or more MIDI cables. For example, if you played a remote hand held MIDI keyboard and needed to run around the stage and act like a rock hero this would be great! Another, more obscure use would be a lighting system that uses MIDI control via a MIDI dimmer rack. You could place the dimmer rack right up close to the lights and control the show from a remote location without any connecting cables! The same would be true for a front of house engineer who could control the MIDI equipment backstage (e.g. sequencer start, patch changes etc.) or even remote control effects racks.

**DEAR DANNY:** I know this isn't really probably truly utterly the absolutely correctly right place to ask this question, but here goes anyway: What is the difference between a workstation, a hard disk recorder, and a product like the AKAI DR-4 - or for that matter an ADAT? All these products barge ahead and advertise features without spelling out in dumbo terminology just who it is they are pitched at! Or am I stupid?  
-"Shy Closet Stupid MIDIot", Mt. Gambia, S.A.

Be sure to remember that a lot of equipment is pitched at professional engineers who should understand the technology. The problem often arises that manufac-

(over)

## MUSIC SHOW: Opinions.

(continued)

### Emmanuel Ziino - Australian DJ Supply Co

We were satisfied. It was our first exhibition and it was very successful for us. It wasn't really aimed at our side of the industry and I was surprised that it worked for us.

### Peter Hayward - Australis

The trade attendance was excellent. It was up on last April and the public attendance was outstanding. We're very satisfied.

Promotion - Trade-wise we included notices and stickers and so forth on mail and statements but I think it was pretty well known who was exhibiting within the trade. We also all put sufficient funds in there to cover the television advertising and so on, which is certainly the most effective.

Cost - I'm still getting over it. Approximately \$75,000. On media advertising and marketing we spent about 5 per cent.

### Nick Bavas - Bavas Music Scene

It was okay but it wasn't spectacular. There was a lot of interest but the noise factor was a problem, especially with what we were doing. It was our first year and we won't be going back in unless they have sound isolation.

Promotion - We mostly relied on the AIMS organisers but I don't think they did a very good job. A lot of people didn't know about it.

### Pat Bonham - Capricorn Marketing Concepts

I thought it was excellent. We're not pursuing selling to every store that exists, rather we were looking for the right dealers and in that sense the show gave us the dealers we wanted. Promotion - Internal mail outs and we took advertising in Connections and Sonics.

### Drago Trojkovic - Central Music Instruments

On a score out of 10 I'd put the trade response at 2 to 3. I think there was a real interest to visit, but not to buy. As far as the consumers go, they were very receptive. I take my hat off to the organisers, they did a tremendous job. Promotion - we sent out newsletters and informed our dealers about new products and specials and we had clinics set up at the show. Cost - In the vicinity of \$40,000.

### Greg McNamara - Dynamic Music

It was excellent. We saw more dealers that we've seen at a trade show since the days trade shows used to mean something. In terms of exposing new products and writing orders, it was the best show we've had. It was most gratifying. Cost - About \$70,000 and about \$20,000 of that went on promotion, including clinics.

### Ray Kimber - Electric Factory

It was quite positive. We didn't go with the intention of selling a multitude of stock to dealers who already have a multitude of stock. I guess the trade were a little more reserved, but that's a sign of the times.

Promotion - We advertised in the street maga-

zines, Juke, in the show catalogue and Sonics. Cost - We budgeted somewhere between \$50,000 to \$60,000 and possibly blew that right out of the water.

### Margaret O'Loughlin - Fender Australia

It wasn't too bad. I always think there's room for improvement. I still had a certain number of people who said they didn't know it was on. Promotion - We contacted all our dealers every month from April on. We advertised in Sonics and Drum Media.

### John Blanch - Kawai

It was excellent, both in figures and the number of dealers who came up to our stand. We're very, very pleased. This will probably go down as one of our best shows. My only criticism is that it wasn't marketed to the family, it was more to the rock and roll audience. I saw a few older people wandering around and they looked very uncomfortable with the noise.

### Paul Payton - F Payton & Sons

It was very well attended both by the trade and the public and we found as far as the order side of things goes, we did well. We're very happy. It's the best show we've had and we've been in every single one of them. Rob Walker did such a good job. It was a good quality crowd, we thought, as well. People seemed genuinely interested.

Promotion - Direct mail to customers, advertising the show and us at the show. We also distributed the official posters and stickers.

Cost - We spent \$15,000 on the space.

### Robin Macfarlane - Pro Music

The performances that were pitched to the public defeated the reasons we were there, which was to do business with our trade customers. We lost a lot of business - it was just physically impossible to talk. The trade response was satisfactory but we won't be getting involved again.

Promotion - Direct mail. Any customers, during the month of August, if they were alive they would've known about the event.

Cost - Close to \$50,000.

### Rob Findlay - Syntec International

It was very good as far as trade was concerned. We did some nice business on the trade days, met some good people and got some new contacts. A lot of the time on the Saturday and Sunday we couldn't hear what our customers were asking us because of the sound pressure levels, that put us right off. The PAs should have been in a separate hall. We booked into what they called the quiet area and it was louder than the loud area.

### Con Biviano - Universal Lighting

In terms of trade it wasn't bad. We did well from the show from the few people that we had but we understood that it was the first show to include lighting. ♦

# FACTORY SOUND

The Specialists In  
Sound Reinforcement Equipment  
In SALES and HIRE

**INCREDIBLE PRICES!**

## AGENTS FOR

EV, JBL, Lexicon, Soundcraft,

Fostex, Allen & Heath, Shure,

Crown, Amcron, Bose, Peavy,

Jands, Biamp, Countryman, Nady,

Pro Power, Ashley, Lorantz, Vega,

Gauss, Altec Lansing, SCV, Tascam,

DBX, Klark Technik, ARX, Genelec,

TEAC, Rane, Nashua, Sony, Ramsa,

Sennheiser, TC Electronic

## JUST RELEASED!

Lexicon "Alex" Digital Effects  
Processor

Our Price.....\$880.00

## ALSO AVAILABLE

Extensive Service  
and Recone Dept.

4 Rehearsal Rooms

Open until midnight every  
night - excluding Saturday

Factory Sound  
75 York St  
Sth Melbourne  
VIC 3205

Ph: (03) 690 8344  
Fax: (03) 690 7077

turers invent their own descriptive words, such as "Workstation", Advanced Sample Recorder", Production C fi it would be great to see manufacturers describe their equipment in plain english. Actually brochures seldom give enough information to allow an appraisal of a product. You can't judge a book by its cover, so to speak. You have to remember that a lot of equipment is pitched at professional engineers who should understand the technology. The problem often arises that manufacturers invent their own descriptive words, such as "Workstation", Advanced Sample Recorder", Production C fi it would be great to see manufacturers describe their equipment in plain english. Actually brochures seldom give enough information to allow an appraisal of a product. You can't judge a book by its cover, so to speak. You havaccess) systems. Examples of tape based recorders are the Alesis ADAT and Tascam DA-88. These devices are also known as linear systems as the audio is stored and accessed one event after the other, just like it is with your standard tape machine. e.g. As the tape runs past the heads, the audio is recorded to or read off the tape at that

position. The major benefit of this type of system is the removability of the media. This means that when you are finished recording, you can remove the tape and do what you like with it! The down side is the time it takes to fast forward or rewind to the various parts of the recording.

Hard disk recorders come in a variety of types. Common examples being the Akai DR4d or DD1000, the Yamaha CBX-5d, Digidesigns Pro Tools or Sound Tools and Session 8. All of the above systems are different in the way they operate and handle audio. However, the one common thread is that they are all random access systems. This means that the time taken to jump between different parts of a recording are negligible. This allows for very fast, flexible and accurate editing (arrangement) of your material as the recorder is able to jump between different parts of a recording effortlessly. The down side is that generally (with the exception of the DD1000) hard disk systems use a fixed disk and therefore the recording media is not removable as is tape. This limitation is generally overcome by the system allowing back up of the recorded data to standard DAT or removable SCSI hard drive such as a Sony Magneto Optical disk.

## info freako

**Ask Danny Dun ANYTHING!**

Your questions answered!

Just write to:

PO Box 439, Epping NSW 2121, or FAX to (02) 876-5715.

\*Danny Dun is Digital Products Manager at Australis, also a member of 'Clan Analogue'.

## ADAT:

*The WHOLE Story!*

**BRUCE WAITE & DAVE MACKEN** are busy putting ADAT through it's paces, they return next issue to tell you everything there is to tell!

# WE'RE CELEBRATING ALL NOVEMBER

Because we are NOW

# EV DEALERS



EV 81-PMX  
Powered Mixer  
..one of the many  
EV specials

- 1 SPECIAL OFFER #1 - All EV customers in November will go in the draw for a free EV N/D 357 microphone valued at \$443.
- 2 SPECIAL OFFER #2 - The first 30 EV customers will receive a free copy of the 'PA Bible'.
- 3 SPECIAL OFFER #3 - Huge discounts!! Special PA Package deals, for example, 8 channel 200 watt powered mixer with 200 watt speakers, reduced from \$4156 to only \$2895! Also, mega deals on EV microphones and all EV Products!



2 5 6 VICTORIA ROAD  
GLADESVILLE NSW 2111  
A U S T R A L I A

TELEPHONE (02) 879 6788  
FACSIMILE (02) 817 1049

# The Right Pro-Audio Products

## **Toa Pro-Sound**

- Broadcast Audio
- Sound Reinforcement
- Contracting Audio

## **Denon Audio**

- Broadcast CD Players
- Pro Cassette Decks
- Contracting Audio

## **AKG Acoustics**

- Microphones for Studio
- Digital Editing Suites
- Sound Reinforcement
- Headsets for Pro-Audio

## **Magnasync**

- Communication Recording Systems

## **Dynair**

- Routing Switchers

## **AWA Distribution**

All states • Call today for an obligation **FREE** quotation (008) 252 391

*Full Technical  
Support Available*

Write in Reader Service number: 137



## **coemar** ..... we don't want to reinvent the wheel!

At CDA, we recognize that the personal computer is at the forefront of technological change, odds are, in fact, that you already own a PC.

So rather than reinvent the wheel, we offer you the opportunity of using your reliable PC to utilize the cutting edge of lighting technology. Software which allows you to develop creative and effective lighting plots and then turns your PC into a 1024 channel lighting board needed to operate them.

We offer:

### **Intelligent**

Lighting Design:

**Microlux 1000** a 3 dimensional computer aided design software for stage lighting designers.

### **Intelligent**

Control Systems:

**ShowCAD** professional lighting control package for your PC.  
**Compulite** Control desks, totally software/PC based.

### **Intelligent**

Lighting:

**Coemar & Tas** a wide range of lighting designed with the aid of PC's.

Call us now for your free demonstration diskettes, we're sure you'll make the **Intelligent** choice.....

**Coemar De Sisti Australia P/L, 36A Clements Avenue, Bundoora Vic 3083**

**Ph: (03) 467 8666 Fax: (03) 467 8667**

## **Your Lighting Software Specialists**

Write in Reader Service number: 139

# The Idiot's Basic LIGHTING Course

© The Idiot Publications 1993



The Idiot's guide to basic stage lighting crunches into Part Three this month....

Part Three.

## WHAT we already KNOW, from Idiot # 1:

Electricity: 240v, 120v and the Par 64, Series Splitting, two Par 64 = 1 x 240v circuit.

and Idiot # 2: ..... Rigging, hanging and staying alive, with tales about Near Death Experiences...

## The OBJECTIVE.

Johnny O'Keefe was very famous when he rang me about his lighting objective. Every lighting project has an objective, and the Wild One, or J.O.K. as he was better known had the most fun objective of them all. A PARTY! Yeah! I knew already he was the kind of guy to really party down, and knew about the famous Pill Popping Perth Flight story, which was almost

as good as when Barry Humpries got banned from Ansett ... but that's another story!

It was 1972 and JOK had climbed back to fame, his club act was pulling punters, and he lived at Double Bay. I dashed over to discuss the Concept. I was to light the garden and a party area under a huge tarp - and it was the very next Friday. I extracted an \$80 budget (BIG bucks then) and hit the Strand Hire department in a big way.

The OBJECTIVE was to LIGHT the PARTY, right? This is a very loose objective, as events proved. I rigged Patt 123 fresnel spots for controlled lighting of the mansion facade and Patt 60 floods for tree washes. Three Patt 23 profile spots were hung from the highest safe branch, the hook clamps slipping over the bough rather neatly. They each had a gobo in the gate for projecting star patterns down onto the top of

the tarp. Four Patt. 23's had colour wheels, 2 slow 5RPM and 2 40RPM units. I'd long ago decided 60RPM were too fast, and 40 worked great with 5. Science!

I hung a 16" mirrorball in a tree, and lit it with a Patt. 23 about 12' away from each side. These each had an iris inside the gate, which I used to carefully zoom down the beam to just focus on the 'ball alone. Two Ultra Violet floods were under the tarp, with The Strobe. I even had a Ripple Machine, (a real dud effect) and a Bubble Machine - the Strand effects catalogue was almost depleted now!

JOK was out when I started rigging at 10am. His Pontiac Firebird growled back at dusk, whereupon he went upstairs to prime himself for his gig at St. Georges Leagues Club. "When I get back we'll get down to work", he yelled. I'd just about finished - I thought.

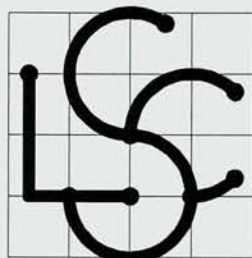
## AGENTS & DISTRIBUTORS

for the World's Finest in  
Lighting Instruments and Control Systems.  
Call now, for the most competitive prices in town.

**CM**  
LODESTAR

**ROSCO**

**SELECON**



**PHILIPS**

**GamColor**

**OSRAM**

**Pan Command**

**JANDS**

**THE GREAT AMERICAN MARKET**



**CONCERT  
LIGHTING  
SYSTEMS**

**AUSTRALIA  
PTY. LTD.**

Head Office: 282 Normanby Road  
Port Melbourne, Victoria 3207  
Tel: (61-3) 646 8444 Fax: (61-3) 646 8555

ACN 005 422 319

## Lighting - and Fast Cars

Go together! Anyway when JOK returned it was Up The Tree for Me, while he paced about, yelling directions. "Yellow light on the house, Purple for the top of that tree" he barked, as I swung from branches with a roll of Cinemoid in my back pocket. "No - RED light down here, GREEN up there" he decided. I was burning my hands and wrists on streaming hot lights by now, and felt like Tarzan - except my Jane was The King Of Rock & Roll. And it was bloody late at night.

Down out of the trees and into the Pontiac for a smoking burn around the block to see what it looked like from the road. "Great", he grunted through his Cigar, before throwing a great wheelie to burn back and check it from the other direction. More tree work for me, and at 5am the elusive JOK minder drove me home in The Pontiac.

## Party Time!

They were all there, John Laws and Brian Henderson, Stuart Wagstaff, Ward 'Pally' Austin and more expensive mullet than I'd ever seen in one place! The party was actually for JOK's daughter's birthday party and there was a humungus Ice Carving of a number '12', full of god knows what. A Juke Box did the early music honours while the guests arrived to incredible edibles, ten Pin Ball machines were lined up for the little whippers to play.

The big folk worked hard at their Martinis, and the JOK band ripped out a set. I was under a corner of the tarp at The Switchboard, which was what you used to control lighting in those days. What I did was CHANGE the mood of the function periodically, which was approximately every 20 seconds or so, by switching the mirrorball spotlights OFF and the colour wheels ON. I even had the colour wheel motors on a separate channel to stop and start them! Esoteric lighting, I was to become famous for this!

## 'ON DEMAND' lighting!

The highlight of this function was the spontaneous performance of JOK himself, and I've got to admit this guy had it all. Great jerky dance steps, a voice like no other, and that magic ingredient - CHARISMA. You can't buy that! Every song started out the same - he'd stand there in the spotlight. (His own touring show had a Jands PA, an F350 truck, and a single, solitary Patt 293 2000w followspot. The band stood in the dark). After several bars he'd bark 'STROBE', and on it'd go. JOK would go crazy for the rest of the song, whereupon the spot would snap on at the end!

If you're wondering where the lesson is this month, I guess this is the crunch. I'm talking about your attitude. This story deals with a bunch of classic lighting situations. Let's deal with them here:

**1. Fixed Price.** Not uncommon. You really need a budget to light anything, because unlike sound, lighting is an almost unlimited medium. If you don't have a budget, you don't have a base to plan from.

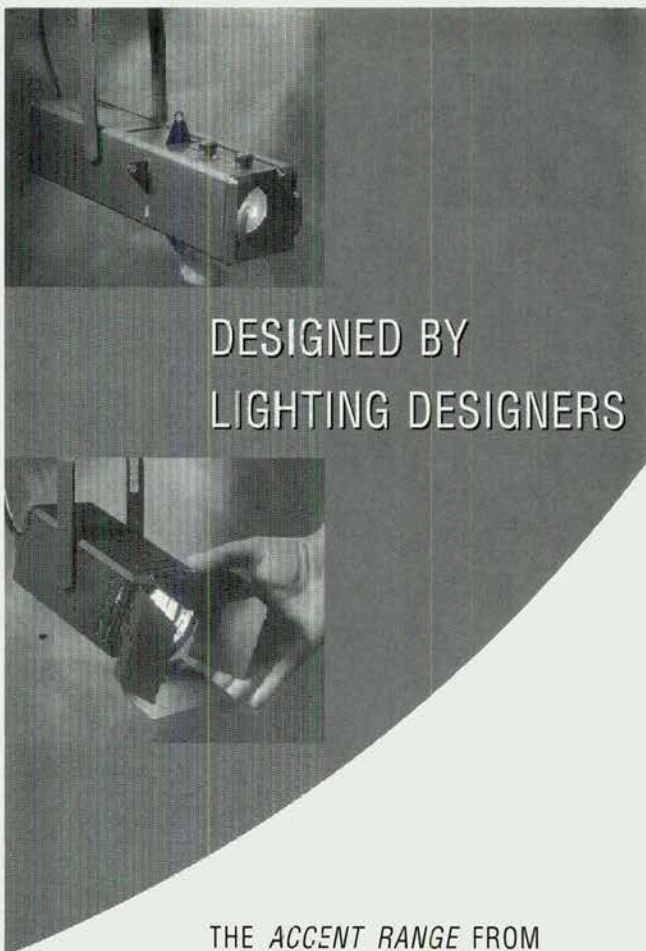
**2. Objectives are loose.** Even if you set out to light the Australian Opera, things will change along the way. The set will look different to the model, the director will move things about. You need to watch the big picture.

**3. Hours are LONG.** Lighting is the most time consuming part of live performance. You'll work hard, climb things, and get filthy dirty. You'll also get burnt and bothered.

## SEX, DRUGS, BOOZE and MONEY

Yup, you'll lust after some of these. But in Lighting, you can get in to the entertainment industry from the ground floor - without prior experience - by lighting things. Try to avoid lusting after money for quite a while and you'll find shows, fashion parades, charity functions and poor bands are just everywhere. Light these, and learn. If you booze, do it after the show. Forget drugs. Oh, and about sex .....

**MORE next month if you write to the Editor and plead they keep me on!**



DESIGNED BY  
LIGHTING DESIGNERS



THE ACCENT RANGE FROM  
SELECON FOR CREATIVE  
LIGHTING.

These miniature zoom profiles and spots are based on reliable long life MR16's providing outstanding light output.

They're essential tools for introducing theatrical lighting techniques to the commercial and display world.

Colours - Moving effects - Shutters - Barncoors.

For more information contact your nearest Selecon dealer. We'll shed a whole new light on your next project.



NSW Herkes Electrical 02 316-3133

Vic LSC 03 356-3111, S.Arcs 03 618-0297 QLand East Coast 07 252-9583,

Lasar 07 236-2333, Kennedy Amplifier Services 079 573-904, Wild Gravity 077 213-540

SA Osmarics 03 410-1111, GUMT 08 362-3454 WA Kosmic 09 242-3844,

Stagecraft 09 227-9000 ACT Topstage 05 280-5710, CPE 06 280-5576

TAS K'n' McCuloch 032 266-373 or 032 431-034 NT Integrated Media 089 411-128

SELECON

PH: 64 9 360-1718, FX: 64 9 360-1719

Write in Reader Service number: 145

### Chapter 4: An Outdoor Sound Reinforcement System (continued)

#### The Influence of Directional Microphones and Loudspeakers on System Maximum Gain (continued)

This system is equivalent to the one shown in Fig. 4-4B; both exhibit a 6 dB increase in maximum gain over the earlier case where both microphone and loudspeaker were omnidirectional.

Finally, we can use both directional loudspeakers and microphones to pick up additional gain. We simply calculate the maximum gain using omnidirectional elements, and then add to it the off-axis advantage in dB for both loudspeaker and microphone. As a practical matter, however, it is not wise to rely too heavily on directional microphones and loudspeakers to increase system gain. Most designers are content to realize no more than 6 dB added gain from the use of directional elements. The reason for this is that microphones and loudspeaker directional patterns are not constant with frequency. Most directional loudspeakers will, at low frequencies, appear to be nearly omnidirectional. If more gain is called for, the most straightforward way to get it is to reduce  $D_0$  or increase  $D_1$ .

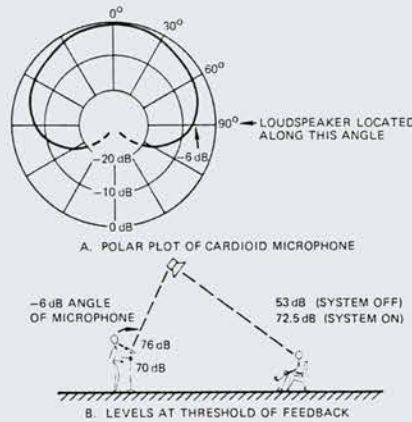


Figure 4-5. System Gain Calculations, Directional Microphone

#### How Much Gain is Needed?

The parameters of a given sound reinforcement system may be such that we have more gain than we need. When this is the case, we simply turn things down to a comfortable point, and everyone is happy. But things often do not work out so well. What is needed is some way of determining beforehand how much gain we will need so that we can avoid specifying a system which will not work. One way of doing this is by specifying the equivalent, or effective, acoustical distance (EAD), as

shown in Figure 4-6. A sound reinforcement systems may be thought of as effectively moving the talker closer to the listener. In a quiet environment, we may not want to bring the talker any closer than, say, 3 meters from the listener. What this means, roughly, is that the loudness produced by the reinforcement system should approximate, for a listener at  $D_0$ , the loudness level of an actual talker at a distance of 3 meters. The gain necessary to do this is calculated from the inverse square relation between  $D_0$  and EAD:

$$\text{Necessary gain} = 20 \log D_0 - 20 \log \text{EAD}$$

In our earlier example,  $D_0 = 7$  meters. Setting EAD = 3 meters, then:

$$\begin{aligned} \text{Necessary gain} &= 20 \log (7) - 20 \log (3) \\ &= 17 - 9.5 = \underline{7.5 \text{ dB}} \end{aligned}$$

Assuming that both loudspeaker and microphone are omnidirectional, the maximum gain we can expect is:

$$\begin{aligned} \text{Maximum gain} &= 20 \log (7) - 20 \log (1) \\ &+ 20 \log (4) - 20 \log (6) - 6 \end{aligned}$$

$$\text{Maximum gain} = 17 - 0 + 12 - 15.5 - 6$$

$$\text{Maximum gain} = \underline{7.5 \text{ dB}}$$

As we can see, the necessary gain and the maximum gain are both 7.5 dB, so the system will be workable. If, for example, we were specifying a system for a noisier environment requiring a shorter EAD, then the system would not have sufficient gain. For example, a new EAD of 1.5 meters would require 6 dB more gain. As we have discussed, using a directional microphone and a directional loudspeaker would just about give us the needed 6 dB. A simpler, and better, solution would be to reduce  $D_0$  to 0.5 meter in order to get the added 6 dB of gain.

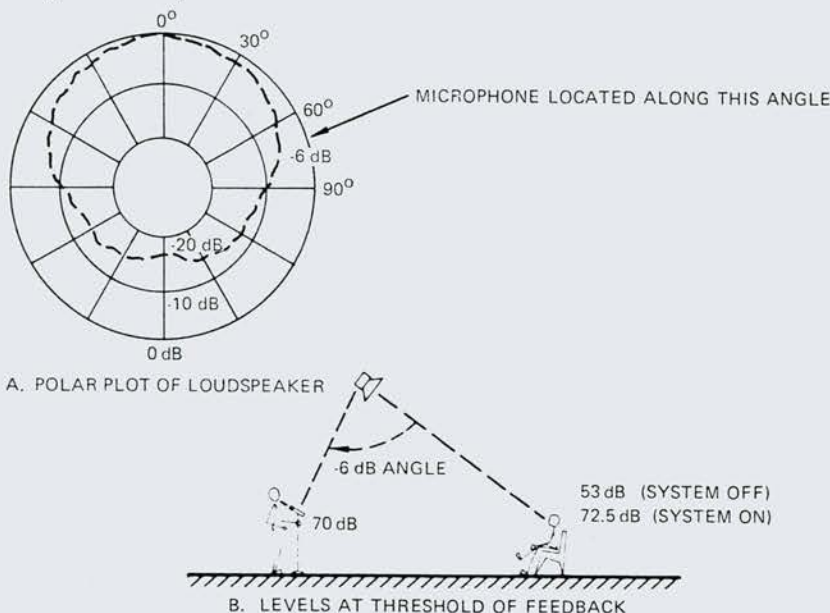
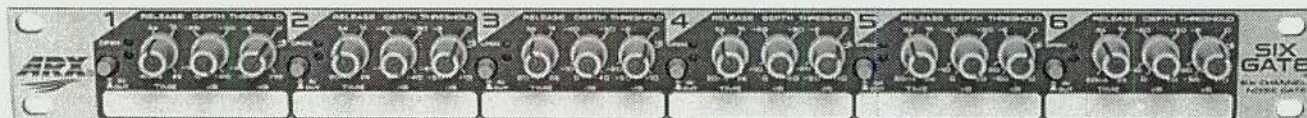


Figure 4-4. System Gain Calculations, Directional Loudspeaker

(Continues)

# Our gates do more than just open and close...



...the ARX Sixgate gives you something you haven't seen for quite a while - real solutions to real problems.

You see, at ARX we don't believe in making 'me too' products. We make sure that every product we create has that extra something that makes it stand head and shoulders above the competition.

### Why Six Gates?

Let's look at a typical miked up drum kit. How many channels do you need? Usually around 5 or 6. But how many channels do most gates give you? Two, maybe 4 maximum. This means that you need to buy 2 or

3 units and use up to *three times* the rack space. (And spend up to three times the money!)

Since 90% of noise gates get used on drum kits, we thought that it might be a good idea to put enough gates for a complete drum kit in one unit, without sacrificing features or quality. And make them easy and fun to use, too.

The Threshold control will adjust low enough to use on your home studio 4 track, and high enough to gate the hottest P.A. signal.

The variable Depth control lets you leave the gate slightly ajar when

it is closed, so there is less of a jump from Closed to Open. This is an essential feature for natural sounding vocal gating, especially when used in conjunction with the Release control.

On the rear panel, each gate has individual Balanced Inputs and Outputs, and Key Input/Sidechain Insert points for sophisticated Remote or Frequency Sensitive gating.

If you'd like to know more about the Sixgate, or other innovative ARX products, call the person listed below that's nearest to you.

They'll be happy to help you.

Victoria and Tasmania: Tony Hosking 03-888 6555; New South Wales: 02-879 6788 Dave Croxton; Queensland: 074-424 233 Rod Watts; South Australia: 08-356 6601 Peter Asztalos; Western Australia: 09-354 3185 Ian Ross; New Zealand: +64 (0)9 789 863 John Carter

ARX SYSTEMS P/L, 33 ADVANTAGE ROAD, HIGHETT, VICTORIA 3190, AUSTRALIA. PH: (03) 555 7859 FAX: (03) 555 6747

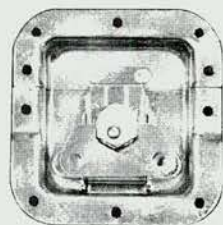
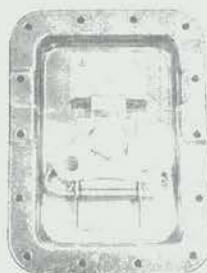
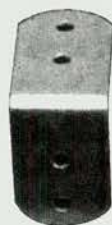
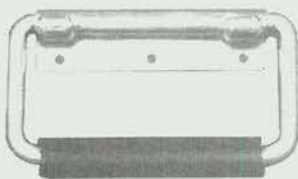
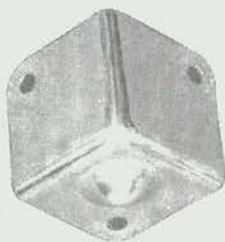
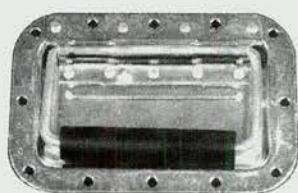


**Awesome 🐾 Radical 🐾 Xcellent 🐾 and Australian!™**

Write in Reader Service number: 124

## ROADCASE MANUFACTURERS TAKE NOTE:-

Finally a Reliable™ Source of Hardware - All Major Pieces in Stock



**RING JANDS (02) 516 3622**

Write in Reader Service number: 114

# STAGE 12/24

Lighting Control Consoles



PAN 9307STAGE12/24-03

- 12 AND 24 CHANNEL VERSIONS
- 2 PRESET OPERATION
- DMX512 OUTPUT
- ADD/SOLO FUNCTIONS ON ALL CHANNELS AND MASTERS
- WIDE MODE OPERATION-DOUBLES AVAILABLE CONTROL CHANNELS
- 2 'GRAB' FADERS FOR PHANTOM 3RD AND 4TH PRESETS
- CHASE FUNCTION CAN BE ASSIGNED TO ANY OR ALL CHANNELS
- 2 YEAR WARRANTY

578 Princes Hwy, St. Peters, NSW 2044 Australia. Phone: (02) 516 3622, Fax: (02) 517 1045

**JANDS**

Write in Reader Service number: 123

# Peter Kemp

## DMX: the debate continues

I have written on this subject earlier on in the year, but this matter is certainly a continuing subject, you may have read in my PLASA report that this years show included a Seminar entitled "Control Transmission - Are we stuck with 8 bit technology". DMX is a digital multiplex that somehow, somebody figured out maybe a useful tool for dimmer control and it works great for its intended purpose. Together with the advances that DMX brought we also got soft patches etc, meaning more things for the dimmer people and console operators.

Next came scrollers which needed a control standard and DMX fitted, then came Moving lights & once again a control standard was needed. By default DMX became the standard, however we were now pushing DMX well beyond its means. Next we found that 512 channel, 8 bit resolution was limiting us, so the bastardisation of the once simple standard, originally designed to replace multi cores with microphone cable began.

We then found Moving Light manufacturers using 16 bit pan & tilt by doubling up on channels, and other companies created their own protocol for better resolution, though this perhaps seems like a backward step considering the idea of using DMX was to allow all fixtures to use the same standard, which is obviously not possible with dedicated protocols. What is the next step?

Certainly we all must agree that DMX does the job it was created for (ie: controlling dimmers) what we need now is a new protocol, one that manufacturers can add to existing designs. Designers should start with a blank piece of paper bearing in mind the requirements of the users of the products, not just the thoughts of the manufacturers. The communication between the console and the fixtures. Setting up, of the system must be simple without too much limitation, as it is important that the majority of the set-up time is available for programming, not setting up the system.

Ideas such as fixtures that are intelligent enough to know that they are the next fixture in line and thus automatically configure themselves to the next group of control channels (though obviously this would need to be possible to override), addressing of fixtures via other methods than those fiddly minute dip-switches, need to be considered, even though they relate more to fixture design than protocol, obviously if protocols are to be reconsidered then items such as these should also be considered.

With regards to the PLASA seminar the general consensus was the DMX is here to stay for a few years yet. The conclusion was that a new protocol would be needed eventually, one which could cater for equipment which has not even been invented yet. In the meantime DMX can be made more useful by making use of the start codes to provide other facilities. At present only one code, the null code is recognised by the DMX 'specifications', but another 255 are available.

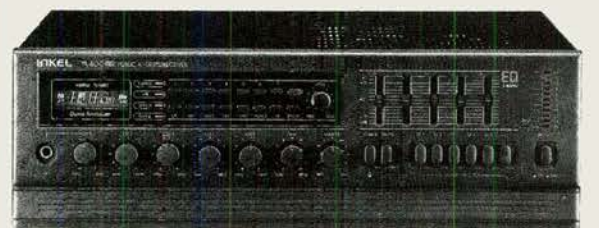
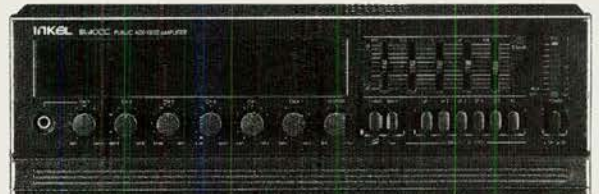
Current PLAA is considering the establishing a joint USITT/PLASA working group on digital communication, details of which should be available shortly.

Peter is head of Coemar DeSisti Australia, call (03) 467-8666.



INKEL P.A.

## 100 Volt Commercial Range



INKEL'S range of 100 volt line mixer receivers and amplifiers available in 30W, 60W & 120W (RMS). This range out performs the competition for features, reliability, quality and is competitively priced.

Features include: All balanced inputs, switchable line/mic input XLR, 5 SPK zones chime & graphic.

For more information on the INKEL PA range of commercial products, contact your nearest INKEL PA dealer or phone:

### Australia:

Magna Systems & Engineering

A trading division of Silidors P/L ACN 004 004 997

7 Gibbes Street, Chatswood, NSW 2067.

Phone: (02) 417 1111

Fax: (02) 417 2394

### New Zealand:

Magna Techtronics (NZ) Ltd.

Level 4, 210 Khyber Pass, Newmarket, Auckland.

Phone: (09) 307 3901

Fax: (09) 307 3832

When not writing books or offending our dear readers, Duncan is also a Director at the 'New Look' ARX in Melbourne.



## An Innocent Abroad

Part 1. White House, Black Humour. Our hero inadvertently ignites racial tension in the land of the free

It's amazing how you can put your foot in it when you're overseas. Different cultures, different people, it's so easy to say the wrong thing without thinking. Things that when you think back on them you wonder how you could possibly have been so naive.

I'd be the first to admit that I've said the wrong thing at times, but perhaps never quite so badly as the time I walked into an all black record store in Washington DC on my first trip to the USA. It was 1975, and the peace and love of the 60's had given way to the anger and disillusionment of the 70's. (Cut the hippie crap and get on with it Dunk, you stupid old fart. Ed)

Blissfully unaware that I was the only white person in the store, I rummaged through the racks of records until I found one that looked interesting.

Clutching it in my hot little hands, I took it up to the counter. A big black guy twice my size was sitting behind the counter, and he eyed me up and down as I approached. 'Excuse me,' I asked, 'but could I listen to a couple of tracks off this album?' The guy's eyes popped open in surprise. 'Say what, man?' he replied 'Could I listen to a couple of tracks on this album,' I repeated. He looked at me as though I'd just crapped on his carpet.

'Look man,' he said, 'Can't you read? We be a Record shop, not a juke box!' And he gave me a steely stare to make sure I'd got the message.

But no. I gabbled on relentlessly. 'Oh, I see,' I said. 'Sorry about that. Where I come from they play records for you in record shops so you can see if you like them before you buy them.'

He spun the record cover around on the counter so he could see the price. 'Shit, man,' he said, 'Look, it's only four bucks. You get it home and you don't like it, well, you can use it for an ashtray!' I rambled on about records being much more expensive at home, but he was unimpressed, and just sat there staring at me. Eventually he spoke.

'Where you from, man,' he drawled. 'Oh, I'm from Australia,' I replied. 'Australia, huh? Kangaroos and things?' 'Yes, that's right.' I said. This was quite a few years before Paul Hogan made us famous, so at least he didn't

say 'Throw a shrimp on the barbie for me.' Or even worse 'You call that a knife? This is a knife!'

'Tell me,' he said, 'Are there many of My people in Australia?' 'No,' I replied, managing to get both feet in my mouth, 'There's not many Coloured people in Australia!' Immediately I said it I realised it was definitely the wrong thing to say. His face grew even darker, and I thought he was going to explode.

'What the fuck you talking about, man,' he yelled, 'I'm not coloured, man, I'm BLACK! You think I'm green or purple or something?



Hey, I'm BLACK, man, and proud of it! Fuckin' honky asshole. Don't give me no colored shit!

I apologised profusely and dropped the record on the counter. Eventually he calmed down a little, and we finally parted on friendly terms after I took a couple of pictures of him with my new Polaroid camera and gave him one of them. I'm sure he would rather have just had the camera, but at least I managed to get out of the store with my nuts intact!

Another time I was visiting a speaker box manufacturer who had a factory near the LA Coliseum. This was a predominantly black neighbourhood, apart from the factory owner who was Irish. Most visitors to the ARX factory would know that we have dogs the way other people have mice, so I immediately felt at home in this guy's factory, as he had a big black Newfoundland dog roaming around it.

'Nice dog,' I said, patting it. 'What's his

name...Blackie?' Whoops! As soon as the words left my mouth I knew I'd said the wrong thing. The guy gave me a withering glance. 'What, Blackie? In this neighbourhood? Are you kidding? You think I'd walk him down the street and call him, saying "Hey Blackie, come here!" Christ, I'd be dead in five minutes!'

I had to admit he had a point there.

To round off these cautionary tales, let's go back to 1975 and my first trip to the US. I'd landed in New York and checked into a sleazy hotel. The bus driver has recommended it to me on the trip from the airport. 'Don't stay at any of those places that have rooms for under \$10,' he said. 'Otherwise you'll have to sleep with one leg of the bed in each of your shoes so nobody steals them!' This place was one grade up from that - at least it had a lock on the door.

Jetlagged and restless, I couldn't sleep so I decided to have a walk around Manhattan. I defy anybody to sleep during the day in a New York hotel room, jetlagged or not. The noise would wake the dead. So, I put on some clean clothes and my prized new patchwork leather jacket, and wandered around the streets. Hey, no laughing; we're talking mid Seventies here - I was probably wearing flares too, but I can't remember.

Anyway, there I was at the kerb waiting for the lights to change,

when a beautiful black girl stands next to me. And, by an amazing coincidence, she's wearing a long patchwork leather coat that's the identical pattern to my jacket. I couldn't let the moment go by without saying something, so I turned to her and said 'Hey, your coat's the same as my jacket.'

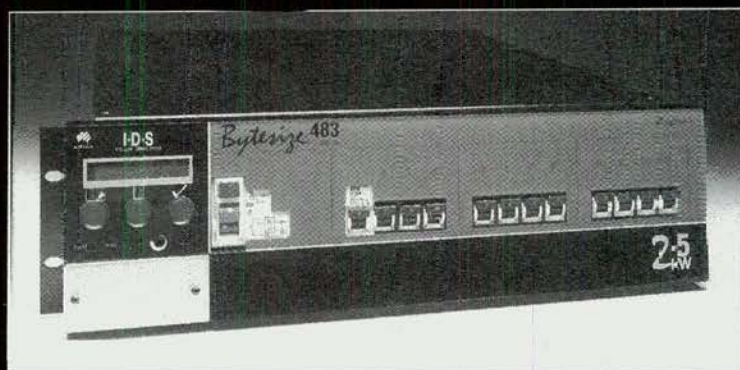
Pretty smooth opening line, or what, huh?

She turned to me and looked me up and down. 'Not quite the same,' she replied, 'Mine doesn't have a piece of white shit in it!'

My mouth must have been flapping like a fish out of water as I stood there speechless. The lights turned green and she started to cross the road. Turning back to me she smiled, gave me the finger, and said 'Have a nice day!'

Coming up next issue: Driving in the US - what's everyone doing on the wrong side of the road?

# Bytesize



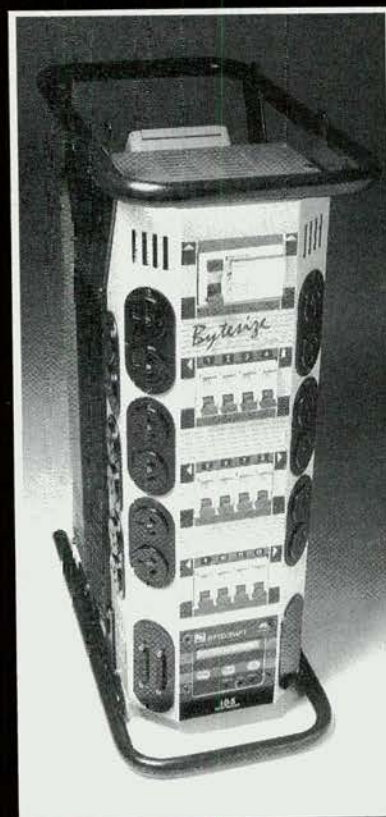
2.5  
kW

5.0  
kW

10.0  
kW

#### Standard Features Include:

- 100 Individual Time Preset Memories
- Multiple Local & Remote Playback Modes
- Comprehensive Control Protocols
- Status Monitoring and Remote Reporting
- Eight Individual Channel Assignable Curves
- Internal Softpatching of up to 512 individual channels
- Individual Proportional Output Patch
- Totally Digital Hard Firing
- PC Compatible Data Transmission
- Convection or Fan Cooling
- All Features Remotely Accessible
- 16 Bit Fade Resolution
- High Density
- RCCB Protection
- Internal Backup
- LCD Display & Control Panel
- Part of The Bytecraft I.D.S. Family



EYTECRAFT  
F - 03 587 2555

WRITE IN 107 ON READER SERVICE CARD FOR MORE INFO



# Lighting Opera

**N**igel Levings has been a freelance lighting designer for twelve years working mainly in theatre. Prior to that he was resident lighting designer at The State Theatre, South Australia and also The Melbourne Theatre Company. In fact Nigel has been working in the industry for over twenty years and today his major clients include The Australian Opera, The Sydney Theatre Company and The Gordon Frost Organisation for whom he has designed several musicals - 'The King & I', 'How To Succeed In Business' and 'South Pacific'.

Nigel did his first show with The Australian Opera ten years ago and he currently has five productions - 'Golem', 'Tosca', 'Hansel & Grätal', 'Midsummer Night's Dream' and 'Don Giovanni' - in repertoire with them.

"I like to do some of the more interesting operas that are around like 'A Midsummer Night's Dream' with Baz Luhrmann," Nigel told me prior to the first dress rehearsal for 'Golem'. "I think some of the most interesting aspects of my work can be seen in the smaller productions I do for the small companies. Occasionally I work for these companies like the AYTP. I like working in those small venues although the bulk of my work comes from the large, high profile projects. When you're working in small venues, the visual tasks are not nearly as demanding as they are in a large venue like the Opera House where we have to make sure that people can see everything. If you're working in a theatre like Belvoir St action on stage can quite often be comfortably visible in bounce light or purely in back light. For

me, that's what makes it most interesting - being able to work with higher contrast levels and a wider range of lighting levels particularly in a musical. Musical producers are very demanding about the visibility of the performance and of their stars, which makes the lighting process perhaps not quite as interesting and certainly more demanding professionally. Musicals are not the area where you're going to push forwards the bounds of what's happening onstage in terms of stage lighting design and stage lighting techniques."

Fortunately The Australian Opera have a more avant-garde view to their producers and Nigel is given more artistic scope with them. There are a different set of problems involved with them, the main one being the fact that the company works in repertoire.

"You have to work from their repertoire lighting rig and you have very little time to get anything prepared properly," said Nigel. "They work to an extremely tight schedule. The repertoire rig in particular is a big problem in working with The Opera company. If a design gets its main design strength from the structure and position of the equipment over the stage and if you're locked into using an already set up standard lighting rig, then you don't have any scope to make the design work by putting the equipment in a particular way. If you want to do a design that involves putting 60 Profiles on one side of the stage you simply can't do it in The Opera company. It's often very frustrating, the company itself is

trying to do interesting and innovative productions of not only the classical opera repertoire but new operatic works. Working in repertoire means that each opera has to have a change over period of about four hours which places immense limitations on the design."

The Golem is a new opera by composer Larry Sitsky and librettist Gwen Harwood which was commissioned by The Australian Opera. It's directed by Barrie Kosky and designed by Michael Anderson. It's basically a tale of the creation, and the consequences of that creation, of a creature called Golem. Golem was created by a rabbi in a Jewish ghetto to protect the ghetto from attacks and the opera explores a lot of themes including the consequences of using violence to protect oneself.

"It's been very tough getting it in," admitted Nigel. "There's been very limited time to put on a world premier of a new and difficult major work. But I think that Barrie Kosky is a pretty fantastic director and has done a good job."

One of the main features of the stage set for Golem is the mud pit from which the creature Golem is created and actually rises up through. The rest of the set includes the Rabbi's house containing concealed MR16's to light the two levels in it. Running around the perimeter of the set are some jagged shapes which represent the Jewish ghetto, a jumble of houses tilted at precarious angles with streetlamps like searchlights. Off stage centre there is a clock tower which an illuminated clock face. Surrounding the ghetto is a plain white cyc and coming out of the ghetto is a tram which is pushed around on tracks by the crew. In front of that is the pit of mud which is about two and a half meters wide and eight meters long. The mud itself is about 150cm deep and there are tracks in the mud which allow the Rabbi's house to track through the mud. There's a concealed trap underneath the mud from which the Golem appears. The floor starts off in the opera as a white floor, with the mud also covered, so that the ground looks like freshly fallen snow. As the opera progresses and people walk more and more through the mud, the whole set ends up covered in mud. The mud ends up all over the stage, set and also the stage hands. Every night the floor has to be totally cleaned and there is also a fair bit of cleaning to be done backstage as the mud gets traipsed through. No doubt the crew at the Opera House love this one!

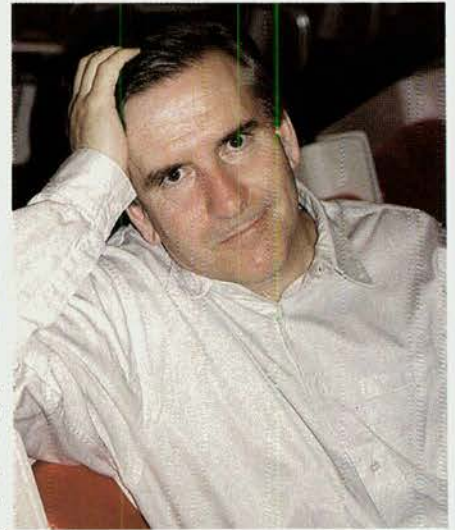
"There's a lot of mud but it's been well considered. All the costumes incorporate waterproof boots and the stage crew wear special protective suits," said Nigel. "In lighting terms the mud hasn't caused any great problems although we have some lights on stage which we had to put earth leakage protection breakers on them as the mud is so wet. We then had a problem with the particular breakers we were using that they wouldn't actually latch on at the low dimmer levels that we are using. So we changed to a different type of breaker. Another slight technical problem is the tram, which is modelled on the trams in Prague, which comes around the stage on a track and it has a number of lights and a set of flouros inside

as well as a couple of special lights. There was a problem with controlling and dimming it as it goes around in a circle so we've run a concealed loom out from the train and then track it back in the next scene change and set it up again for the next journey round the track."

The lighting rig for Golem is the standard Australian Opera rig consisting of predominantly Profiles, some older style Fresnels and Preludes. The overhead rig has seven spot bars, which work as a standard part of the AO rig, which contain a symmetrical pattern of a mix of Profiles and Fresnels. These provide the main back light, side light and odd special. On top of this are a number of things that Nigel adds to the rig to try give it a special feel of its own. Recently he has been using some Par56s which he's had retrofitted to 110 volt VMSP lamps.

"I quite like them now," Nigel said. "They're a six lamp unit and they sort of work like an elongated Par can. They're nice and punchy and give you a sort of tight, narrow strip of light. I use them in a couple of places around the stage. We

were originally going to have eight back light beam lights but the budget ran a bit tight so we've only got one now. The rest of the rig also contains MR16's, particularly in the moving trucks and tram, which are fitted to birdie Par cans. I like using them and always seem to find room for them in a show. I like the fact that you can get the lantern very close to the subject that you're trying to light so you can get interesting angles. You can also conceal them comfortably within the set. I also like using what are sometimes known as Apollo/Combi floodlights which are basically a 500watt flood that are sometimes used for outdoor



**"I think that companies like the A.O. could learn a great deal from the rock industry about rapid change over techniques and fast rigging systems....."**



security. They're very cheap and we use a stack of ten of them for footlights. They give you a really bright and harsh footlight look which works very well in some of the scenes where you need an aggressive frontal look."

One of the problems working with the AO is that Nigel has to temper the things that he wants to add to the lighting rig with the amount of time they actually have to set it up.

"One of my pet topics is about the opera company and how their demands for a fast change over are very like the same situations that face the rock'n'roll industry," Nigel elaborated. "I think that the companies like the AO could learn a great deal from the rock industry about rapid change over techniques and fast rigging systems."

For control Nigel always uses the Opera House Galaxy control system, which he's very keen on, and he describes the operators at the Opera House as extremely good. As to the building itself, Nigel really likes The Opera theatre auditorium which is a reasonable size and has good acoustics.

"The stage is a mess and is a disaster in terms of cramped wing space but that's a very old story now," said Nigel. "I think we've all come to accept the limitations of the stage. It doesn't cause such a big problem but I also work a lot in the drama Theatre here at the Opera House which has a curious cinemascope type stage. I would much rather work in an auditorium which is interesting and a little bit demanding. I don't particularly like the Victorian Arts Centre or the Lyric Theatre in Queensland or even the Adelaide Festival Theatre. I find the auditoriums to big in all of them for my personal taste in watching productions."

***"I've never done a production yet that's had a budget to use moving lights although I've tried"***

Nigel describes the Hansel & Gretel production as a fantastic version of a very often dismissed opera. The set starts in a tiny, realistic kitchen which is perched downstage at a bit of a rake. There are stairs and bannisters going upstairs to the kids bedroom and budgie cage. When the children go into the forest and get lost, all the elements that are in the kitchen are there in the forest. So the forest is a nightmare world which is the exploded version of the kitchen - the bannisters that once led to the bedroom are now 9 meters high, the kitchen door hangs off it's hinges. For Nigel it was a challenge working with the director to try capture something of the nightmare world.


"It's difficult to try describe in words but we used a lot of up light angles when they were in the forest," said Nigel. "Some of the moments when they're in the forest are quite beautiful. There is quite a bit of fairly lush colour, pretty dense blues and really hot pinks that I wouldn't often use in things like that. I suppose it was to do with angle choice. There is a moment, when they discover they're lost and get a bit scared, where we use a hanging light bulb (originally the light bulb from the kitchen but now in giant proportion) that swings ominously. We run a cue sequence with the swinging light bulb that shifts the lighting on stage drastically from one side to the other. The effect is that their world is swinging around."

The approach to the Midsummer Night's dream production was fairly radical in that the main performing area was over the orchestra pit so they were working with an area of stage not often used with the standard rig. Quite a bit of extra equipment had to be put in to light that area of the stage. A whole set of seats were pulled out from a couple of front boxes which, in most cases, have zero stage visibility and a rig was put up in each one. These rigs consisted of 12 1K Profiles a side. Also two tri-trusses of Par cans were flown, 12 cans a side, just for back light in the area. There was also a bandstand on stage where a lot of the action actually happened. A lot of lights, particularly MR16's, were used on stage and run from on board dimmers with 3 phase supply and DMX into the bandstand. In fact there were nearly fifty dimmers running out to the bandstand to power what was going on there. Under the bandstand there was a pool of water through which some of the characters entered. The design team of Baz Luhmann, Catherine Martin and Bill Marron had approached it like the Indian Raj and so the characters like Titania were shown as Indian characters.

"Water is a fantastic surface to work with with light as you can get such interesting reflections," Nigel told me. "I enjoy working with directors that do those sort of projects. I work very hard and if I'm going to work such long hours, I should at least do it on something I think worthwhile. I try to ensure they are the projects I do and if somebody really wants me for something I'm not that interested in, then I try to ensure there's some sort of extra cost factor added to the production to compensate me for the fact that I'm doing something I'm not interested in. I've never done a production yet that's had a budget to use moving lights although I've tried and I've tried to get them into shows that I've done. The budgets are just never there unfortunately. I suppose it'll come, and I'm very keen to use some, but the companies I work for don't seem to have the money at the moment. The nearest we get, and that's often a struggle, are scrollers into a production. I wanted to put a load of scrollers into A Midsummer Night's Dream but the budget was too tight and we ended up with only four. It's pitiful really but that's just the economics of it."

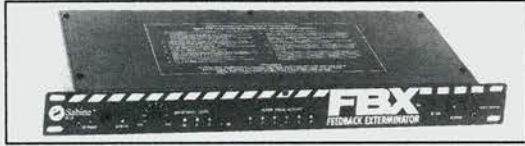
As well as the Australian Opera productions, Nigel also has a production of South Pacific on tour and he is about to revive a production of My Fair Lady for the Victorian State Opera. Also he has two productions running in Brisbane of Cosi fan Tutti and The Course of Destiny. In terms of new productions, he's working on a two more operas for the Australian Opera.

◆ Catriona Forcer



**QUINTRIX**

**CLEARANCE OF DISCONTINUED MODEL**  
MODEL R.10  
FEEDBACK EXTERMINATOR



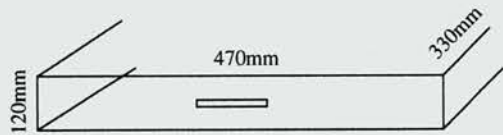
automatically finds and eliminates feedback in sound systems

**Recommended Retail \$1,699.00**  
**OUR PRICE \$499.00 ea**

**ONLY WHILE STOCKS LAST**

---

**SPECIAL**  
Roadcases Briefcase Style



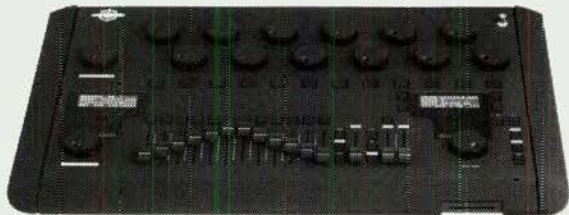
professional aluminium laminated with lock & keys - \$299.00 ea

**QUINTRIX COMMUNICATIONS**  
Early Warning Fire Evacuation (EWIS) and Public Address (P.A.) Specialists  
98 Port Rd, Hindmarsh, SA 5007  
Ph: (08) 346 6345 Fax: (08) 346 6935

# CELCO



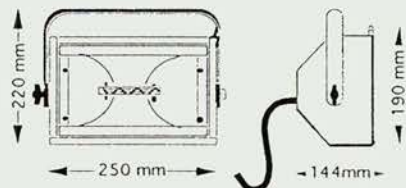
THE ONE CONSOLE FOR MOVING LIGHTS,  
SCROLLERS & DIMMERS  
PRODUCTION • NIGHTCLUBS • RENTAL



36 Preset Focuses    Sound to light & bass step sequence  
512 Patchable Dimmers    96 Control Channels  
Up to 480 alfa numeric legends    Copy & Gang Facility  
Up to 480 memories with move times    Q Card Storage

# TEATRO

## RiGA



## RiGA

Now, a 500w ECONOMY  
Floodlight System  
THAT CAN BE COLOURED  
AVAILABLE IN 4 way, 3 way & singles  
All units supplied with forks, colour frames,  
lamps and are fully wired.

CELCO **60 SERIES II CONSOLES 2 OFF**  
° WELL LOVED - IMMACULATE CONDITION  
° NEED NEW OUTLOOK ON LIFE ° \$9995 EACH O.N.O.

NEXT PYRO COURSE  
CALL CHRISTINE FOR DETAILS  
**10% DISCOUNT FOR ALL  
N.E.T.A.A. MEMBERS**

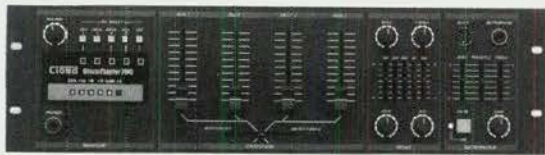
# Cloud

MIXERS FOR PROFESSIONALS  
DM 1200



NOW IN STOCK

10 MUSIC & 2 MIC INPUTS  
2 MASTER OUTPUTS WITH SEPARATE MIC GROUP  
DM 700



6 INPUTS - SEPARATE MIC & MUSIC OUTPUTS  
QUALITY - AFFORDABILITY - SERVICE SUPPORT

631-635 Parramatta Road  
LEICHHARDT NSW 2040

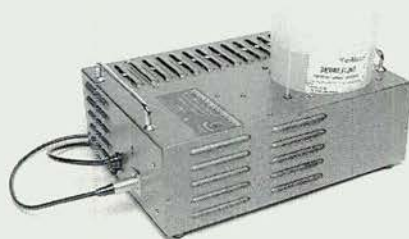
# LIGHT MOVES

TECHNOLOGIES

Ph: 02 560 0000  
Fax: 02 568 2333  
Country: 008 807 805

# Le Maître

SMOKE PROCESSOR III  
NOW FEATURING *GENESIS*  
BLOCK TECHNOLOGY



- VARIFLOW REMOTE CONTROL
- LOW COST EASILY SERVICED BLOCKS & HEATERS
- ELECTRONIC TEMPERATURE SENSING FOR ACCURATE CONTROL
- EVEN GREATER OUTPUT
- RETROFIT KITS TO UPGRADE *OLD FAITHFUL* - SMOKE PROCESSOR III

# NATIONAL CLASSIFIEDS & DIRECTORY

## FOR SALE

2 Yamaha S250 x Speaker cabs : 250 watts, RMS, Tolex covered handled, corners, weigh 20kg. 550mm x 440mm x 250mm deep, exc. cond. \$1400 ONO (079) 727 441.

30 Metre 16 way Canare Multicore. Exc. Cond. \$700. Cc's Light & Sound. Ring for free catalogue. 008 803 064.

Abbey Maximum Headroom II Amplifier 350W x 350W @ 4 Ohms. As new. \$750. Cc's Light & Sound. Ring for free catalogue 008 803 064.

Akai S700 sampler & 50 disks & mem expand \$500 (03) 786 4137.

Amp Perreux 8000B \$2000; Tapco CP 500M 500 watts \$500; MXR dual limiter \$300 (055) 992 385.

Bose 1801 \$1000; Rock & Roll Music, 008 804-994, (02) 550-3828.

Chiayo Diversity Radio Mic. with Headset, Lapel or Handheld Mic. \$585 (02) 605.1203.

Citronic mixer SN330 in VGC \$370 (03) 689 4226.

Complete Double Renkus-Heinz P.A. & Lighting system for sale. Over \$85,000 worth. Ph. Rex & Lee 065.723 548 or 018.499 551 for list.

DBX166 Comp./Limiter. Mint Cond. \$990 o.n.o. Contact Tony (02) 664.2380.

Disc console with 2 turntables, mixer & 250 watt amplifier, black carpet finish \$579 BH (03) 306 4675.

Disco Unit, 2 Pioneer t/tables, BVI 8 channel mixer, built in equaliser, 250W Eminor speak. amplif. 3 light columns, Cost \$5000 Sell \$2200 (03) 335 3841.

DJ Equipment, 2 Technics 1200 turntables, mixer in console, amplifier, tape deck plus speakers with extras, \$3500 or n.o. (08) 293 3020.

Eminor 400 watt 12 channel desk, with road case, very good condition, \$600 o.n.o. (08) 362 3193.

Etone 805 New recone \$300; Rock & Roll Music, 008 804-994, (02) 550-3828.

Foldback system session wedges 12" with horns 300W

Power Amp - \$960 (02)605.1203.

Gates Alison Keyplex with Keying Range, Threshold and Release \$190 each, (02) 605.1203.

Graphic equaliser, 32 band, studio quality, excellent cond. \$300 (08) 346 4199.

Guitar speakers JBL E120 & ATC STD PDM reconed. \$350 each, (02) 605.1203.

H/HM900 \$1200; Rock & Roll Music, 008 804-994, (02) 550-3828.

Head vocal microphone, like Madonna's, wireless microphone system by Nady, new \$1995 sell \$1600. (03) 363 8653.

Ibanez rack mount digital delay unit variety of sounds, choruses flanger etc. as new \$250 (03) 486 2397.

Jands 107 \$1000; Rock & Roll Music, 008 804-994, (02) 550-3828.

Jands 210 \$1000; Rock & Roll Music, 008 804-994, (02) 550-3828.

Jands Event 48 (Mint) in roadcase \$6000. Rock & Roll Music, 008 804-994, (02) 550-3828.

Jands J600 \$600; Rock & Roll Music, 008 804-994, (02) 550-3828.

Jands J920 \$1200; Rock & Roll Music, 008 804-994, (02) 550-3828.

Jands SR3000 \$2500; Rock & Roll Music, 008 804-994, (02) 550-3828.

Jands/JBL System 700 \$3000, Rock & Roll Music, 008 804-994, (02) 550-3828.

JBL 4430 Studio monitors, Bi-radial horns and 15in speakers, minimal use and in VGC, \$4200 the pair. (03) 853 5820

JBL E120 \$250, Rock & Roll Music, 008 804-994, (02) 550-3828.

JBL2226, 2206. Best price in town. Rock & Roll Music, 008 804-994, (02) 550-3828.

K120 \$200, Lots More. Call for details. Rock & Roll Music, 008 804-994, (02) 550-3828.

Kawai Q-80 MIDI sequencer \$800, Digitech 256XL multi-effects unit \$800., Yamaha DX9 synthesizer, \$600 (08) 371 1339

Light boxes 2 boxes 1200 x 600 x 300mm and controller all cables and globes; suit disco or party use. \$350 Dave BH (03) 827.0044, A.H. (03) 842.8131.

Lighting dimmer, 12 channel 2k per channel, 4 scene desk, 3 phase, \$650 (059) 643 364.

Lots More. Call for details.

LSC Focal 48 channel lighting console with road case. A/B switching, 12Ch. scene Matrix and Chaser. Analogue & Digital DMX-512 Output. Very

## BUSINESS FOR SALE



WORKING PARTNER OR W.I.W.O. SALE

ESTABLISHED 1985

PA & LIGHTING HIRE  
SERVICE & REPAIRS  
SALES & INSTALLATIONS  
CONSULTATION & DESIGN  
EDUCATION & TRAINING  
CORPORATE & PRODUCT LAUNCH  
BGM & PRIORITY PAGING  
REHEARSAL ROOM FACILITIES

ONLY NTH NSW PRODUCTION CO.  
EXPANDING MARKET  
HUGE POTENTIAL FOR GROWTH

FULL DETAILS & FIGURES ON APPLICATION  
PHONE TIM CARLYLE ON (066) 217614



### Phil Allison Electronics Technician

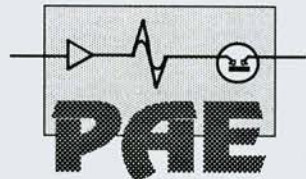
- ★ Personal service from Sydney's most experienced tech in all makes of PA and Stage Amplification.
- ★ From Amcron to Zpe and everything in between (Even Jands!!) expertly repaired and restored to 1st class operation.
- ★ Tube Amps, desks and FX units also welcome. All types of mics, including Radio Mics a specialty.
- ★ Quick turnaround on most jobs (2 to 3 days).
- ★ Business located in Ashfield area.

**Phone (02) 799 8242  
(6 DAYS)**

### Export or die!

Mailing list service available to U.S, U.K and int', Lighting (585), Sound (653) and A/V companies. Direct mail is No.1 marketing tool.

**Phone : Tim Grafton (02) 876 2745**



### PAE Professional Audio Electronics

**CRAIG MARSHALL**  
Electronics  
Technician/Engineer

SPECIALISING IN :

THE SERVICE & REPAIRS OF ALL TYPES OF PRO AUDIO EQUIPMENT, MIXING DESKS, EQ's, X-OVERS, DIGITAL FX UNITS, SOLID STATE & VALVE AMP'S, TAPE, C.D. & DAT RECORDER'S DIGITAL AUDIO, & STUDIO ELECTRONICS.

DBX, SOUNDCRAFT, MIDAS, NEVE, SONY, BSS, AKG, KLARK-TECHNIK, YAMAHA, ALESIS, OTARI, AKAI, JANDS, CARVER, CROWN, SHURE, PHASE-LINEAR, BEYER, MARSHALL & FENDER.

**PH: 645 1236 FX: 646 7028**  
421 GRAHAM ST, PORT MELB. 3207

ADVANCED  
LIGHTING  
EQUIPMENT



Sydney Australia

Specializing in metal equipment and engineering services for entertainment, exhibition and general industry.

● design ● manufacture ● sales ● service ● hire ● installation

trussing systems-alloy & steel - lighting bars - telescopic push-up & winch-up stands - hooks & clamps - portable stage risers - customized mic. stands - custom brackets, frames & adaptors - set construction - video trolleys - TV brackets - drum kit repairs, modifications & rejuvenations - rigging accessories - transportation frames, dollies & cases - general engineering - architectural metalwork - site welding - lighting sales - installations - design and total project management.....

24 Shirlow St, Marrickville NSW 2204 Ph: (02) 557 4141 Fax: (02) 557 4135



# Music Capital Productions

## SOUND & LIGHTING

- ◆ TOURING PRODUCTION
- ◆ DRIVEWAY HIRE
- ◆ SALES
- ◆ INSTALLATIONS

**NEW PREMISES  
OPENING 8/11/93**

### AGENTS FOR:

Jands, Soundcraft, Shure, JBL,  
Rane, Urei, SCV, LA Audio, Klark  
Teknik, Nakamichi, Denon, AKG,  
Microtech-Grefell, Clear-Com,  
Neutrik, Burndy, Alcatel, Mogami,  
Lycian, ATC, Selecon, Omnimount,  
Martin.

**TRY US FOR LOW PRICES!  
Phone for a quote.**

**UNIT 3  
5-7 HINKLER ST  
(PO BOX 930)  
TAMWORTH  
NSW 2340  
Ph: (067) 622452  
A/H: (067) 671148  
Fax: (067) 622453  
Mobile: 018 659458**

### FOR SALE

good condition. \$2000. CC's  
Light & Sound. Ring for free  
catalogue. 008 803 064.

LSC quad pack 4 channel dim-  
mer with master, used twice,  
EC. Retail \$1050 sell \$400  
(03) 878 9707.

Microphone EV ND 457 B ex-  
cellent vocal mike Black Free-  
dom front feed back, Retail  
\$599 sell \$400 (03) 314 6571.

Microphone stand upright EC  
\$35 (03) 457 2061.

MIDAS 36-8-8, Classic.  
Sound, Parametric EQ, 6 Aux.  
Sends (pre/post) fully serv-  
iced, includes dual power sup-  
plies and Roadcase. \$20,000.  
Rock & Roll Music, 008 804-  
994, (02) 550-3828.

Mixer Yamaha PM700 in  
Ragone wheel roadcase, 12  
channel desk, balanced in-  
puts/outputs, 3 stage eq. on  
all inputs/outputs, stereo aux  
inputs, talkback excell FOH  
desk or easily modified or 4  
out foldback desk, incl. serv-  
ice manual and spare front  
panels, \$1399 aft. 6pm (03)  
557 1650.

Mixer: Gemini PMX-15  
Scratch-Master DJ mixer, 2  
phono channel 2 line, trans-  
forming switches, mic. etc. GC  
\$300 (03) 696 1718.

Mixer: Yamaha EMX300, pow-  
ered, 12 channel (077) 757  
550 am.

Multicore Jands 27 send, 27  
return, Cannon & Neutrik  
plugs, 30m length, studio use  
only, EC \$950 (03) 898 5815.

Oberheim DP1 Sample Play-  
ers. Plays E1, E2, Emax, Mi-  
rage Discs, 200 Sounds, \$385  
(02) 605.1203.

Optikinetics effects projectors  
(2), model Solar 250, 1 at  
\$280 or 2 for \$500 (03) 349  
2824.

PA equipment, 12 channel 400  
watt mixer/amplifier, with EQ  
reverb \$900, speakers, 2 x  
12in Carvin, 150 watt \$90 ea.  
mic stands, straight \$25 ea.  
Pearl microphone \$80 (08)  
352 5507.

PA speakers, JBL speaker  
boxes J bin, unloaded, \$300  
o.n.o. the pair (08) 337.9786.

PA System: 2 x 200 watt, col-  
umn speakers & mixing desk,  
plus canvas travel bags \$1800  
ONO (077) 215 639

Peavey M3000 pwr amp, as  
new, 210W into 4 ohms or  
300W/2 Ohms, LED display,  
compressor, can view in Mel-  
bourne \$550 Roger (054) 823  
464

Peavey MK III - 12Ch. \$1200;  
24 Channel \$2500. Rock &  
Roll Music, 008 804-994, (02)  
550-3828.

Perreux 6000B (Mint) \$1500;  
Rock & Roll Music, 008 804-  
994, (02) 550-3828.

Perreux 6000B power amp.  
300W RMS per channel, new  
\$3740 sell \$1500 (03) 898  
5815.

## JANDS EVENT 48 PLUS including ROADCASE

Absolutely Never Used

**\$7,000**

All offers considered

**Black Express  
Light and Sound  
(02) 559 4363**

## Glow-tape

from



This glow-in-the-dark tape is ideal for marking low  
light areas. It glows to a yellow-green colour that  
can remain illuminated for hours and recharges  
every time the lights come up. Now in 25mm x  
5m and 25mm x 10m rolls with a strong adhesive  
backing, making it durable enough for high traffic  
areas. For flexible surfaces we recommend  
**rosco** phosphorescent paint for marking  
hazardous areas or placing people or props in  
blackout situations.

AVAILABLE FROM YOUR USUAL  
ROSCO DISTRIBUTOR OR FURTHER  
INFORMATION FROM  
ROSCO AUSTRALIA PTY LTD  
P.O. Box 873, Artarmon, 2064

### PATRICK CAHILL & ASSOCIATES

## THEATRE CRAFTS

*Sound & Lighting*  
for entertainment

**Hire • Sales • Service**

### System Design & Installation

Lighting-Dimmers-Effects-Drapes-Smoke Machines  
Colour Filters-Moving Lights-Strobes-TV Lighting

Strand • ProLite • Startec • LSC • Rosco • Kupo  
QuartzColour • Jands • Coemar-TAS • Bytecraft

**Phone: (09) 227-7015**

**Fax: (09) 328-2787**

**Mobile: 018 917 235**

**468 Newcastle St., Perth, W.A. 6000.**

# GOLIGHT

## ADELAIDE BASED PRODUCTION

JBL Modular Systems up to 12,000 Watts  
 Composite Systems-R4 & Mongoose  
 up to 4,000 Watts  
 Perreaux & Australian Monitor Amps  
 Active 3Way Sidefill/Drumfill  
 FB up to 7,000 Watts  
 32 Channels FOH  
 Top Quality Outboard Gear  
 Crew, Rigging & Lights Available.

Contact: Tim Marshman  
 12 Ruthven Avenue,  
 Magill, SA 5072.  
 Phone: (08) 31-2891  
 Pager: 016 080 # 840 924

## BRISBANE BASED

STAGE LIGHTING & TRANSPORT

# TRANSLITE

PROFESSIONAL CREW AND  
 P. A. SYSTEMS  
 AVAILABLE DAILY OR  
 WEEKLY RATES

CALL  
 DAVE KAY  
**018 88 5490**  
 FAX: (07) 290 2668

# HECTIK

Entertainment Lighting  
 Hire & Production  
 Services for Theatre,  
 Concerts & Promotions

Roboscan Pro218  
 Trackspots  
 Available for Hire

# 827 9036

Mobile 018 389 953

24 Wilson Street,  
 South Yarra  
 Melbourne

# ELECTRIK

# ELECTRIC SUNSHINE

INSANE LIGHTING COMPANY - PHONE: (02) 660 6000 OR FAX: (02) 552 1111

GET SIDEWAYS WITH

## "WE USE & RECOMMEND JBL SYSTEMS"

### SYSTEM A:

JBL DOUBLE 4 WAY STEREO.  
 8,000 WATTS F.O.H.  
 6,000 WATTS F.B. WITH 6-8 SENDS  
 ACTIVE.  
 40 CAN LIGHT SHOW. OPERATORS  
 INCLUDED.  
 • ALSO TRIPLE & QUAD JBL  
 CONCERT SYSTEMS  
 AVAILABLE.

*Joe's P. A. Hire*  
 Phone & fax (02) 564-2521

### SYSTEM B:

RENKUS HEINZ DOUBLE 3 WAY.  
 7,000 WATTS F.O.H.  
 6,000 WATTS F.B. WITH 6 SENDS.  
 30 CAN LIGHT SHOW.  
 OPERATORS INCLUDED.  
 • ALSO SINGLE RENKUS HEINZ  
 AVAILABLE.

### SYSTEM C:

COMPOSITE SYSTEM

## CENTRESTATE SOUND & LIGHTING

TOURING PRODUCTION,  
 TRANSPORT, DRIVEWAY  
 HIRE, RETAIL SALES

**PA:** 32ch Soundtracs,  
 800W TO 18,000 WATTS  
 Australian Monitor QMX,  
 F600 & SLAM boxes, BT 350  
 Delay System.

**FB:** 8 Send Spirit mon. desk,  
 wedges, side & drumfills.

**LX:** Instinct 48, 16 - 80 cans,  
 1000w profile spots, 2  
 followspots & F/X. Trees,  
 trussing, blacks and risers.

AVAILABLE DAILY,  
 WEEKLY ANYWHERE



Call Allan Brown  
 ORANGE NSW

# 063 620-587

## FOR SALE

Road case professional with heavy duty castors and lift off 2/3rds lid, Session catches and handles, internal size 20in x 22in x 23inH; suit amp racks, multicores, speakers etc. as new, cost \$550 sell \$200 (03) 338 2547.

Road case, top opening on casters, h/duty, 4ft 3in L x 3ft 4in W x 2ft 3in H, EC \$200 STEVE, BH (03) 870 6100.

Roadcase, 3 rack space, opens both ends, with session catches etc. br. new hardly used, \$200 (03) 840 1710.

Roland RE-501 chorus echo VGC \$399 (03) 521 0404

Soundcraft 16/2 with 50m Multipin snake \$1600. Rock & Roll Music, 008 804-994, (02) 550-3828.

Soundcraft 24-10 Delta Monitor Console, Mint Cond., with roadcase. \$16,000. Rock & Roll Music, 008 804-994, (02) 550-3828.

Soundtracs 16/4/2 3-Way EQ Swept mid fully serviced. \$1400. Rock & Roll Music, 008 804-994, (02) 550-3828.

Speaker boxes, (2) bass cabinet with JBL 2225's, just reconed \$500 ea. (0058) 215 637.

Studiomaster Series 5 16/4/2 with case, 3-way EQ (swept Bass & Mid) \$2500. Rock & Roll Music, 008 804-994, (02) 550-3828.

Tannoy HPD 12 & 15 in stock; Rock & Roll Music, 008 804-994, (02) 550-3828.

Tascam 244 4 track cassette, 1 of the best 4 track cassettes ever built, includes parametric equalizer, multiple buzzing, DBX compression, excellent cond. with original packaging & manual, \$950 (08) 258.4276.

Tascam 644 4 track recorder, 8 channel mixer and FSK (midi synch) built in, as new, in case \$1500 Rob. (03) 625 2668.

Tascam M3500 32ch. fully metred console, Fostex E16 Recorder plus loom. Exc. Cond. \$17,500.

Tascam MTS-30 midi Tape Synchronizer : Absolutely brand new \$300 (071) 552 011.

Tascam Porta-One 4-Track Portable Studio \$385 (02) 605.1203.

Urie 1178 \$2450; Rock & Roll Music, 008 804-994, (02) 550-3828. Klark DN27 \$1000 Rock & Roll Music, 008 804-994, (02) 550-3828.

Valley People Dynamite \$700 Rock & Roll Music, 008 804-994, (02) 550-3828.

Yamaha 2 x 4115 bins, 15in speakers plus horns, GC, \$1400 (059) 685 259.

**Advertise  
Here for  
LESS \$\$\$  
than you  
thought!**

Call Carline: (02) 876-3530

## ADVANCED AUDIO

**PA + LIGHTING HIRE**

**REHEARSAL/RECORDING  
STUDIO**

**A SYSTEM:**

32-8-2  
8-16Kw  
8 sends 3i-Amd FB  
60-80 cans

**B SYSTEM:**

24-4-2  
4-8Kw  
4-5 sends FB  
20-40 cans

**Various Smaller Systems**

**SALES ■ SERVICE ■ TRUCKING**

QLD. (074) 424 233  
Rod Watts. Malcolm Prendeville.

MELB. (03) 416 1433  
Ben. Steve. Graham.

# HOT ICE

**PRODUCTION SERVICES**

**PROFESSIONAL SOUND  
REINFORCEMENT  
and  
LIGHTING SERVICE**

System A  
6,500W F.O.H 3,000W F.B. 6 SEND  
System B  
3,500W F.O.H 3,000W F.B. 6 SEND

Ph: Mark Langfield  
(02) 608 1104  
015 216 985

## FERNANDEZ musicentre

# CAIRNS

NORTH QUEENSLAND

**Concert P. A. Systems.  
Multi-Pin Lighting**

( up to 100 cans available)

**Professional Experienced  
Operators And Crew.  
Instrument Hire.**

**Qualified  
Service Technician**

**Soundcraft Desks, Jands  
Amplifiers, JBL & Peavey  
Speakers. Yamaha FX'S.  
Transportation.**

PLEASE PHONE:  
**MARK WILLIAMS**

ON **(070) 518519**  
OR FAX **(070) 512979**

## SEND IN THE CLOWNS



Alternatively, for a little extra - often for less - you could send in Jim & John, Sydney's most experienced and respected production team

## THE PUBLIC ADDRESS CO.

**Quality Sound & Lighting**

Packages from  
\$250 to \$1250 per night

**(02) 799 7219**

## Music Capital Productions

Supplying  
**professional  
Sound & Lighting**  
equipment to  
organisers and  
entertainers in the  
country\*.

12000 wat: horn-loaded P.A.  
JBL/Martin components.  
32,8/2 Venue Desk.  
8 send, 6000 watt FB.  
48 channel lighting.  
Pro crew & transport.  
PO Box 930, Tamworth 2340



Ph:(067)622 452  
Fax:(067)622 453

\*Tamworth based.

## Wild Gravity

• SALES • HIRE • INSTALLATION

# 10.000 WATT

**DELTAMAX 1152  
IN NORTH QUEENSLAND  
WITH 32 CHANNELS  
F.O.H. AND 400B FB,  
AND OR 80 PAR CANS  
WITH 96 DIGITALLY  
CONTROLLED CHANNELS,  
CHAIN BLOCKS AND  
CLS TRUSSING**

PHONE NOEL ANTHONY  
**(077) 21 3540**

OR FAX

**(077) 21 1375**

TOWNSVILLE

106 Boundary St. Townsville Qld. 4810

## FOR SALE

Yamaha 2404 24-4-2 fully serviced with roadcase. \$3500. Rock & Roll Music, 008 804-994, (02) 550-3828.

Yamaha 2408 24Ch., 8 Send. Monitor Mixer in Road Case. Exc. Cond. \$4000. Cc's Light & Sound. Ring for free catalogue. 008 803 064.

Yamaha amplifier power mixer, model EM300, 250 watts per speaker, 12 channels, 2 Altec 15in spills with cables, as new, 1 multi-core, 16 change, with 60ft cable, 2 Beyerdynamic microphones, new, still in box, with leads, \$4150 can separate. (08) 265 1693.

Yamaha CMP700 Ring for a deal; Rock & Roll Music, 008 804-994, (02) 550-3828.

Yamaha Crossover model 1030 can be used as 3-way or 2-way. PWO \$480 (03) 764 3935.

Yamaha FX900 - We'll talk

turkey. Lots More, Call for details. Rock & Roll Music, 008 804-994, (02) 550-3828.

Yamaha KM802 Mixer 2 x Mic, 6 x Line, 3 x FX Sends, 3 x Stereo Returns \$385 (02) 605.1203.

Yamaha MT120 multi-track recorder \$550, graphic equaliser \$150, Toa 6 channel mixer \$350, Kawai Q80 sequencer \$800 (08) 356 2000.

Yamaha PC-2605 Amplifier 400W x 400W @ 4 Ohms, as new. \$1500 Cc's Light & Sound. Ring for free catalogue. 008 803 064

Yamaha PM700 12 Channel Mixer in Road Case. Exc. Cond. \$1000. Cc's Light & Sound. Ring for free catalogue. 008 803 064.

Yamaha SPX900 \$1180; Rock & Roll Music, 008 804-994, (02) 550-3828.

Yamaha SPX990 in stock - ring for a deal; Rock & Roll Music, 008 804-994, (02) 550-3828.

Yamaha TX812 Sound Module Multi Timbral with FX5 \$385 (02) 605.1203.

ZR80 Industrial Fog Machine 5 Litre, Heavy Duty, 50 metre remote \$882 (02) 605.1203.

## STOLEN

Stolen from Canberra Theatre Auditorium, Canberra Theatre Centre, London Circuit, Canberra: Sometime between 5.30pm Friday 8/10/93 and 8am Monday 11/10/93: Soundcraft Delta 16:4:2 Mixer; 14 deluxe mono input modules, 2 stereo input modules, 4 subgroup/tape return modules, 1 stereo master module. Inputs 1- 6 may be damaged as multi core was ripped out not unpatched. The thieves also left the power supply behind so any Soundcraft dealers with enquiries for power supply to suit a Delta, please take note. Teac C.D. player also taken. Call Eric on (06) 243 5759 or Fax (06) 243 5704.

## FOR SALE

COEMAR TITAN LIGHTING EFFECT \$7600 - IDEAL FOR LARGE CLUB R TOURING BAND. BUD LIGHTING, 1 & 4ch, \$12 METRE. NON-NEON, 30' ROLL \$250. LIGHT CHASERS STARTING AT \$160 EACH. DOME TWEETERS JBL SIMILAR \$200. 20" MIRRORBALLS \$120 EACH > WILL SHIP ANYWHERE. SUNSET MOBILE ENTERTAINMENT (03) 625-4545.

## HOW TO PLACE A CLASSIFIED:

1. Call (02) 876-3530 before 6pm on the 26th of the month.
2. Leave the rest to us.
3. You pay very little - just \$9.60 for 10 words, then 60c per word. For that you get NATIONAL exposure!

## Employment Wanted

"Why is the lighting guy wearing a radio-active suit and welding goggles ??? Phone: Matt (018) 020 967.

Philip Lethlean available for your lighting and staging productions. Phone/Fax (03) 399 9841 Mobile 018 393 352.

STOLEN notifications and EMPLOYMENT adverts are FREE in Connections - an industry service. Use it! Fax it to (02) 876-5715



**damien gerard**  
SOUND STUDIOS

## Professional Recording & Rehearsal

Tax return back - wondering what to do?!

Call us and take advantage of our special deals on our new 32 track facilities thru Oct.

Call Marshall for details or pop in

64-80 Wattle Street  
Ultimo NSW 2007  
Tel: (02) 660 8776  
Fax: (02) 692 9915

**MCI 2" 24 TRACK**  
including remote locator only  
\$7,200

has only been used in studio

Call (03) 876 1834 after 6pm weekdays, all weekend



## DARLING HARBOUR STUDIOS

24 Hours a Day  
REHEARSAL ROOMS WITH QUALITY GEAR & GREAT ACCESS  
NOW OPEN FOR BUSINESS  
All booking bands have the chance to win a FREE professionally recorded Demo or Video  
Call now on (02) 211-1474

## SOLVE YOUR PROBLEM!

Talk to Studio Solutions for:

- \* REPAIRS \* MAINTENANCE
- \* SALES \* INSTALLATIONS
- \* HIRE \* Ring Now!

Studio Solutions, Suite 105, 511 Pacific Hwy, Crows Nest 2065  
NSW. Phone: (02) 906-4363. Fax (02) 439-6444.

## ENREC STUDIOS 32 TRACK RECORDING

WE HAVE ULTIMATE IN ABORIGINAL SOUNDS FROM TRADITIONAL DIDGERIDOO MUSIC TO THE LATEST IN TRIBAL ROCK. SPECIALISING FOR FILM AND TELEVISION.

PHONE OR FAX DEMO.

ENREC STUDIOS:

PHONE: (049) 36-1376

FAX: (049) 36-391

# ACTIVITY FUN PAGE

## GUESS WHAT? A DRUMMER STORY!

The Damien Gerard drummer incident has finally happened so I thought I would share it with you. A new band booked in to rehearse and showed up only a little late with the drummer arriving last (nothing unusual in this).

While the band loaded their gear off the street and into the studio through the normal entrance the drummer backed his van into the car park and proceeded to unload an enormous kit - frames, double kicks, sand bags and even a separate kick drum pedal case. As he unloaded, the drummer was seen to be chatting to and watching the other band members loading their gear through the main entrance.

Now here's the good part - for reasons known only to himself, the drummer then ignored the normal street entrance and began to load the ENTIRE drum kit up the old (narrow) fire escape ladder and onto the ramp. This of course took quite some time and when asked how he was going, and told maybe it would be easier through the front door, the drummer looked up blankly and replied that "Everything was great, no prob's mate, except the kick drums are a bit tricky!!?" (The ladder is 12" wide!)

The kit was finally dragged in and assembled and by the time the now exhausted drummer was ready, the band only had time for four numbers before their booked time expired!

As they packed up the by now slightly upset band members and our staff tried to explain to the drummer about how to load out. He seemed to understand- however once he had packed up, and long after the other band members had gone - you guessed it. Lo and behold, he loaded everything DOWN the ladder - and was even seen to be staring in shocked disbelief at another band loading in the normal way during one of his last ladder descents, carrying in his left hand a 120kg 26" double reinforced over sized, extra loud kick drum and desperately clinging to the rungs with the other!

-From Marshall at Damien Gerard Sound Studios, Sydney.

By all means send your  
Drummer stories and jokes to:  
Fax (02) 876-5715, or:  
PO Box 439, Epping NSW  
Australia.



DECEMBER/JANUARY bumper issue on  
sale December 15th - Deadline Nov. 30th



*Your favourite supplier of  
Affordable, Quality and Reliable  
sound and lighting effects, is  
moving to new premises.*

*As of Monday 25th October  
Australian DJ Supply Co. will be  
operating from:*

**13 - 15 BRIDGE ST  
RYDALMERE  
NSW 2116**

**PH: (02) 898 1111  
FAX: (02) 898 1222**

# GEAR

## MOBILE DISCO TIPS

### Taking the first step.

So you want to be a Mobile DJ. What's the first step to take? Think about what you are getting yourself into; are you doing it for your ego or is it the money, or maybe you enjoy the music and like to be a performer? Whatever the reason, you must learn the ropes. The only way to learn this trade is by actually getting a job as a DJ or helping someone that is already a DJ. You can contact other DJ's in your area and ask them if they require a roadie, or are they looking for DJ's to be trained.

It's important to have a real understanding of what you are doing once you choose to go out on your own. You should start by hiring the equipment at first, rather than buying it. This way you get a feel for what suits you best. The other is your music library. There will be lots of records/CDs etc. that you will have to buy, but be careful not to buy everything you like. Keep in mind that the music you like, may not be the same as what your clients like. When choosing your music library, have a cross section of music; something for everyone.

Word of mouth is the best form of advertising and it's cheap if you do it the right way. Keep in mind that everyone you come in contact with is a potential client. Here are a few people that can help you get that first job. By now you have printed some business cards; not those ugly black cards with silver writing, but pick something that's different and looks good. Start handing them out to everyone you meet- even every store you go into.

Try calling some reception centres in the area, or local clubs. They are always having socials and you could offer them a discount for the first booking.

By now the phone should be ringing. If you are using your home phone as a business phone, you can be missing calls. Not many people like to leave a message on a machine, so you might like to look at getting a pager or voice mail.

So someone rings and wants a price on a mobile disco. What do you say? Never start with the price; always turn it around and say "The price? I'll get to that. Tell me .....". Find out details about the party your quoting on, get their name, address, phone number, date and what sort of party. Find out if they have a budget or another quote, then go into what you can offer them, leaving the price till last. Once they are happy and you feel that they can't resist your offer, then say the price.

Always get there early, to avoid any problems finding the place. Once you are there, introduce yourself and setup. Play background music as all the guests arrive. Before the night comes to a close thank everyone for coming on the microphone (!! -Ed) and give yourself that all important plug, "Call me for your next party, thank you and good night".

Happy DJ'ing!

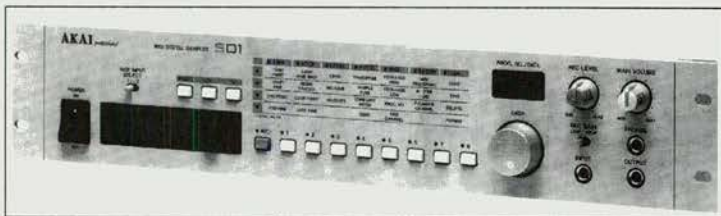
If you need other helpful tips or a video tape on how to make it in the world of DJ'ing, call Sunset Mobile Entertainment: (03) 625 4545.

From Akai we have the new SO 1 Sampler. This 16 bit midi digital sampler allows a DJ control loops and sample pitch adjustment by a

single note or by a bank. By connecting the SO 1 to your mixer you can sample up to 8 different sounds with a duration of 15 (extendible to 30) seconds. The SO 1 allows you to create breaks combining a number of sounds or to mix with alive scratch sound. You can repeat instrumental breaks using phrase by phrase sampling and the loop function or replace ac-

cent phrases. You can also sample at a pre-set pitch for mega or master mixing. The SO 1 comes with 50 pre-recorded floppy discs of Techno and Dance samples, audio FX and instrument grabs and there is a library of 250 discs available. All info can be saved onto a 3.5 inch floppy. Available from Blitz Sound & Lighting. Call (02) 361-0077.

**LEM** are known for robust upmarket disco gear in Europe, and Noisebox Entertainment Systems now offer the DJ-PRO mixing console. Built to broadcast quality spec, the DJ-PRO allows for 16 sources, including 4 balanced microphones, has A-B crossfade, and 3 master outputs. A sampler can be addressed from any channel individually, and inserts on the three outputs. A powerful machine! Priced at \$4,295. Noisebox call (02) 890-1709.



cent phrases. You can also sample at a pre-set pitch for mega or master mixing. The SO 1 comes with 50 pre-recorded floppy discs of Techno and Dance samples, audio FX and instrument grabs and there is a library of 250 discs available. All info can be saved onto a 3.5 inch floppy. Available from Blitz Sound & Lighting. Call (02) 361-0077.

**Denon's** Karaoke HMA-1000 mic-mixer/amplifier gives 70w/channel, & has a vocal reducer, 4 audio & 4 video inputs. Record your Karaoke pictures and sound onto a VCR if you have a Handicam- for a great souvenir? \$1399 rrp, from AWA.



**Get Your Hands On This DJ Mixer**

**By LEM**

- ◆ 16 sound sources
- ◆ 3 band Equaliser
- ◆ A/B Crossfade
- ◆ 3 Master Outputs
- ◆ Address a Sampler or effect from any channel

Available from  
**NOISEBOX ENTERTAINMENT SYSTEMS**  
(02) 890-1709

WRITE IN 147 ON SERVICE CARD

# CLUB TROPPO

Club Troppo is the brainchild of two Australian promoters, Harry Della and Marc Christowski of the company Rock Circuit Promotions.

The venue opened in September 1991 and has attracted crowds on a consistent basis of up to 2,000 every Saturday night ever since. Housed in the Central Coast Leagues Club in Gosford NSW, Club Troppo creates a party atmosphere with 20' rotating animal banners, UV splashed walls and features various top DJ's with a play list from the current Top 40 to classic dance and party hits.

The audio, lighting, video and special effects were based on Della and Christowski's own design concepts and was installed by Total Concept Productions.

Club Troppo offers different themes every week which provides variation for the clientele. Each week many prizes and give-aways from T-shirts to Holidays, are competed for and distributed.

- Promoters/Owners:** Harry Della and Marc Christowski
- Lighting Design:** Total Concept Productions (TCP) & RCP
- Lighting Operators:** Joe Accurso, Ryan Scriven
- Sound Design:** TCP's Richard Skarzynski
- Main DJ's:** Harris Stamos, Rob James & John Alsop
- Video:** TCP's Richard Skarzynski
- Interior Design:** Marc Christowski
- Typical Door Charge:** \$7
- Entertainment:** Saturday-Disco (Themes) and Midweek-Live Shows

## Lighting

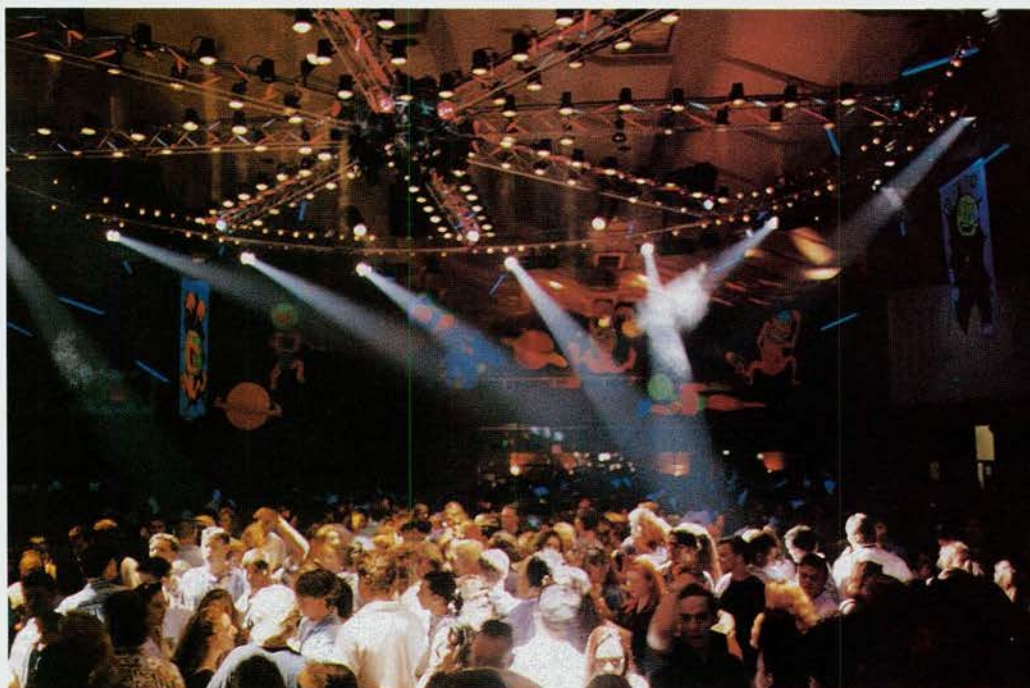
- 16x Coemar Microscan 400 MSR and Controller
- 2x TAS Synchros UV Tubes
- 50x UV Tubes
- 8x Neon Triangles
- 164x Pinspots
- 2x White Lightning Strobes
- 38x 120 Scanners
- 2x Molefays
- 1x Four Flowers System
- 16x Truss Warmers
- 1x 9mtr. Circular Truss
- 1x Mercury Controller
- 2x TAS Foggers
- 80x Mtrs. of Budlight
- 10x Rotating UV Banners

## Audio

- 4x JBL System 44 Speaker Boxes
- 2x Revolver Sub Bass Bins with JBL 2226 Drivers
- 5x Jands SR3000 Amplifiers
- 1x Yamaha Graphic EQ
- 2x Brooke Sirens X-overs
- 1x Denon CD Player
- 2x Technics Turntables
- 1x Rane MP24 Mixer
- 3x Shure 58 Mics

## Video

- 4x Barco Monitors
- 4x Sharp LCD Projectors
- 4x 12x9 Motorised Screens
- 1x Akai AVU8
- 2x Panasonic F70 VCR's



## CLUB PEOPLE SAVE 25%!

**Have Connections rush delivered: \$29.50/year!  
Call (02) 876-3530 right now, or use the  
FREEPOST coupon in this issue. Subscribe!**

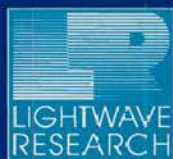
# Engineered As If Money Were No Object

The new Trackspot<sup>®</sup> from Lightwave Research will challenge the way you look at automated lighting. Trackspot is the versatile and affordable automated luminaire designers and operators have been asking for. Superb engineering and numerous control options make Trackspot the perfect performance tool for a wide variety of lighting applications.

Priced  
As If It  
Were

Contact your authorized High End Systems/Lightwave Research dealer for more information about the latest in lighting evolution....

**Trackspot<sup>®</sup>**



#### FEATURES

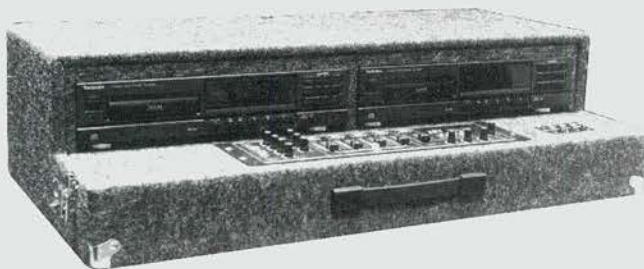
- Nine dichroic colors plus white
- Ten gobo positions (including one empty tab position for custom pattern)
- High speed shutter for variable speed strobe effects
- Smooth electronic dimming/fade to black
- Easy access dcr
- Lens options
- Microstepping
- Break resistant mirror
- Auto-off fan timer
- Lamp replacement for under **\$25**
- Lightweight, weighs 11.34 kg (25 lbs)
- Compact - 686 mm L x 221 mm W x 178 mm H (27 in x 8.7 in x 7 in)
- Externally selectable voltage: 100, 120, 140, 200, 220, 240 VAC @ 50/60 hertz

**GUVT**

**GREATER UNION VILLAGE TECHNOLOGY TOLL FREE PH: 008 773 187 FAX: (07) 358 4969  
CIRCLE 111 OF READER SERVICE CARD**

# GEAR

Nightsounds Entertainment Pty Ltd has designed and manufactured a CD console, which for disco companies who are changing over from turntables to CD, is worth consideration. The console is loaded with two Technics SPGL100 CD players and a Jet DM101 Mixer, although it can be custom built to fit any choice of equipment configuration. Recommended Retail Price is \$1450 inc.tax, fully fitted (as pictured) and ready for work. Available from Nightsounds Entertainment P/L call (02) 570-4155.



## THE CHASE IS OVER



- DX401 20 Pattern Light Chaser
- AX4 Eight Pattern Auto Chaser
- SP1 Four Channel Switch Panel
- Strong Rack Mount Design
- Ideal for Club/Mobile/Band use

### Sunset Mobile Entertainment

PO Box 411 Heidelberg Victoria 3084  
Phone (03) 625 4545 Fax (03) 457 4844

**A U S T R A L I A N M A D E**

Circle 145 On Reader Service Card for more information

# Da DJ

## Profile

### SAMMY G: BRISBANE

Hi! I'm 'DJ Sammy G' and I can't tell you how happy I am to be the first DJ, profiled in the new Niteclub Section of Connections.

I'm currently spinning at a club called 'Lucifers Nitespot' at the Redcliffe Hotel, in Redcliffe Queensland. The club is situated approximately half an hour north of Brisbane and is currently enjoying a patronage of 900-1000 on Friday and Saturday nights respectively. The club also caters for larger acts like Rose Tattoo and various cover bands, as well as featuring Go-Go dancers (both male and female) and competitions.

My true passion for music started back in '76 when the double albums 'Disco Fever' and later 'Saturday Night Fever' were charting. I realised this (then) new beat would greatly influence dance floor music. It wasn't until

a few years later that I did my first mobile gig and became very hooked on making people dance and have a good time. I worked sporadically on mobiles from '82 through to '87, when I realised, I could do a lot better than some of the DJs already in the clubs.

'DJ Parry James' taught me how to beatmix and I was on my way. I have never looked back. Other clubs I've worked include: Pacesetters & Silk- Albion Park Raceway, Red Parrot- Hilton, Boathouse- Redcliffe, Tokyo Joe's- Valley, Illusions Niteclub- Ipswich, Daydream Island- Whitsunday's and The Tavern- Kippa Ring. I have also had the pleasure of performing a guest spot on Radio B105FM.

My favourite style of music is 'Dance' with a strong Kick and a good Hook. Variety is what the patrons want and that's what I provide. On an average night I can spin tracks from AC/DC to the latest Techno, 'though I feel Techno is a fad and will eventually pass.

I also feel that there are a lot of club managers out there who are the victims of DJ's playing 'shit' music and not feeling the crowds. These clubs need J's who are good, reliable, non-egotistical and commercial. Serious dance clubs are OK, but give me a real party crowd and I'll give them a hell of a night!!!!!! I like all kinds of music and I endeavour to broaden the horizons of a crowds musical appreciation.

I hope to use my experience to produce commercial and dance remixes. I also anticipate staying in the entertainment industry for many years to come, as there are too many good times to miss out on.

**SAMMY G: Current Top Five Dance Tracks:** Mr Vain- Culture Club, Feeling Eirie- Afrika Bambatta, AB Logic- AB Logic, All That She Wants- Ace of Bass, Sweat Alalalalala Longg- Inner Circle.

**All Time Favourite Top Five Tracks:** Great Balls of Fire- Jerry Lee Lewis, You Shook Me All Night Long- AC/DC, Express Yourself- Madonna, Mickey- Toni Basil, Oh What A Night- Frankie Valli.



Sammy with security person Mitchell O'Hallo

Contact Caroline Grafton (02) 876-3530 or Fax (02) 876-5715 re. contributions &/or advertising in these NIGHTCLUB pages.

# Social Page: People



Marty Williams well known rock photographer got snapped for a change at the AES.



Left: Paul Bryant Right: Geoff Sturre of All Music Manufacturing.



Howard Jones of Studio Solutions in action at Sony Mastering.



Left: Bob Middleton, Centre Alistair Dewar both of AWA are joined by Heinrich Zant of AKG Austria, which is now owned by Harman



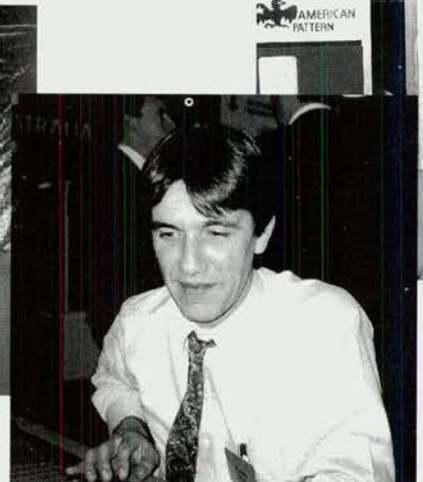
Colin Park of ARX finally is pictured!



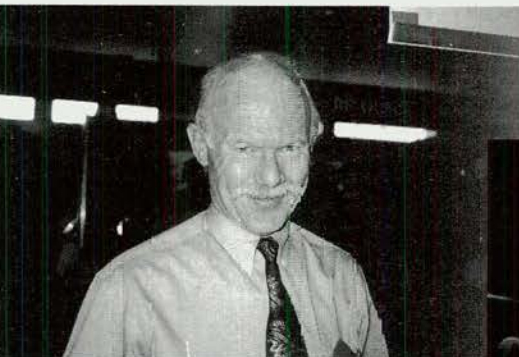
The always happy & motivated Paola Martinez of Concert Lighting Systems. Lighting Sales lady extraordinaire!



Left: Bruce Waite of Blind Lemon Pie Studio & Connections columnist with Right: Bob Doyle of Midas England.



Rodney Sammut well known Operations Tech with Sony Australia. Ask him about algorithms, BITS and bytes someday!



David Williamson of the new Ampex (top). David makes excellent coffee.



Mick James of Mick James Electronics & Queensland Nightclub Owner.



Michael Youngman of Trans Media Engineering Perth, plotting their next major (maybe international) installation after their success in Malaysia.

## ADVERTISERS INDEX

AIBA/MGA Bates	15
Amber Technology	39,48
Anything Audio	50
ARX	55
Ashton Admor	13
Audio & Recording	19
Audio Telex	35
Australian DJ Supply Co (The)	72
Australian Monitor	6
AWA	51
Bose	10
Bytecraft	59
Concert Lighting Systems	52
Coemar DeSisti	51,79
Dynalite	12
Elecoustics	70
E.S.A.	45
F. Payton & Son	47
Factory Sound	49
Graftons Sound	42
G.U.V.T.	75
Jands	2 25,27,55,56
LAVA, Clay Paky	80
Lightmoves Technology	63
Lots Of Watts	40
Magna Systems	57
Mark IV Audio (Australia)	16
Multicontact Australia	17
Nightsounds Entertainment	71
Noise Box Ent. Systems	73
PA People (The)	42
Penn Fabrication	22
Premier Lighting	29
Production Audio Services	43
Quintrix	62
RCF Australia	41
Rockard, Rock & Roll Music	44
Roland	46
School of Audio Engineering	9
Selecon	4,53
Showcraft	14
Southbank	19
Studio FX	33
Sunset Mobile Ent.	76
Syncrotech Systems	5
Syntec International	3
Universal Lighting & Audio	21

Publisher thanks all above, without whom Connections would cease!

### READER SERVICE CARD:

You can obtain information on Products and Services in this magazine where a reader Service Number is indicated. Just fill out the **FREEPOST** Reader Service Card elsewhere in the magazine, and send it to us. Post **FREE!**

# HOW TO PA

## THINKING ABOUT BUYING A P.A.? MICHAEL ORLAND\* TRACKS THE RECENT HISTORY OF PA, AND PONDERES THE PASSING OF DINOSAURS...

Part  
2

To study the evolution of the modern P.A., we must go back over 65 years B.E. (Before Elvis) to the advent of the big band era. D.J.s were spinning their hot new 78s which were no big deal to record. The singer sang next to the microphone while the band played away from it. This was not so easy to reproduce live. The band drowned out the singer.

Fossil records show the first mixing console is generally credited to the RCA Electric Co. Two 4 channel consoles full of valves were ganged together to give a massive 8 channels.

The speaker systems of this age were generally full range; i.e. no crossovers. All the sound went in and more or less came out. Variations included single 14" Rolas or multiple 4/5" columns", like in bingo halls throughout the land.

Around this time, there were two brothers Stateside- one made sound systems for moving picture houses and stadiums, evolving into the Altec Lansing Corporation. The other wasn't taken very seriously when he decided to focus on loudspeakers for musicians, and his name was James B. Lansing.

Often, while setting up systems in R.S. Ole clubs, I'll have such legends (*relics? -Ed*) of the 50's and 60's as Frankie Greaseback or Johnnie Oldfart stagger up and talk at me. "Mate", they'd say, giving a careful appraisal of the equipment being set up, "This is bullshit. When I played in bands, we'd just throw up a couple of columns, do the gig, throw it in the ute/kombi and piss off to the next gig! And it sounded good!"

In the late 60s/early 70s, musicians would often meet via ads like "Singer wanted for rock band. Must have good stage act and own

P.A." Who knows what was meant by "stage act" (juggling chickens while riding a unicycle?) but "own P.A." generally meant two columns, a kit mixer, a Shure 565SD mic and a brick, which was what we, I mean they, called valve "slave" amplifiers back then. Foldback did not exist.

One of the first big outdoor rock concerts staged in Sydney was Pink Floyd, plus a new band called Deep Purple, live at Randwick Racecourse. Here was this large multiway sound system with Altec multicell horns as used on the choppers in "Apocalypse Now", horn loaded mid speakers and huge folded horn bass bins, a cross section of which looked a little like a letter "W".

In the mid 70s things happened. Previously, the main venues for up and coming bands had been dance halls, (like the Hurstville Rivoli, where I, wearing my Lee purple jumbo cord flares, first saw AC/DC after reading about them in "Go-Set") or the local Masonic. Even the smallest P.A.s sounded noisy in these. Changing licensing laws paved the way for the "beer barn"; large auditoriums in large pubs/clubs.

Picture the scene. Drinkers sitting in a pub staring into their drinks. Suddenly, concentric ripples appear on the surfaces, accompanied by low frequency thumps as huge boxes are placed in one end of the room. In awe, the drinkers slowly look up to see huge stacks looming over them.

This was the age when dinosaurs ruled the Earth. The large beasts previously only spotted at large outdoor concerts found a new environment in the beer barns and they flourished.

Although many horn loaded

species appeared, the most familiar included the radial horn, often with a JBL 2480/82 horn driver, or the Altec equivalent, coupled with rings or slots for highs; the 45/60 single 15" JBL mid bin, or 45/80 dual 12" mid bin called the "Roy Bin", and making it all happen down low, the king of the tyrant boxes, the ACT W, credited to Artist Concert Tours Aust., as adapted from a myriad of O.S. designs, particularly the RCA "boat".

Sound was chopped up and fed to these monsters via electronic 4 way crossovers. One of each component per side was called a single 4 way. Two of each was a double 4 way. Etc.

An entire ecosystem developed around these systems. The big boxes required loaders, who were recruited from friends and vaguely interested hangers-on. Many became riggers and then operators or even owner/operators. Many of this new generation of "crews" had no idea just how recent concepts like "solid state" (no valves!) or even foldback were.

Then, almost overnight in geological (the study of rock) time, the dinosaur began to die out. Suddenly, JBL radial horn flares which had a second hand value of \$500 a pair couldn't be given away. Roys and 45/60s became saw benches or barbie fodder. (*We had a regatta with a fleet of empty redundant 45/60's once. -Ed*)

Many abandoned their systems to become salesmen. Some talk of a large scale cooling of the world's financial climate. I could say: 'never again will dinosaurs travel the Earth', but then, I once said that about flairs!

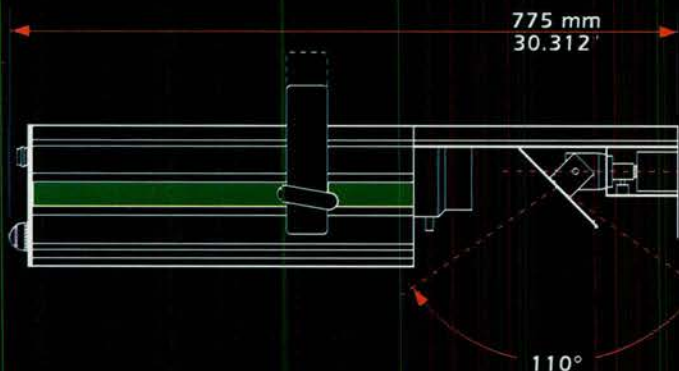
<More Next Month>

\*Michael Orland runs The Public Address Co. Call (02) 799-7219.

Pro Audio showrooms across Australia's East Coast . . .

Sydney: 432 Liverpool Rd, Enfield Ph 642 5344 Canberra: 85 Wollongong St, Fyshwick Ph 280 6411  
Melbourne: 2 Florence St, Burwood Ph 808 2111 Brisbane: 84 Newmarket Rd, Windsor Ph 857 6855





# micro scan 2

## 575 MSR

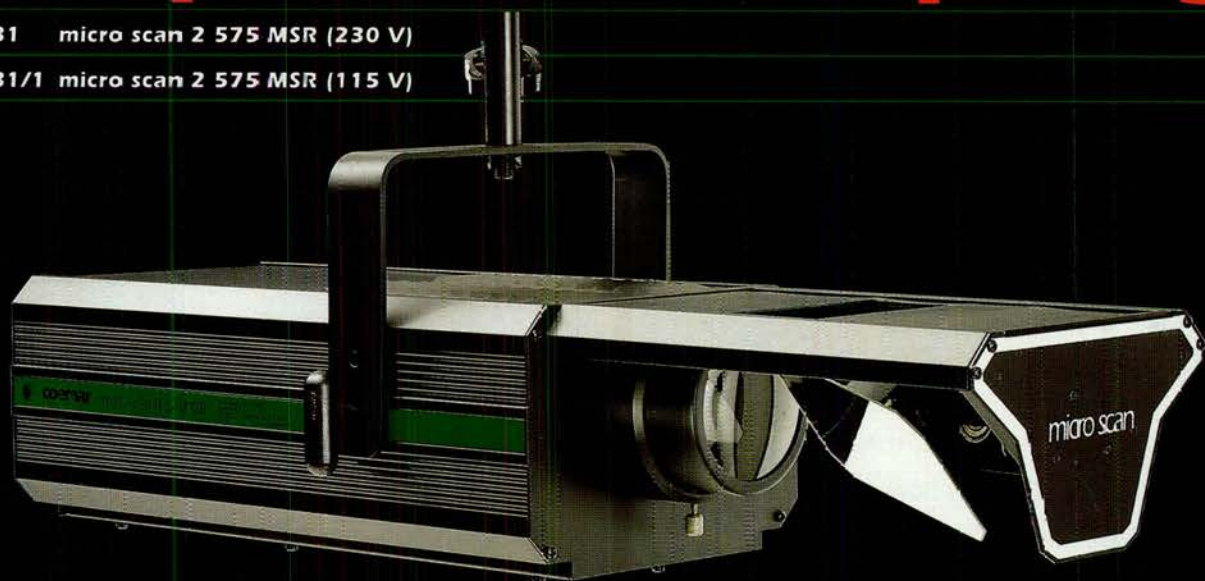


- 10 colours internal colour changer (9 dichroics + white)
- DMX 512 or special input via 3 pin cannon (6 channels)
- high quality optical condenser, formed by 1 high reflection spherical mirror, one parabolic lens and one plano-convex lens
- rotocolour effect (colours in continuous rotation) at 3 speeds (slow, medium, high)
- 0/+10V dc input via 8 pin (6 channels)
- objective: 1 fixed plano-convex lens and 1 high definition focousable lens
- rotogobo effect (gobos in continuous rotation) at 3 speeds
- dip-switches for address number projector
- beam angle: 9°
- 10 gobos (5 interchangeable)
- self-test and signal reception indicator incorporated
- long life Philips 575 MSR lamp: 750 h;
- adjustable strobing effect
- digital signal for lamp on/off function including disable option
- power requirement 4,2 A at 230 V - 8,4 A at 115 V
- black-out
- can be operated in any position
- cable in compliance with the safety norms IEC 331, IEC 332 3C, CEI 20 35 2 core 1,5Ø + earth
- programmable chase effect
- forced ventilation
- mains 115/230 V ± 10% 50/60 Hz (on application)
- beam movement on X and Y axis achieved by micro-stepper motors
- protection range IP20
- weight: 11,6 Kg/25,5 Lbs
- external ballast
- ballast weight: 8,6 Kg/ 18,9 Lbs (230V) / 15,8 Kg/ 34,7 Lbs (115V)
- GX 9,5 ceramic lamp holder

## macro-power in a micro-package

code 4231 micro scan 2 575 MSR (230 V)

code 4231/1 micro scan 2 575 MSR (115 V)



Coemar DeSisti Australia Pty Ltd  
 36a Clements Ave  
 Bundoora 3083 VIC  
 Ph (03) 467-8666  
 Fax (03) 467-8667



# coemar

# Only Golden Scan is better than Golden Scan

Voted Best Lighting Effect worldwide four years running: only Golden Scan can say this. And now, from the same team, comes Golden Scan "3", the result of this unparalleled technical success. A projector whose innovative features will set the new standard for scanner technology.



**Golden Scan "3"** 30% more light output from the same lamp • Rotating gobos interchangeable, fully programmable with accurately repeatable positioning • Frost filter, to produce a hard-edged focus or a soft-wash • Fully dimming, 0 to 100% • No less than 24 colours • 24 bicolour beams and rainbow effect • Prism for multiplying projected images • Shutter and strobe with twice the speed of previous models • Increased resolution in mirror stepping • In addition: interchangeable optics and iris • A special version is available which has been developed for professional touring applications (better portability, power factor correction, graduated yoke, etc.) • Golden Scan "3" uses 6 control channels and is designed to operate with all industry standard protocols: DMX 512, 0-10 V analog and PMX (Pulsar's RS 232/423 protocol), so you can be confident that your lighting desk will operate Golden Scan "3".

*Distributor for Australia:*

**LIGHT AUDIO VIDEO AUSTRALIA PTY LTD**

PO Box 551 GLADESVILLE NSW 2111 - Tel. (02) 816 4444 - Fax (02) 879 7377

MELBOURNE Office: 1<sup>st</sup> Floor - 285 Burwood Road - Hawthorn VIC 3122 - Tel. (03) 819 6916

*Head Office:*

**CLAY PAKY s.r.l.** - Via G. Pascoli, 1

24036 PEDRENGO (BG) - Italy - Tel. 39 - (0) 35/66 39 65

Fax 39 - (0) 35/66 59 76



PROFESSIONAL SHOW LIGHTING