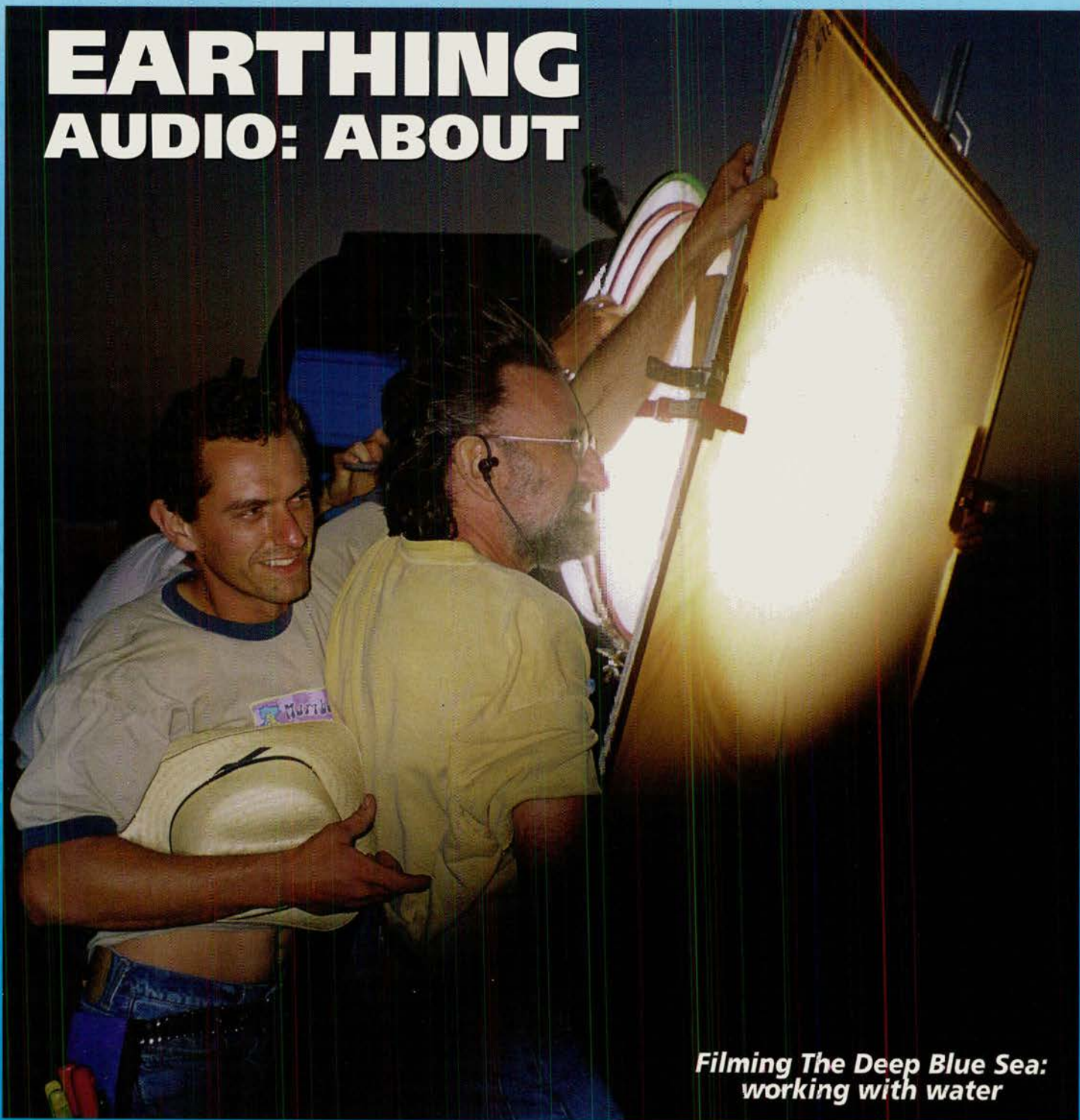


Pro Audio • Lighting • Vision • Staging • Audio Visual

Connections

New Zealand \$6.50 • Malaysia 36 • Indon. 170,000r • Thai 2500bt • Singapore \$10 • Hong Kong \$45 • Philippine 240ps • Elsewhere US\$7 • A\$5.00 JUNE 1999

EARTHING AUDIO: ABOUT



*Filming The Deep Blue Sea:
working with water*

- ◆ \$120,000 console, or 2 little Digital Mixers? Ask Neil Diamond....
- ◆ Moving head washlights: market review
- ◆ Why video projectors are OK for cinema.... now

YOUR MONTHLY TRADE NEWS

ISSN 1320-5595



Post approved: PP255003/007511
Published and printed in Australia

**You Love Them
For Their Live
Performance.**

Boyz II Men

Boyz II Men with their PSM® 600 Personal Stereo Monitors.

**They Love Shure
PSM® 600 Personal
Stereo Monitors
For The Same
Reason.**



SHURE®

The Sound of Professionals...Worldwide.®

Distributed in Australia by Jands Electronics Pty Ltd ACN 001 187 837

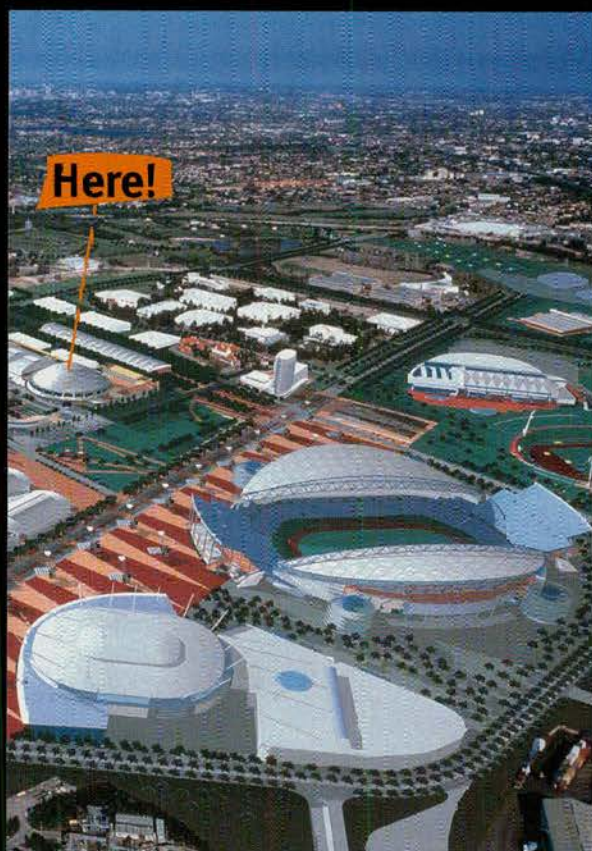
40 Kent Road Mascot NSW 2020 Phone: (02) 9582 0909 Fax: (02) 9582 0999

Write in Reader Service Number: 113

ENTECH

At the Olympics!

2000



Your Budget & timetable

Exhibitor budget costs*

Trade show floorspace (rates until Oct 30, then they rise)

3m x 3m booth A\$2287, 3m x 6m booth A\$4574

3m x 9m booth A\$6861, 6m x 6m booth A\$9148

Corner or end stands +15%

Open space up to 40^{m²} A\$225/^{m²}

Open space up to 100^{m²} A\$202/^{m²}

Open space up to 150^{m²} A\$187/^{m²}

Open space over 150^{m²} A\$165/^{m²}

Island stand less than 72^{m²} +20%

Payment: 30% now, 30% August 1st, balance Dec 1st.

Visitor / Delegate budget costs*

Trade show entry free

Convention delegate unlimited pass A\$180

Single seminars A\$15 - \$29 each (1.5 - 3 hours)

Awards dinner A\$75

Onsite hotel rooms from A\$136 (Ibis)

City hotel rooms A\$130 - A\$200

Air tickets 50% off listed economy fares

Ground transport from city free#

No GST applies in March 2000!

Visitor & delegate program released in November

The Entertainment & Presentation Technology Trade Show

Sunday March 5, Monday March 6, Tuesday March 7th 2000

Sydney Showground & Exhibition Centre, Homebush Bay

an activity of Connections Publishing Pty Ltd (acn 058443182) call +61 2 9876-3530

email caroline@conpub.com.au web: www.conpub.com.au

*Costs subject to variation at any time. #Free bus transport from designated CED hotel at scheduled times



**AUSTRALIAN
SCREEN SOUND
GUILD INC.**

ShowSafe



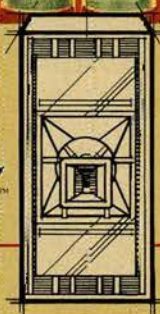


UNRIVALED FIDELITY. TOTAL CONTROL.

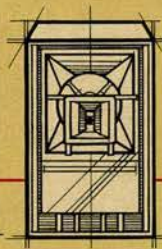
Deliver the best possible sound to every seat in the house
with X-Array Install™ speaker systems
and Merlin™ integrated signal processors.



X-Array Install™



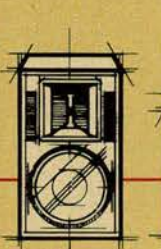
XI-2113/64
XI-2113/64



XI-1153/64
XI-1183/64



XI-191



XI-1152/64
XI-1152/94



XI-1122/85

EV X-Array Install™, in combination with Merlin™ integrated signal processing are the quintessential high-fidelity sound system solution for performing art centers, theaters, auditoriums and churches.

Rugged construction and flexible flying system makes X-Array Install™ ideal for portable and touring applications.

PERFECT FIDELITY AT ALL SOUND PRESSURE LEVELS

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

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

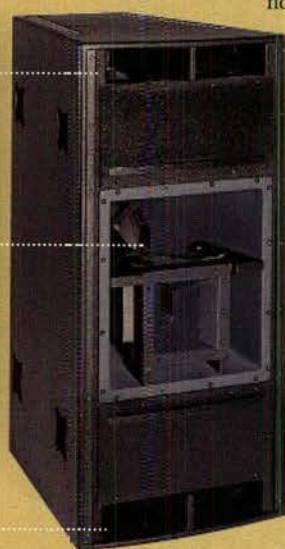
Traditionally, loudspeakers are plagued by time-domain "ring modes," which hang on after the signal has stopped to unpleasantly color the sound and decrease vocal intelligibility. Furthermore, the effect of ring modes is aggravated as sound levels increase, tempting a system operator to adjust system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

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

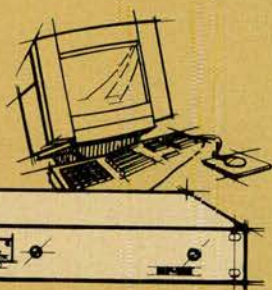
1 Top woofer slot

2 Mid-bass horn mouth

3 Bottom woofer slot



The "tripole configuration" of the Xi-2153/64—where output from the mid-bass horn joins that of the spaced, dual low-frequency sources—provides exceptional vocal clarity in reverberant spaces and resistance to feedback beneath the loudspeaker, by extending a precisely controlled radiation pattern to unusually low frequencies.



With RMD™, you're ensured truly amazing, unchanging fidelity across the full range of frequencies and sound levels.

"TRIPOLE" CONFIGURATIONS FOR EXCEPTIONAL CLARITY: FRONT ROW, ORCHESTRA OR BALCONY

The X-Array install™ Xi-2153/64 system employs a unique "tripole" configuration—where spaced woofers flank and operate with the mid-bass horn, to extend vertical directivity control to the unusually low frequency of 125 Hz.

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

By precise directivity control, X-Array Install™ delivers very high gain-before-feedback from the source microphone and excellent vocal clarity.

MERLIN™ ISP-100: A 1-RU DSP SYSTEM MANAGER THAT CAN BE CONFIGURED BY THE DESIGNER

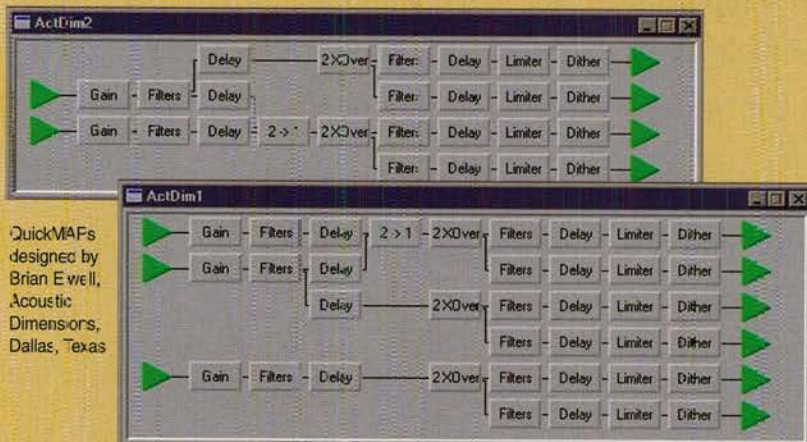
Merlin™ ISP-100 is a truly flexible, fully configurable control system that fits between the mixing console and system power amplifiers. It has the power to manage the voicing and directivity control of the Xi-2153/64 in "tripole" configuration. In addition, the designer may determine to suit his needs:

- The signal flow from inputs to outputs
- The number of modular inputs and outputs
- The location within the signal-flow diagram of "management blocks"; crossover and EQ filters, gain, limiters and signal delay

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

The heart of the Merlin™ ISP-100 is the "QuickMAP™," each of which is a system configuration—or signal-flow diagram—that incorporates the system designer's requirements for signal-routing and multi-way loudspeaker management. The VUE-IT™ software includes many standard QuickMAP's for typical applications as well as allowing custom configurations. Brian Elwell's QuickMAPs at left, are examples.

This exciting, advanced configuration employs two ISP-100's to accommodate three two-way LCR speaker sources with cross-fed, delayed signals that optimize coverage of the audience space.



QuickMAPs designed by Brian Elwell, Acoustic Dimensions, Dallas, Texas

THE BEST INSTALLED AND LIVE SOUND, ANYWHERE.



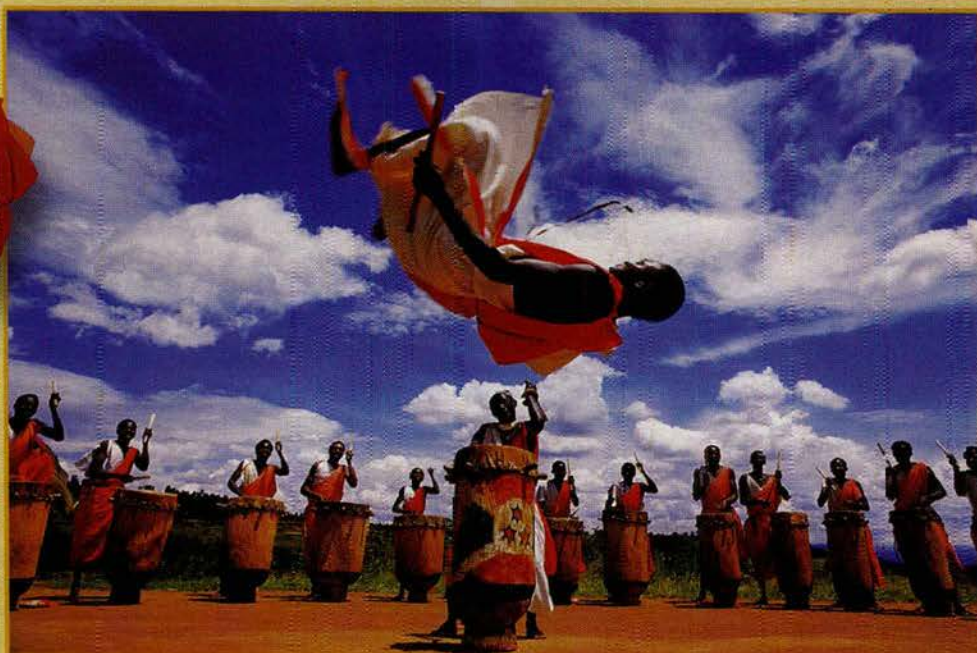
EVI Audio Tel: (02) 9643 3455 Fax: (02) 9648 5585 Email: sales@eviaudio.com.au. In Victoria Tel: (03) 9810 4511 Fax: (03) 9819 4849

Website: www.eviaudio.com.au

EVI Audio (Aust.) Pty Ltd is a division of Telex Communications, Inc.

Write in Reader Service Number: 129

GO WILD



with *Wild Tracks*

16-track hard disk record/play expansion card for the LD-88

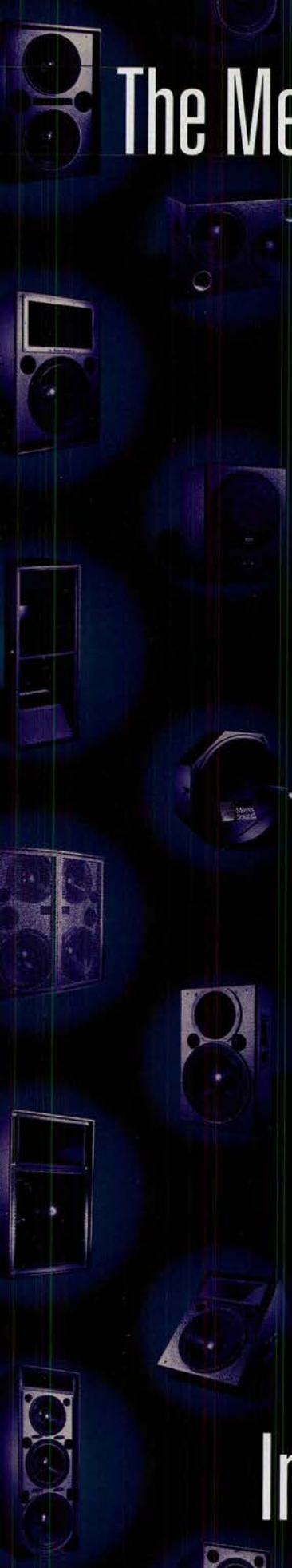
- Ideal for theatre sound, sound reinforcement, themed retail and location based entertainment
- Single solution replacement for carts, minidisks, samplers and multitracks
- Dynamically change the start times of tracks or groups of tracks
- All audio stored on hard drives with Wild Tracks™ RAM buffers providing instant playback
- Safetynet™ redundant hard drive back-up system virtually eliminates down time
- Wild Tracks adds an additional 16 tracks of playback to the LD-88's 8 in/8 out configuration



Richardson & Devine Pty Ltd

4 Gordon Street, Newstead, QLD Australia 4006 • PO Box 595, Albion, QLD, Australia 4010
Ph: (07) 3252 4433 • Fax: (07) 3252 3205 • Email: lcs@richardsondevine.com.au

Write in Reader Service Number: 136



The Meyer Sound Self-Powered Series

Since the 1995 introduction of the Self-Powered Series, over 13,000 units have been sold. With the advent of this new innovative series, Meyer Sound took a huge technological leap beyond all existing loudspeaker systems. Listen to what some of audio's top professionals have to say about these powerful, industry-defining tools...

"We really nailed it! Our new Self-Powered cabinets give us the flexibility to adapt to any environment on tour, and we now have the best stadium sound I've ever heard."

Jeff Thomas ◊ FOH Engineer, The Dave Matthews Band

"Self-Powered speakers mark a new beginning for both Meyer and the live sound industry."

Mark Frink ◊ MSL-4 Review ◊ Mix Magazine, August 1996

"Only Meyer Sound's Self-Powered Series guarantees us a world-class sound system preferred by most artists and producers."

Marcio, Nelson & Marcos Pilot ◊ Loudness Sonoriza, Brazil

"Setting up 18 stages in one week... we never could have done it without the Self-Powered Series. Nothing is easier to use, easier to maintain, or sounds as great."

Miguel Lourtie ◊ Systems Engineer - EXPO '98 ◊ Lisbon, Portugal

"The sound was amazing, incredible... the music almost came at you in 3-D! ...Simply, I have never experienced speakers like these before."

Mike Klasco ◊ UPA-IP Review ◊ DJ Times Magazine, May 1998

Imagine what you'll be hearing...

Meyer Sound Australia • 4 Gordon Street • Newstead, QLD • Australia, 4006 • P.O. Box 535 • Albion, QLD • Australia, 4010
phone: 07 3252 4493 • fax: 07 3252 3380 • e-mail: sales@meyersound.com.au • URL: <http://www.meyersound.com.au>



Meyer Sound

Write in Reader Service Number: 18

GUESS WHO JUST BOUGHT AN icon?

FOR SALE
PA Rig, includes mixer, amp, 2
FX units, compressor, limiters,
2 Graphic EQ's. All pro gear -
one careful owner. Call Max
on 01326 372070 (days)

NEW MUSICAL EXCESS

FOR SALE
Left handed guitar, mint
condition, black. Would suit
left handed guitarist. £1,100
ono. Call Ed Antic (eves) -
Tel: 0171 21244

FOR SALE
Tenor saxophone, case and
strap. Rarely used. £450.
Call Bill C Tel: 0181 23145

FOR SALE
Large selection of used
organs. Call G. H. Papworth
for details - Tel: 0171 26375



icon is a PA system in itself - just add speakers! As well as an immensely powerful 10 input, 4 output digital mixer, the **icon** series DP1000* gives you a 600W into 4 ohms stereo power amplifier, gates compressors, 2 x 10 band graphic EQ's, stereo FX processors and more.

All this power is more accessible than ever before - the **icon** performance memory system lets you work 'live', or programme all your settings in advance, leaving you to control the whole show with a couple of buttons, by footswitch or via MIDI.

For ultra - compactness, effortless operation, rapid setup and breakdown - there is only **icon**.
Time to sell your old gear?

*The unpowered DL1000 is also available.

TAG

TECHNICAL AUDIO GROUP

558 Darling Street,
Balmain NSW 2041
P: (02) 9810 5300
F: (02) 9810 5355
Web: www.tag.au.com
Email: info@tag.au.com

ALLEN
&
HEATH

icon
SERIES

digital

CONTENTS

#66. June 1999

The Entertainment & Presentation Technology monthly



Legend!
Stanley Miller
mixes Neil
Diamond on two
Yamaha 02R
mixers! How can
an old guy
continue to set
the trends after
20 years mixing
the same artist?

See page 60



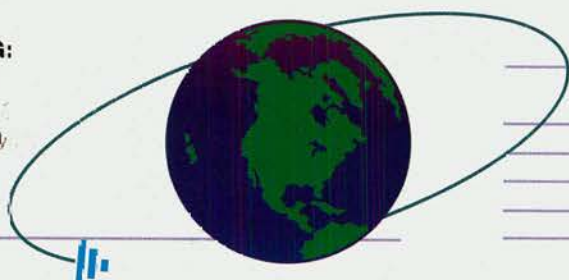
COVER STORY

H₂O and kW's
Gaffer Mick
Morris, a 6m
shark and lots
of water

See page 70

AUDIO EARTHING:
Tips, tricks and
traps for young
players. By John
Matheson.

See page 28



inside

Music convention a hit!	11
Enter the BIG projectors	11
Letters: Film Sound reaction	14
Letters: The Blue Mac defended	18
New Products special	20
Earthing Audio: John Matheson explains	27
AV: OptiScreen debut	34
Pro Stage Australia: a new portable stage	34
Digigami Releases MegaPEG 2.0	36
New projectors	38
Shackles: New safety and rigging column	42
Gadgets, gizmos and devices	42
Studio news and roundup	46
Duncan Fry: bring back Cheech and Chong!	51
Buyers Guide: live mixing consoles	52
How to do it: Live Sound and Microphones	54
How to do it: Tom Misner on tape formats	56
Billy Bragg and The Blokes local LD, imported Sound Designer and, most importantly, locally hired gear	58
Theatre News, Movers and shakers, darling	58/62
Legend! Stan Miller mixes Neil Diamond	60
Punter's Perspective: Chicago and all that jazz	62
Book Review A look at <i>Stages For Tomorrow</i>	64

LX News Martin Sold, High End changes distributor	69
H ₂ O and kW's Gaffer Mick Morris, a 6m shark and lots of water	70
Market Overview	
Connections looks at what is available in Moving Head Washlights	74
Lighting Deep Purple in something other than purple	84
CDA al fresco another industry showcase!	85
Tech Talk What Temperature is a Colour?	86
Buyers Guide Profiles & PC Spots Plods)	88
THE PA PAGE	90

PIG IS PORK!
see page 64



COMING IN CONNECTIONS:

JULY: Buyer's Guides: DJ mixers and samplers. Lighting control. **Deadline** 15th June. **Onsale** July 7th
AUGUST: Buyer's Guides: Studio Mixers, Lighting Dimmers. **Deadline** 15th July. **Onsale** August 11th (Due to out July Holiday - sorry!)
SEPT: Buyer's Guides: Microphones, Fresnel spots, Floods. **Deadline** 15th August. **Onsale** Sept 5th
 Call +61 2 9876-3530 for info. **Deadline for Buyer's Guide is EARLIER!**

Do you buy this magazine in a Newsagency?

Because of changes to Newsagents distribution policies
effective July, you need to subscribe to guarantee delivery

SUBSCRIBERS SAVE MONEY AND GET THEIR MAGAZINE EARLIER TOO!

Subscribers also get **INSERTS** - there is more packed into a Subscriber issue!

12 months A\$48, 24 mths A\$79, NZ/Pacific/Asia A\$80, 24 mths A\$120, USA A\$115, Euro A\$125
 Amex, Diners, MasterCard, Visa and Bankcard accepted! Call 1-800-635-514 or fax +61 2 9876-5715

C 4000 B

PERFECT IN THE MIX

C 4000 B

For recording studios, project studios, radio stations, and musicians, the C 4000B has got what it takes: versatility, outstanding price/performance, and a classic large-diaphragm condenser capsule. Also, the microphone uses advanced solid-state technology to support the typical sound of a large-diaphragm condenser microphone AND an unprecedented price/performance ratio. Thanks to its selectable cardioid, omnidirectional, and hypercardioid polar patterns, the C 4000B is the perfect choice for just about every studio and live sound application. A transformerless output stage ensures outstandingly accurate low-frequency response.

In short, the C 4000B provides rock solid performance at an unprecedented price of RRP \$1399.

LEGENDARY STUDIO QUALITY BY



H A Harman International Company



Proudly distributed by: **AWA** audio products

67 O'Riordan Street, Alexandria, NSW, 2015 Ph: 1800-642-922 Fax: 1800-246-262

Write in Reader Service Number: 137

Connections

THE PRESENTATION & ENTERTAINMENT TECHNOLOGY MAGAZINE

Music trade revel

New Music Association convention gets thumbs up

SURFERS PARADISE: The importers, manufacturers and retailers of musical equipment have never looked so happy. Cast together in an island removed from reality called Jupiters Casino, they thoroughly misbehaved right through a sunny May weekend. Along the way they networked, looked at new equipment, and even placed orders. It was a modern and slick convention format, and it worked.

Motivational and sales gurus hosted sessions each morning. Now you'll notice more folks asking you for the sale and snapping that 'close the sale' technique your way.

Highlight of the event was the stunning choice of Dreamworld for the awards dinner, where the mass enjoyed run of the park beforehand. Witness the scene at right, shortly before The Tower of Terror ride. • See next page



SSL possible at House Studio

Sydney Opera House is undertaking a study of the noise floor at the new performance space named The Studio. This is a 350 seat multi purpose facility aimed at 'new music'.

If suitable, or if it is practical to modify any nearby noise inducing source, a business plan for upgrading recording facilities at the House will be finalised. The plan is understood to be open in scope, allowing an SSL type studio, capable of recording an orchestra in The Studio.

The attraction of such a facility includes the ready presence of orchestra members, parking, and catering on site.

If an SSL level studio were commissioned, it would feature commensurate technology for surround sound digital audio recording and mixing.

A lower level specification would be implemented if the noise floor were compromised.

DIGITAL CINEMA: TIME HAS COME

Video projection will replace the film projector sometime real soon now. The Studios say so!

By Gary Kayye

LAS VEGAS: After years of HDTV hype at the giant NAB convention, there was finally another theme running rampant at the annual show.

Digital Cinema.

Yep, for years the major story from almost every mainstream press journalist and industry trade magazine cried HDTV this, HDTV that, HDTV here, HDTV there. But, 1999 will be remembered as the year the studios arrived to show their support for the future of the Movie Theater. And, digital is the way they want it.

Talk about a digital cinema has been around for over a decade. I remember a small dealer in Paris France in 1989 claiming that it had a deal with a major French studio to bring 'first-run' release movies to small towns in France through a satellite delivery system. But, it soon proved to be

hype. Since then, I've been intrigued over the rumors that have come and gone surrounding the possibility of movies being delivered one day without using the mechanical film method they use now.

Why?

What's the big deal about?

Well, here you go:

The way it's done now:

Today, the majority of films are shot using the same method they've been using for over 70 years.

Film, although it's certainly improved over the years, is loaded into a camera and used to capture the movement and sound of the motion picture experience.

Some movies take months to shoot - some even years, but most of them are shot in a matter of weeks.

please turn to page 40

Rough ride for operators

The Australian Cinema industry is set for a shakeout, according to an industry expert. **Russell Scott** (pictured) is General Manager of Greater Union Entertainment Technology, who are one of the world's leading Cinema outfitters. Scott says the industry expects an increase in attendance of 11.6% from 1997 to 2000. But the number of screens will increase from 1,400 to 2,000. "Audiences are becoming more discerning, they will not accept a cinema which is sub standard" says Scott.



CONNECTIONS PUBLISHING

Pty Ltd. (ACN 058443182). An Australian private company, established 1992.

All Mail to:

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

Phone: +61 2 9876-3530

Fax: +61 2 9876-5715

E-Mail: mail@conpub.com.au

Large files: images@conpub.com.au

Web site: www.conpub.com.au

ADVERTISING: Deadline 15th of each month

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

Sales Director: Caroline Fitzmaurice caroline@conpub.com.au

EDITORIAL: Deadline 15th of each month

Publisher & Editor: Julius Grafton

Email: julius@conpub.com.au

Assistant Editor - 7th year

Catriona Forcer Email: catriona@conpub.com.au

Profile journalist: Madeleine Murray

Editorial Alliance: Total Production Magazine (UK)

Regular Contributors:

ADELAIDE: John Matheson **BRISBANE:** Sid Kidman **PERTH:** Jacqueline Molloy, Andy Ciddor **MELBOURNE:** Mandy Jones, Duncan Fry **SYDNEY:** John Grimshaw, Michael Orland.
EUROPE: Zenon Schoepe, Mark Cunningham (London)
USA: Buck Freeman (Detroit) **SINGAPORE:** Nazir Keshvani

CREDITS:

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

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

Accounting: Jenny Royal **IT Network:** Brendan King

Web: Greg Weaver, Andy Ciddor **Printing:** Superfine, Syd. (3rd year)

Reprographics: Omicron, Sydney (7th year)

Platform: New G3 Mac - dead out of the carton.

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

DEADLINES:

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

SUBSCRIPTIONS:

Free call: 1-800 635-514 or fax +61-2-9876-5715 from O/S

AUST: \$48, (12 months) or \$79

(2 years). A\$80, Asia A\$80, USA A\$115, Europe/UK A\$125.

Pay half price for this magazine

(Aust. only) Buy 5 or more copies to one address each month - for resale or for staff or for customers. Pay only \$2.50 each invoiced quarterly. Call Nicole 1-800-635-514

Legal: All contents © Connections Publishing Pty Ltd, 1999. 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 not necessarily 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. Opinions expressed herein are not necessarily the publishers. Sue us anytime, serve the writ 9-5 daily. 100% produced in Australia, air expressed to the entire South East Asian region.

WRITE FOR CONNECTIONS! We WELCOME well written articles and stories for consideration. Send hard copy, preferably WITH a PC or Mac word processing RTF file and NORMAL file together. RTF means Rich Text File, also known as 'Interchange format'. Most word processors will SAVE a file (in the 'Save To...' field) as an RTF file. Colour Photograph prints preferred. Have them printed at 5" x 7" or larger if possible. Digital images- you CAN email us a high resolution 300dpi JPEG image as an attached file, but not a TIFF image. It takes too long to download. Send stamped self addressed envelope if return desired. No responsibility for loss accepted. Call the editor if info required.

ETHICS: We operate under the journalists code of ethics, as detailed by the Australian Media Entertainment and Arts Alliance. We also agree with the principles of media honesty expressed in Brill's Content magazine. Respect for truth and the public's right to information are over-riding principles for all journalists at this publication.

In pursuance of this principle we have always committed ourselves to these ethical and professional standards:

1. We shall report and interpret the news with scrupulous honesty by striving to disclose all essential facts and by not suppressing relevant, available facts or by distorting by wrong or improper emphasis;
2. We shall not place unnecessary emphasis on gender, race, sexual preference, religious belief, marital status or physical or mental disability;
3. In all circumstances we shall respect all confidences received in the course of their calling;
4. We shall not allow personal interests to influence us in our professional duties;
5. We shall not allow our professional duties to be influenced by any consideration, gift or advantage offered and, where appropriate, shall disclose any such offer;
6. We shall not allow advertising or commercial considerations to influence us in our professional duties;
7. We shall use fair and honest means to obtain news and documents;
8. We shall identify ourselves before obtaining any interview for publication;
9. We shall respect private grief and personal privacy and shall resist the compulsion to intrude;
10. We shall do our utmost to correct any published information found to be harmfully inaccurate.



SONTEC AND BOSE SIGN UP HINDMARSH STADIUM

Olympic soccer venue, Hindmarsh Stadium in Adelaide will have a sound overhaul courtesy of Sontec (now a division of Chubb) and Bose Australia.

The \$350,000 contract involves all sound elements of the stadium including the ground sound system, front and back of house systems and all corporate boxes, patron entrances and turnstiles.

"Our submission to Hindmarsh Stadium was technically very strong," said Frank Nardone, business manager of Sontec (pictured). "We have ensured that there will be minimal spill outside the stadium and have developed a sound design that uniquely incorporates all elements of the venue

"Given the total stadium coverage of the sound system, we have also incorporated a feature allowing the ground manager to take over the system in emergency situations, rather than operating a separate emergency public address system.

"Bose was a key reason for our success with this submission. Sontec and Bose have developed a strong winning relationship which has proven very successful in the last year," he said.

Sontec worked with Bose throughout the submission process to develop the right speaker configuration for the task at hand.

According to Shane Spinks, national sales manager professional products, Bose Australia, it is important that a stadium, boast-

ing the level of versatility of Hindmarsh, have a system that will deliver high impact with very good speech intelligibility suitable for any type of event, whether an outdoor concert or a major sporting event.

"To deliver the required performance, we've incorporated Bose Panaray Long Throw (LT) speakers, designed for where there is high ambient noise or excessive reverberation," he said.

Hindmarsh Stadium is the latest in a string of large contract wins for the combined team of Sontec and Bose. Over the last 12 months they have teamed up to provide public address systems to ETSA Park, the Adelaide netball stadium which is home to the Ravens and Thunderbirds national netball teams; Wayville Showgrounds, General Motors Holden Elisabeth paint shop facility and various churches and hotels.

Birth

To Chris (PA People) and Nicki Dodds, a girl, Rebecca on March 25th.

Harrison Anthony was born to Tony (AAS) and Sandra Waine on April 24th, a whopping big 9lb 12 oz -ouch!

Vote for the Onyas!

The Australian Online Music Awards (ONYA! AWARDS) are online now for voting. Go to www.onya.com.au and honour excellence online!

MUSIC CONVENTION A BIG HIT!

The 1999 Australian Music Association Convention held from April 30 to May 2 on the Gold Coast, has been hailed by the music products industry as the best trade show ever held in Australia.

Letters and emails have been steadily into the AMA offices conveying congratulations on the new trade only format adopted by the association.

Held at Conrad Jupiters, the new concept involved exhibitors taking both stands and hotel suites in which to display mainly new release product, meet with and entertain dealers has proven popular with both exhibitors and delegates alike. A lack of noise has been roundly praised and appreciated and a solid amicable business environment was created in the exciting surrounds of Conrad Jupiters.

The new convention format presented an emphasis on professional development and AMAC presented both international and local industry experts including Larry Linkin, President/CEO of NAMM, The International Music Products Association, renowned music trades sales trainer, Bob Popyk from New York, together with Wayne Berry, David Campbell and David Panther all imparting the knowledge to audiences of over

200 people - this approach was an industry first and a principal focus of the convention.

The social atmosphere and fellowship created was a revelation to many. Over 500 people attended a cocktail function around one of the most beautiful tropical settings of any resort or hotel in Australia, as well as a great night at the Dreamworld Themepark, where 530 industry people enjoyed the thrills and fun of the rides and other park attractions, followed by dinner.

The Convention Dinner also provided the venue for the presentation of the inaugural Australian Music Products Industry Awards. Retail awards were voted on by AMA member wholesalers and the wholesaler awards by AMA member retailer - the winners were:

Best Retailer Awards

Kosmic Sound & Lighting (WA)
Better Music (NSW/ACT)
Allans Music (Victoria)
Barratts Music (Tasmania)
Allans Music (SA/NT)
Australian Academy of Music (Queensland)

Best Wholesaler Awards

General Musical Instruments:
Australasian Music Supplies
Piano/Keyboard: Shriro Pty Ltd
Pro Audio/Hi tech

Yamaha Music Australia
Print Music: Music Sales

Post convention statistics revealed that 488 delegates representing 231 stores attended, with 290 delegates registered by exhibiting wholesalers - 110 stands were occupied by over 60 wholesalers in the exhibition.

At the association's members' meeting following the convention, members overwhelmingly voted to hold the convention annually at around the same period of time, such was the positive reaction to the event. Precise dates will be announced in June.

Late News

Peavey are understood to have purchased **EAW and COMMUNITY**. These loud-speaker system manufacturers operate at different ends of the pro audio market. They join **CREST** as a Peavey company. Peavey CEO Hartley Peavey is thought to have undertaken to maintain **EAW and Community** as separate entities. Peavey will exploit the technologies and R & D of each firm to further develop their **Architectural Acoustics** range.

-Buck Freeman, Detroit.

MOVED

Digidesign Australia/New Zealand, 1 Bolitho Rd, Riddell 3437, Victoria, Australia. Contact numbers: +61 3 5428 7780 voice and +61 3 5428 7781 fax.

Fairlight ESP has expanded into new premises in Sydney. The new building houses Fairlight's corporate management, finance, R&D, product management and marketing departments. Contact: Unit 2, 1 Skyline Place Frenchs Forest NSW 2086 PO Box 6117 Frenchs Forest 2086 Tel: +61 2 8977 9999 Fax: +61 2 8977 9900 Manufacturing, production, warehousing, sales and customer support departments will remain at the existing address.

Philips Communication & Security Systems (CSS) have recently moved. 2 Greenhills ave, Moorebank, NSW, 2170. The new contact details are Tel: 1800 132 022 Fax: +61 2 9612 5740.

Acoustical Consultants **Renzo Tonin and Associates** have moved to: Level 1, 418a Elizabeth street, Surry Hills NSW 2010. Call +61 2 8218-0500, fax +61 2 8218-0501.

dB Audio Visual have moved to 8 Guest Street, Hawthorn, Vic, 3122. +61 3 9819-3630, fax +61 3 9819-3636.

Fujitsu Australia are in swank new premises at 100 Holbeche Rd, Arndell Park, NSW, 2148. Call +61 2 8822-25090, fax +61 2 8822-2501.

CMI are relocating to larger, more modern premises in Brooklyn. Contact Phone & Fax numbers will NOT change. Phone: +61 3 9315 2244 Fax: +61 3 9315 2115 From June 15th: 30 - 38 Export Drive, Brooklyn, VIC.

Safety advisory

Malaysian Airlines (MAS) have landed 747 aircraft at London Heathrow with inadequate fuel for a go-around, the UK DETR claims. A report in *Flight International* names MAS, after multiple instances of low fuel landings were detected on non-stop aircraft originating in Asia.



Awards winners: Geoff Hyde (Shriro), Kevin Kobayashi (Yamaha), Mark O'Connor (Allans, Melb), Peter Noske (Allans, Adel), Kevin Hairy Hague (Australasian Music Supplies), Key Hay (Music Sales), Greg Soulsby (Better Music), Roy Adams (Kosmic)

FILM SOUND EXPOSED: A READER CONCURS!

I fully concur with John Matheson ("Film Sound Exposed" May). Finally a person in the A/V industry with enough courage to openly expose the many errors in recording various sounds on movies, TV series, adverts and F.A.s.

I am not employed within this vast industry nor am I a musician but I am a Audiophile who for at least twenty five years have been regularly disgruntled with TV production methods, Cinema, film sound productions and CD recording processes.

With regards to CD Digital Remastering of 60s, 70s bands such as Led Zeppelin, Deep Purple and Alice Cooper etc. These CDs all have the same characteristics as each other - no dynamic range, very low recording output values, vocals muddled and gen-

erally the overall sound quality is lousy.

Television production methods are either extremely well done or other programs are rubbish. Advertisements vary so widely with their sound quality and average loudness levels, there must be an agreed standard of producing all adverts - preferably Dolby SR process, so as to have uniformity with news services, current affairs, sitcoms, drama, every program that goes to air.

With all this television telecasting problems now, I really hope that when TV stations transmit the soon to be HDTV system, everyone in the industry will follow the correct recording procedures.

- Michael Halstead,
Adelaide.

FILM SOUND: STORY SLAMMED

I was very interested to read the article by John Matheson on film sound (May) and the exposure of our industries dodgy practices in trying to get difficult jobs done within extremely tight deadlines and ever tighter budgets.

Many of Johns comments were very unkind to screen sound professionals and also in many instances, incorrect.

The article shows a lack of understanding of what goes on when putting together a sound track for film or TV.

As far as "documentary evidence" goes, "sound field recreation in B grade studios" happens to be occurring simultaneously around the world by award-winning documentary film makers.

One award-winning "sound field recreationalists", with over 20 years experience, has produced some of the finest programs on TV anywhere in the world. I would hardly call his studio "B grade" and during our last job there, we were in fact guilty of utilising the "teaspoon in a soupbowl" splashing technique to accompany a vintage B/W photo of children in a swimming pool. Did we fail?

M-S recordings in soundtracks are very problematic for many reasons including, mono/stereo incompatibility and incompatibility with the Dolby process.

Of course there is the possibility that the great majority of screen sound professionals who choose not to use M/S recordings are sadly misled! Although it does appear to work for seagulls and surf on "Home and Away".

For dialogue to match vision is a logically desired result unless

you or someone else has chosen otherwise.

Screen sound professionals go out of their way to keep audiences on their seats by not working for this most obviously desirable result. We try our hardest to radically break all the rules to avoid the unthinkable of all movies ending up sounding the same, so we adopt radical approaches. I myself would prefer to hear dialogues in a battle scene than endless cannon shells exploding.

I think most directors like their dialogues to be heard regardless of what is going on, on screen.

As far as dialog matching being made a "doddle" (whatever that is) by using omni mics, why didn't I think of that?

Of course two lines in the same scene, one recorded on a shoot gun, and the other coming from a radio mic can all easily be matched in the way John describes.

If John doesn't like what he hears, then I would suggest that he read the book instead of going to see the movie.

Maybe I haven't understood John's article. And like John, I also can't stand to use what seems to be the most effective and practical tools available at the time. I'll have to have a chat to some of those producers out there who are forcing all this on us.

Connections is a valuable forum for professionals from all our industries. I found the tone of the article patronising and negatively opinionated.

- Phil Snow, Sydney.

>More on this on the next page

MAJOR EVENTS

- InfoComm, June 10-12, 1999. Orlando. Info fax +61 2 9531-6777, www.icia.org
- PALA, July 8-10, 1999. Suntec City, Singapore. Ph. +65 227-0688.
- SMPTE, July 13-16 th, 1999. Sydney. Ph. +61 2 9977-0888.
- National Entertainment Industry Conference, Sydney. Aug 6,7. +61 2 9557-7766
- PLASA, Sept 5-8, 1999. London, Earls Court. www.plasa.org.uk
- INFOCOMM ASIA, Sept 15-17, 1999. Singapore. Ph. +65 297-2822. www.icia.org
- AES 107th, Sept 24-27, 1999. New York. Fax +1 212 682-0477. web: www.aes.org
- LDI Nov 19 - 21st, 1999. Orlando. Ph +1 212 229-2965 web: www.etcync.net
- NAMM, 3 - 6 Feb 2000. LA. www.namm.com
- ENTECH 2000, March 5th - 7th, 2000. Sydney Exhibition Complex at the Olympic site, Homebush. Fax + 61 2 9876-5715. web: www.conpub.com.au
- MusikMesse, March 15- 19th 2000, Frankfurt. www.messefrankfurt.com
- SIB, Mar 26 - 29th, 2000. Rimini, Italy. Ph +39 541 711711. www.fierarimini.it
- NAB, April 8-13th, 2000, Vegas, USA. www.nab.com
- NSCA, April 27 - May 1, 2000. Las Vegas. Ph +1 904 273-2760 www.nsca.org

ENTECH 2000 ON SALE NOW

CALL CAROLINE ON 1-800-635-514 OR +61 2 9876-3530



GEAR TO MOVE?

IF YOU'VE GOT GEAR TO MOVE,
CALL STAGE & SCREEN ON (02) 9383-4544

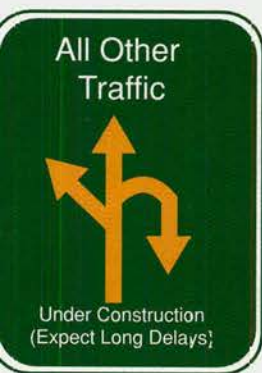
STAGE & SCREEN
TRAVEL & FREIGHT SERVICES PTY LTD

Does Your Analog Mixer Feature ?



- Built-in Automation with SMPTE Lockup & Moving Faders
- Built-in Dynamics
- Built-in Studio Quality Effects (Two Units)
- Built-in 4 Band Fully Parametric EQ
- Built-in 24 Bit Recording Compatibility
- Built-in 5.1 Surround Panning
- Built-in MIDI & Pro-Tools Control Capability
- Built-in Pedigree (5th Generation Digital Technology)

The **O2R** *Version 2* Does !



MOVE UP TO THE DIGITAL STANDARD - O2R



Offer ends 31/7/99.

*Mixers in good working order only. Not all dealers will accept all makes, models and years.

Write in Reader Service Number: 169

Yamaha Music Australia
PO Box 268, South Melbourne VIC 3205
Toll Free 1800 805 413 A.C.N. 004 259 527

Film Sound: don't trivialise professionals

Having discussed the article "Film Sound Exposed" (May) with my colleagues in the film industry, I wish to frame a response to the writer, John Matheson.

Technically John is in error when he says that M-S microphone technique is mono-stereo compatible and also Dolby Surround compatible. Having tracklaid and mixed for many years, nothing causes more grief than M-S used on location.

When M-S is summed to mono there are two problems. The side mic information cancels so detail or information is missing and secondly there is a drop in signal level. The loss of side information can be critical. An example of this was a location music documentary that we tracked and mix where, against advice, the sound was all shot M-S. In mono, side instruments were canceled and the balance of the performance was lost.

Also as is typical in any soundtrack, there were elements like atmospheres and narration that were not recorded M-S. So in mono they remained at normal volume whilst the music level dropped - and side instrumentation was lost. I do not call that mono compatibility.

It was such a problem that we opted to delay the left channel to stop the cancellation. Naturally this induced a phase shift which was not entirely acceptable in mono but a better compromise than cancellation.

The issue with Dolby surround is that the phase characteristics of the Dolby Pro Logic decode will yield false imaging of an M-S stereo field. Consider a sound that travels left to right across an M-S mic placement.

In stereo the signal moves left to right and matches the picture. In mono the signal has a modified volume envelope and in Surround decode, the side signal is partially shifted to the surround speakers, hardly an appropriate placement for an image that moves left to right.

The effect is the signal moving from rear to centre and back to rear. Again, to call this compatible is false.

With regard to foley and ADR

recording techniques, I think John would be advised to sit in on a recording and mixing session to realise that his microphone ideas are not practical.

Foley and ADR rooms have an acoustic characteristic which is either exploited or minimised by microphone type and placement. Cardioid pattern mics are mostly used and they are very quick to position to achieve the purpose of the recording. His comments on proximity effect and off axis response also fail to acknowledge these characteristics are something we use rather than suffer.

The creation of a sound track is not about reality. The surreal is just as valid and to create foley that is 'realistic' is often not the intent. Sound is used to lead the viewer. The lack of connection between sound and picture is a common technique.

The director wants the audience to notice the background action so the foley effects are intentionally closer than the foreground effects. It makes you notice because it is intentionally not real.

If films are about reality then we live in a society where death is trivial, sex is more common than eating and we don't sleep or go to the toilet for weeks.

The mixing of foley is an exercise in signal processing. If the close mic gives too much high

and low frequency then we filter it. Radical EQ is common with foley as is pitch and time manipulation. To dismiss the art of foley with a few simple diagrams of footsteps in a foley tray is frankly insulting.

In the real world, when we try to match footsteps from one day to the next with the same tray, shoes and foley artist, it is surprising how difficult this can be.

If John is implying that the two films he saw that "sounded incredibly similar" were Titanic and Shakespeare in Love, then knowledge of the difference in ADR with these two films actually makes his whinge about lack of reality all the more ignorant.

Shakespeare In Love used 98% of location dialogue. (I recommend the April Issue of Studio Sound for a proper article on the making of that soundtrack.)

Titanic, being an effects film used a much higher proportion of ADR. If the dialogue quality was "incredibly similar" then it is in fact a compliment both to the skills of the location recordist on Shakespeare In Love and the ADR team on Titanic.

His final comments on archival documentaries also insult and trivialise.

At Digital City Studios we do a lot of archival and natural history documentaries, which require extensive foley and sound

effects work. We are certainly not a 'B' grade facility, nor do we use the same motor or marching sounds. Our sound effects library is a combination of commercial libraries and our own recordings.

There is no quality difference in the way we add effects for archive or dramas. Eight thousand effects are 'online' in our computer system and the total number of sound effects that we have would be over 30,000.

We have no need or inclination to just repeat the same inappropriate effects. Again, the point is that a soundtrack must be constructed with the intent of leading the viewer through the story.

The use of sound or indeed the intentional use of silence are considered and creative decisions, not a quick spak filling of mute footage.

John wishes that the "producer wouldn't do it". It is not the producer that decides on the sounds that are used.

John's article was inappropriate for a magazine that prints the words "Pro Audio" on the front cover. Ask those that do to write articles and leave the keen amateurs to write letters to the editor.

Michael Gissing
Owner/ operator
Digital City Studios

John Matheson responds~

The article was not particularly directed at the Australian Film Industry, although it just happens that the two films I heard that started me thinking about this (some years ago) were in fact Australian. In fact, my thoughts were prompted by a recent article in Studio Sound (November 1998) by Kevin Hilton in which he says: "sledge-hammer use of sound is commonplace in the standard Hollywood blockbuster"

Nor should it be implied that I think all film sound is bad. I gave illustrations of some poor techniques, which I personally find irritating. Poor use of microphones in particular is widespread in the professional audio industries, no more particularly so in film. But so is the correct use; I'm not complaining about that!

There seems to be a misunderstanding about the M-S microphone issue.

I did not advocate its widespread use for anything. Having said I enjoyed the ambience of an

original sound field, I explained why it worked in the example I used.

What I said was when an M-S recording is played back through a Dolby Surround set-up, the sides will go to the surround speakers. In that sense, the Dolby Surround compatibility I was claiming was that the side pattern would be decoded, though not strictly correctly, which it is.

If in fact H&A is recorded with M-S, then their technique must be good, because it works both on the level of being appropriate sound for the picture, and of keeping an adequate voice level over background for intelligibility. And it captures a nice ambience to boot. But, hey, it's not for everything!

Now if *all* dialogue was recorded with an omnidirectional microphone, a lot of timbre and sibilance problems *would* be avoided, other things being equal. That is why I said what I said.

The point of this article, and every other one I have written, is to make professional audio engineers think about how they do things and why.



Give Yourself An Unfair Advantage



The New KF700 Series

No other loudspeaker provides the KF750's level of control in both the horizontal and vertical planes.

TECHNOLOGY No other one-box system arrays better or provides a more consistent sound field.

No other array system provides better fidelity.

No other array system its size can match the KF750's output.

No other array system that's as powerful is as small and light.

No other three-way touring system has the KF750's Acoustic Singularity™ design that lets it act as a true point source.

No other array system includes a full range downfill module like the KF755.

No other array system covers a wider range of venues.

No other one-box system provides more even coverage from a dead hang.

No other array system provides greater flexibility.

No other array system stacks three-high in a truck.

No other loudspeaker had more user input during its design.

EAW's KF700 Series. Like no other.

The Laws of Physics / The Art of Listening



One Main Street, Whitinsville, MA 01588 Tel: 800 992 5013 / 508 234 6158 Fax: 508 234 8251 Web: <http://www.eaw.com>

EUROPE: EAW International Ltd., Tel: +44 1494 539090 Fax: +44 1494 539091

AUSTRALIAN DISTRIBUTOR: Production Audio Services Pty Ltd, 6-8 Elizabeth Street, Richmond, VIC 3121

Tel: (03) 9415 1585 Fax: (03) 9415 1595 Web: www.productionaudio.com.au

EAW is the worldwide technological and market leader in the design and manufacture of high-performance, professional loudspeaker systems.

Defending the Blue Mac

Thank you for the opportunity to reply to your article titled 'New era for the Apple Mac'. It is unusual to hear of customers who are unhappy with their PowerMacintosh G3, in fact the new G3 has been a stunning success for us and the market has responded positively, including positive reviews in many publications and overwhelming takeup rate in the Australian market.

In regards to the article in your magazine, and in terms of the difficulties encountered when connecting all the existing external SCSI devices to the G3, Apple would not recommend the use of Ultra-2 SCSI to SCSI 2 plug adapter for customers who require maximum system performance.

The SCSI card that is installed in the 400MHz PowerMacintosh is a U2SCSI card intended primarily for the internal drive. It is possible to add external devices that conform to the U2SCSI standard without degrading performance.

If however you add traditional SCSI 1 or SCSI 2 devices with an adapter cable you will inevitably degrade the bus transfer rate of the internal drive by up to 80%. The machine will do this automatically in order to perform compatibly with the slower external devices.

In regards to the operating circumstances outlined in the article (ie: using external SCSI 1 or SCSI 2 devices), we would recommend the solution of using an additional SCSI 2 card. The Adaptec 2906 card is one such card that retails for less than \$200 and has been tested to work with many third party peripherals.

Regarding the difficulties encountered when upgrading the operating system, Apple is committed to maintaining backward compatibility with third party software when we release new versions of operating systems. This means that our new operating systems can accommodate older version of third party software as well as the latest versions.

In some cases developers' products do not always conform with Apple's recommended programming and interface guidelines, and may therefore, exhibit problems when we add new functionality to our

software. It is a case in point that many software packages written over 10 years ago still run successfully under that latest Macintosh operating system. This is because Apple Computer has the strategic advantage of developing both the hardware and System software for the platform.

This usually results in our users and developers having far less problems with software incompatibilities when upgrading the operating system than those experienced with other platforms.

We hope this response helps to resolve the issues raised.

**- Myrna Van Pelt
Corporate Affairs Manager
Apple Computer Australia**

• Those readers who missed our article last month may be interested to know that the supplied SCSI card had a wiring fault. Once replaced, the internal card is working fine. It's news to us that we are now enjoying a degrade of the bus transfer rate. Aside from no quality control on the dead SCSI card, the dealer also managed to not install the ZIP drive properly. The dealer principal (Next Byte, Sydney) then told us he would sue us - his customer! - for libel if we wrote anything 'bad' about his firm, which 'provided the best backup in the industry'.

In discussions with Apple after the article appeared, it was suggested that Connections, as a professional user, should have purchased the G3 from a Master of Media Apple reseller. These specialist outlets are, according to Apple, geared up to better serve customer like ourselves.

Problem is, we have worked our way through three such re-sellers in as many years. Price is not an issue, but in the case of some of those specialist resellers, competency, service and honesty are in very short supply.

With attitudes like this, it's hard to retain enthusiasm for a platform which is shipped faulty and with a new operating system that discards 'legacy' software like Word 5 - our favourite word processor. -Ed

Fence Sitting

I refer the comparisons in the May issue: DMX testers, Remotes, Backups; and - 2 popular Condenser Microphones.

Why can't the writer, in both cases, come out and say 'this one is the best?' Careful reading shows which is best, so it seems there is some kind of advertiser adverse caution in effect here.

Please advise!

-Paul Merrit, Kefpit, Vic.

** It's actually up to the writer, there is no prohibition on this. -Ed*

Style change

I'm curious, when I open my Connections these days I get to a certain page and wham! The layout changes!

In the May issue, turn from page 57 to page 58 - but put on your sun glasses first! **-Bianca Davis, Chatswood NSW**

The LIVE and LIGHTING section are designed by Catriona Forcer. The earlier pages are not. Do you like the difference? You don't say...

Write: PO Box 439, Epping NSW 2121 Aust, or mail@conpub.com.au

Audio and the new Blue Macs

Electric Factory distribute software and hardware in Australia and NZ for audio on Mac & PC.

Here is their latest bulletin regarding the new Blue Macs.

• Midiman Midisport USB MIDI interfaces: Midiman discovered that Apple's USB driver was a little imperfect. Apple will be releasing a new version of their USB driver shortly which will resolve all the problems. Until then, the Midisport is shipping and Beta Mac drivers are available.

It is important to note that the Midisport DOES use interrupt based drivers. This is how Midiman manage to achieve such accurate timing over USB (non-interrupt based devices will give latency of upto 6ms). It is also important to note that the Midiman drivers are full 32-bit, allowing the unit to be fully compatible with upcoming 32-bit Mac OSs

• Getting serial ports for your new G3:

We are all aware that the fancy USB-to-Serial converters are not compatible with MIDI interfaces. Thankfully, a couple of companies have come up with some solutions.

The new blue G3s come with an internal modem slot, and GeeThree have found a way to place a small circuit board into this slot and give the user a fully operational serial port. The serial port is seen as a normal internal port and is FULLY COM-

PATIBLE with MIDI interfaces.

The device is called the Stealth, and we have already tested it with two Emagic Unitor 8s and with a Midiman Biport.

The stealth is one of the Emagic recommended devices. The Stealth is available from us in limited quantities. It will have a RRP of \$149.

For ProTools users, we will also be stocking the Griffith Gport. This device is the same as the Stealth but it is the only device so far listed as ProTools tested. It is a little more expensive at RRP \$175.

• Pace Copy protection:

Many music programs such as software plug-ins, use the Pace install protection system. Up until recently, the authorisation for these software programs could not be performed on the new G3s with an external floppy drive. This issue has been resolved with the availability of the "USB Floppy Enabler". This driver is available from Pace's website, or Electric Factory can email it to you.

• Hardware compatibility:

The Emagic Audiowerk8 and the new Audiowerk2 are fully compatible with the new G3s as is Ensoniq's PARIS system.

**• Info: David Field
Electric Factory Australia
davef@elfa.com.au
www.elfa.com.au
Ph- +61 3 9480 5988**

Learn to Mix with the best



School of Audio Engineering



For more information and a free colour catalogue call any of these centres of educational excellence:

SYDNEY	55-57 WENTWORTH AVENUE, SURRY HILLS, NSW 2010, AUSTRALIA
MELBOURNE	2ND FLOOR, 14-16 FITZROY STREET, ST KILDA, VIC 3182, AUSTRALIA
PERTH	3-5 BENNETT STREET, EAST PERTH, WA 6004, AUSTRALIA
ADELAIDE	LEVEL 2, 282 GOUGER STREET, PO BOX 10411 GOUGER ST., ADELAIDE, SA 5000
BRISBANE	22 MAYNEVIEW STREET, MILTON, BRISBANE, QLD 4064, AUSTRALIA
HOBART	40 GEORGE STREET, NORTH HOBART, TAS 7000, AUSTRALIA
AUCKLAND	18 HEATHER STREET, PARNELL, AUCKLAND, NEW ZEALAND

recognised practical audio education

individual studio time
the best studio equipment
industry guest lectures
active graduate placement
limited enrolments
the only international audio school
the largest and first audio school
small theory classes
full university degree BA
industry recognised qualification
established 1976
30 colleges all over the planet
active student exchange program

Australian government approved in all states.

**ONLY the SAE programs guarantee you
50% credits to the degree**

Certificate - Diploma - Degree

* Australia exclusive educational association with
SOUTHERN CROSS UNIVERSITY - LISMORE

* International exclusive educational association with
MIDDLESEX UNIVERSITY - LONDON

* In cooperation in sound engineering with

WALT DISNEY Entertainment

www.sae.edu

PHONE: 02-9211 3711
PHONE: 03-9534 4403
PHONE: 08-9325 4533
PHONE: 08-8410 6599
PHONE: 07-3367 0143
PHONE: 03 6231 5446
PHONE: +649-373 4712

PRO AUDIO NEWS

JUNE 1999

Remix market goes Electrix

These caused a sensation at the Frankfurt Musik Messe show this year. Now they are on the local scene around the region.

Electrix have invented a complete new line of live performance-oriented, signal processor products, specifically tailored to the needs of the emerging ReMix DJ/musician and engineer.

Designed to full MIDI spec, every knob, button-action, and parameter control on an Electrix product is transmitted via MIDI as a Continuous Controller message. Each Electrix product allows the user to record real-time, front panel adjustments (or performances) as MIDI events, into

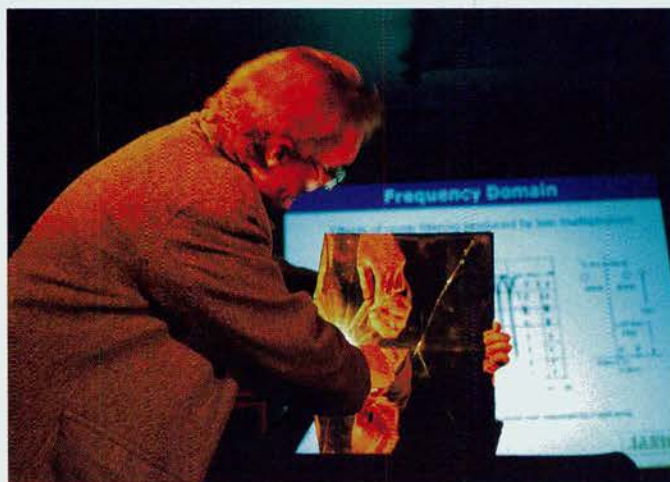
a sequencer and will also accept MIDI clock.

The design means that Electrix products can be used as desk-top or 2U rack mountable tools.

Three products make up the Electrix effects processor line:

WarpFactory is the Ultimate Vocoder. *Mo-FX* Time Synchronized FX is the first ever live performance-oriented multi-effects processor. Finally, *FilterFactory* Analog High Order Filter is a performance-oriented, full featured, MIDI controlled analog filter

- www.electrixpro.com
- Aust: Major Music +61 2 9545-3540



Audio Seminars take off

Audio Theory has always been a popular attraction but with few opportunities to learn. But this winter in Australia, a poultice of free audio seminars are drawing solid attendances.

At presstime **Meyer Sound** were hosting a seminar tour of eastern states, boasting no less than John Meyer as an attraction. They had taken almost 500 bookings, weeks beforehand.

Jands have accelerated their Industry Night seminars, held each month at a Sydney venue, The Globe. Early May Jands hosted an audio theory night where Sydney consultant Glenn Leembruggen laid on some snazzy demonstrations - including the *broken torch* with *grimy vanity mirrors* example shown above. Jands have been filling

The Globe at Newtown, having scheduled a free industry night on the first Tuesday of each month for almost a year now.

They again host a new audio theory session, with Glenn Leembruggen, on Tuesday July 6th. For free entry, register by calling +61 2 9582-0909.

Brisbane gets a chance to hear Glenn Leembruggen at an **AES Section** meeting on Wednesday June 9th.

Starting at 7:30pm, the meeting will be held at the Media Centre, Church of England Grammar School, Oaklands Parade, East Brisbane.

Topic: Some of the Loudspeaker Line Arrays used in major Australian Buildings.

For further details contact Neil Packer, +61 7 3857 6564 or neil@cstgroup.com.au

AMEK DIGITAL UPGRADES

Amek have announced the implementation of major new features on its Digital Mixing System (DMS) consoles

Tailored specifically for the modern audio post-production facility, the DMS-Post console is now a more powerful and flexible digital mixing console, which can be instantly reset to handle any format from mono to multi-stem 5.1.

Amek has introduced the Plus Pack add-on, which can be used with any DMS configuration. The DMS Plus Pack comprises the DMS-XP audio expander and the Channel Panel control surface module.



Georg Neumann GmbH Berlin



M 147 Tube

Tube Microphone

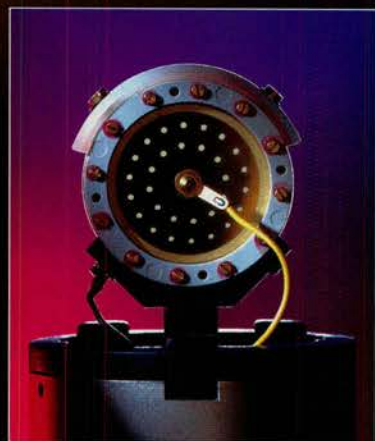
A Heart of Gold

At the heart of Neumann's stunning M147 Tube lies the same K47/49 capsule used in their legendary U47, driven by the award-winning circuitry developed for the acclaimed M149 Tube.

The result is a masterful combination of classic sound, versatility and precision – everything that has made Neumann a byword for technical excellence... and very attractively priced!

The M147 Tube – another Neumann legend in the making.

- Universal cardioid pattern
- Transformerless output circuitry for more controlled, un-coloured signal from capsule to output
- Extremely low self-noise level (-12dBA)
- Supplied complete with static mount, power supply, cables



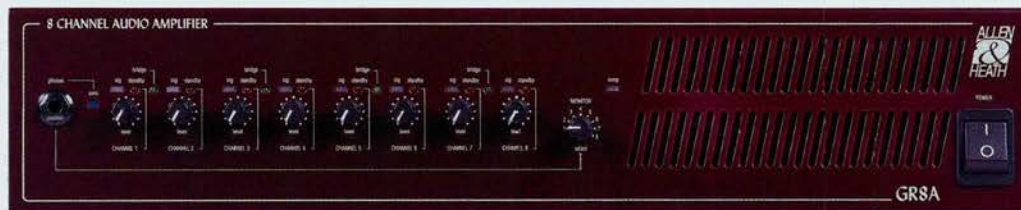
For information on the full range of TC Ultimate Sound Machines please contact:

Amber Technology Pty Limited ACN 003 231 187

Sydney	Tel (02) 9975 1121	Fax (02) 9975 1368
Melbourne	Tel (03) 9867 7111	Fax (03) 9867 8277
Brisbane	Tel (07) 3831 8444	Fax (07) 3831 8455

www.ambertech.com.au

Write in Reader Service Number: 130



8 CH INSTAL AMPLIFIER FROM A&H

Allen & Heath have expanded their contractor based product range with the introduction of an 8 channel power amplifier.

As well as being suited to a wide range of zoning, paging, surround and background music applications, the GR8A is the perfect companion to A & H's DR Series digital installation mixers and GR zone mixers.

The GR8A's eight independent channels occupy just 2RU and deliver 8 x 60w into 4 or by bridging pairs 4 x 120w into 8.

Among the units standout features are an individual channel by channel monitoring system

accessible by a front panel headphone socket and a remote control multi-pin connector which can switch individual amplifier channels to or from standby.

The GR8A is also equipped with balanced XLR ins with a linking facility to route a single input to other or all inputs, binding posts outs, +24v battery backup, front panel temperature monitor, three speed cooling system and level control lockout to prevent tampering.

Retail price: A \$2,995.

• **Aust: Technical Audio Group, +61 2 9810 5300.**



BSS have simplified Soundweb control with the **Jellyfish** controller (left). The six buttons and rotary encoder enable almost any control system combination, preset by software. Mic and line inputs add to the flexibility. www.bss.co.uk

Good to know that professional audio skills are shared. This is the operations chart at a major live venue we recently visited.



DPA & Shure

DPA Microphones has made an agreement with Shure Brothers of the USA to supply them with *Miniature Microphone Type DPA4061* for their new UHF wireless systems. The microphones are supplied with connectors to connect directly with the Shure systems and in most cases include a variety of DPA accessories. Shure will sell the microphones as a Shure product with Shure type numbers, but the manual will say that it is manufactured by DPA Microphones A/S.

• **Aust: Studio Supplies +61 2 99575389**



Line dance alert! The Epping Scout Hall (near our cyber cottage) has introduced line dancing each Tuesday morning! It's not even the fun, gay, fashionable variety—rather an event targetted at (ahem) older females. The resultant acoustic emissions and unco stomping/falling over noises have created difficulties in the sub editing of this page. Any errors should be blamed on the event promoters. Bluurrrr!

The Eliminator returns

Back in the late 60s the Electro-Voice Eliminator speaker system started a revolution. Most bands were using column speakers, paging horns, or guitar cabinets for sound reinforcement. (*We were there!* -Ed) The Eliminator changed all that.

The reborn Eliminator line is a 15-inch two-way, very high efficiency stage system, comprising a top box with a 15" woofer and a High-Q, 60° x 40° coverage moulded horn, along with a 1 x 18" sub woofer box with a built-in passive crossover network. The system is packaged with an 18 inch pole to elevate the Eliminator two-way system

Eliminator features Ring Mode Decoupling (RMD) for improved clarity in the vocal range and consistent quality at all volume levels. RMD technology "eliminates" mechanical and acoustical resonances.

It comes with American-built Electro-Voice components, including a pure titanium diaphragm compression driver and 15-inch cast frame woofer- and a five-year warranty.

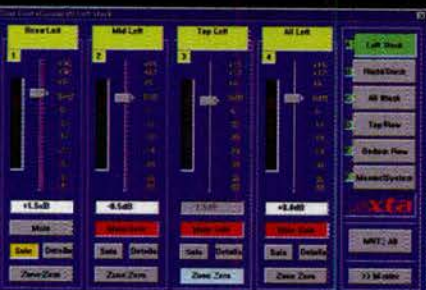
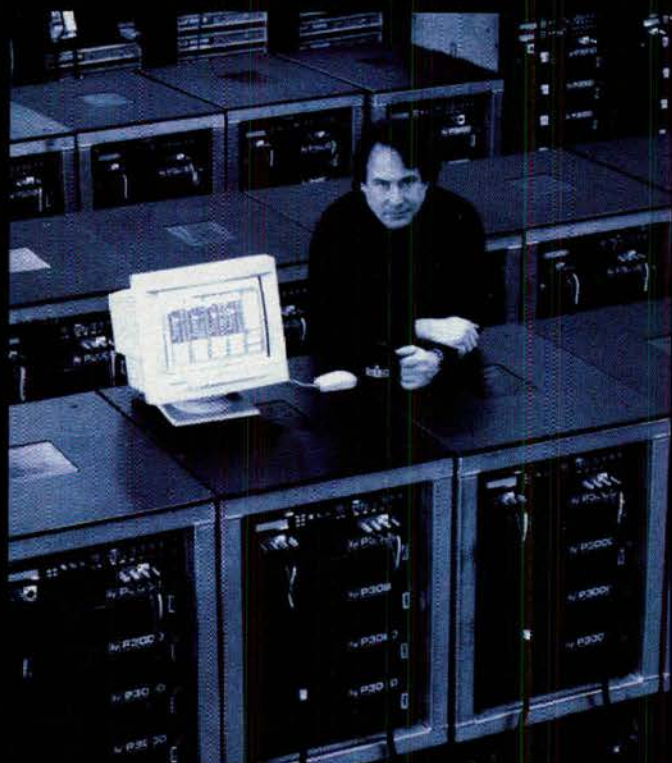
15 inch 2-way: A\$1199 RRP,

Sub 18 inch woofer: A\$1199.

• **Details: EVI Audio, +61 2 9810-4511**



Satisfaction!



HARRY WITZ (db Sound, Chicago) equips The Rolling Stones' touring system with thirtytwo DP 226's from XTA.

Combining XTA's AudioCore™ software and their new Array Control™ feature, Harry is able to provide array adjustment from the FOH mixing position.

XTA's Array Control™ feature gives Harry the ability to group outputs into any combination required, which makes the remote control of the Stones' large complex loudspeaker arrays an unconstrained reality.

Who says you can't always get what you want?



When will you change?

Distributed in Australia by: **Production Audio Services Pty Ltd** www.productionaudio.com.au
6-8 Elizabeth Street, Richmond, VIC 3121 Phone: (03) 9415 1585 Fax: (03) 9415 1595

Write in Reader Service Number: 123

Peak Audio

Competing at street level for loudspeaker sales is no game for the faint hearted. The Peak Audio HPS range features all US Eminence speakers in a trapezoid design, Australian built cabinet.

Standard features include full front steel perforated grill, a high standard crossover with bulb protection, and highly durable dark green tweed carpet covered cabinets with speaker mount top hats.

For best performance the HPS range is tuned, ported and lined with acoustic dampening material.

The Peak Audio range starts at A\$399 for a 100 watt 1 x 12" Eminence Speaker and dynamic horn, thence ranges to A\$995 (400 watt 2 x 15" Eminence speaker with Eminence hi frequency dynamic horn).

• **Central Musical Instruments, +61 3 9315 2244**



Sony Craic PA

The Craic, located in Hillarys Boat Harbour, Sorrento Quay, Western Australia, is a new Irish tavern/nightclub with live bands and DJ five nights a week. It is also the first venue world wide to install an entirely Sony in-house PA system, taking advantage of their new SRP, or Sound Reinforcement Product range.

FOH consists of four SRP-S1000 composite boxes and two SRP-B900 sub boxes - driven by SRP-P26 power amps. The whole PA is Sony branded, mixer, fx & mics incl.

• **Info: Peter Norman, Sony, +61 2 9887 6666**



CONTRACTOR AMPS FROM QSC

QSC have unveiled a comprehensive new series of amplifiers designed specifically for permanent installation. Based on discussions with leading contractors worldwide the new CX Series incorporates a feature set customised for the contracting market.

Three models, CX302V, CX602V & CX1202V, offer outputs of 250, 550 & 1000W/ch @ 70v respectively, with optional IT42 100v transformer pack for the CX302V, with a further five models, CX302, CX502, CX702, CX902 and CX1102 offering low impedance outputs ranging from 325 to 1100W/ch @ 4.

The new CX amplifiers are equipped with many contractor-specific features including gain controls with lcb detents, security panel, active inrush limiting and HD-15 Data Port for interfacing with QSControl, QSC's Ethernet-based computer control audio system.

The amps also include user-selectable high-pass filters to reduce transformer saturation and protect speakers, proportional response clip limiters, zero-idle-speed fan with rear-to-front airflow, XLR and Euro-style input connectors and barrier strip outputs.

Three low-cost crossover accessories, the XC-3, SF-3 and LF-3, plug into the amplifier's Data Port for two-way, three-way and subwoofer systems.

Retail prices (including tax) start at A\$2,295.

• **Technical Audio Group, +61 2 98105300.**



Numark introduce a professional turntable, the TT1, for those who aspire to advanced features. It boasts forward and reverse directions! Also +/1 10% pitch adjustment, and an LDC readout. Perfect for those with a needle habit. Retail A\$995.

• **Show Technology, +61 2 9898-1111.**

BGW RETURN TO AUST

They say if you remember the 70s, you weren't there. One name that definitely was there was the amplifier manufacturer BGW. The concert amplifier brands of the day were struggling to deliver 200 watts a side and had almost no protection. When they blew, which was painfully often, they generally took out all speaker drivers within a three mile radius.

BGW appeared in the very early 70s with the introduction of "Earthquake Cinema Systems", and was the first pro amp featuring modular design, multi speed fan cooling, and DC short circuit and thermal protection.

When presented with a short, they switched off both electronically and mechanically while

other amps just blew. The early models had 25Amp-power supplies, Teflon coated wiring and more current delivery capacity than many commercially available welding machines. They were the "el supremo" concert amplifier years ahead of their time.

New distribution and new models, retaining all the quality and innovation of the BGW heritage, are again available in Australia.

A feature you don't see much of these days are old-fashioned hand made wire harnesses, so no circuit board interconnects to corrode or come loose.

• **BGW is now distributed by Group Technologies, call +61 3 9872-5000.**

Audio Telex takes on US market

Australian audio manufacturer Audio Telex Communications Pty Ltd have shown several product lines at the recent NSCA convention in the USA.

Constrained from using their trademark outside the region, Audio Telex displayed de-branded versions of their ACM mixer amplifiers and PageNet system.

The products fared well, attracting serious interest due to a perception of quality due to being Australian Made, says

CEO Rod Craig.

The US market uses contractor amplifiers made by Jiel and Inter-M, both Asian sourced. The ACM amplifier costs more, but is feature rich, with 4 tone generators, vox mute, 6 zone speaker switching, phantom, and XLR's. "Could do 50% more manufacturing if the demand was there" said Rod. "We are talking with distributors in the US, Canada and Mexico about OEM branded versions of our products".

The biggest thing to hit the DJ scene ... since vinyl!

Sony's MDS-DRE1 is the world's first DJ-friendly MiniDisc DRE (Digital Remix Enabler) and player/recorder. Designed for high performance DJ work, the MiniDisc-DJ is functionally as close to traditional vinyl mixing as digital can get. And, equipped with the latest MiniDisc processing technology, the MDS-DRE1 provides DJs with outstanding performance advantages.

The MiniDisc-DJ also uses a new Sony system called Back -Track Record which allows the recording of a new track while it is playing an existing track.

There's almost limitless sampling capability for live performances and the unit features an advanced built-in studio-level editing system. These features alone can change the boundaries of music mixing and

enable complete creative freedom for DJs. The new MiniDisc-DJ offers all of the best features of modern CD mixing systems ... and more. These include instant track-pad play and cueing for all tracks, 8 preset hot starts, seamless loop and re-loop, as well as separate speed and pitch sliders.

The latter mean that tone pitch can be set independently from the beat speed and that you can mix in key, which also stops some vocal sounds from shrieking.

"With its new MiniDisc DJ, Sony has entered the DJ and dance market with an innovative product and is setting the standards and parameters for the future. I strongly recommend giving this a try before you buy new gear!" — DJ Dino (J Moranduzzo)

Sony MiniDisc-DJ MDS-DRE1 — DIGITAL REMIX ENABLER

Cue points assignable to and then recalled via key pads.

Easy to assign cue points to locate items on tracks.

Easy to assign cue points to locate items on tracks.

Track select, groupable under banks, accessed via key pads.

Speed altered over 24% range with slider control.

Pitch adjust over 24% range with slider control.

Auto pausing at the start of tracks.

Assignable intra-track looping and hot start track access.



FOR AN AUDITION OF THE SONY MINIDISC DJ CONTACT SONY OR YOUR RETAIL OUTLET.

Sony Australia Limited A.C.N. 001 215 354

Head office: 33-39 Talavera Road, North Ryde NSW 2113. Web: www.sony.com.au

Sydney (02) 9887 6666 Melbourne (03) 9264 0200 Brisbane (07) 3334 4000 Adelaide (08) 8234 3777 Perth (08) 9202 2555 New Zealand (09) 4157 7777.

SONY

RANE DSP MULTIPROCESSOR

Rane's new RPM26v DSP multiprocessor replaces racks of signal processing in fixed installations at a fraction of the cost, with better performance and easier setup and installation than a comparable stack of analogue equipment.

Saving several rack spaces with its tamperproof, dead-front, 1U chassis, the RPM26v provides all the signal processing required between a mixer and amplifiers with 2 analogue inputs, 6 analogue outputs and 24-bit converters with precision 32- and 48-bit internal DSP processing.

With pre-programmed configuration and user-friendly RaneWare software, the RPM26v includes a wide variety of intuitive functions including high and low cut filters, compression, delay, crossover, parametric EQ, splitting, input sum-

ming, limiting, trim controls and sine wave or pink noise test tones. Users need only select a DSP program and draw, enter, or copy and paste values in each of its signal processing blocks.

The RPM26v is programmable via its RW232 port, which interfaces directly to the RS232 ports found on PC compatible computers. This eliminates the need for a special cable, box or interface card. Up to 16 RW232 units can be serially linked to a single computer - so a sound system installer can access and program each device on line without having to unplug from the first device and plug into the next.

The RW232 port is also compatible with AMX and Crestron controllers.

• A\$7,295

Jands Electronics
+61 2 9582 0909

JBL RELEASES EON 1500 LOUDSPEAKER SYSTEM

Setting a new sound-for-pound record, JBL's flexible EON 1500 loudspeaker system is designed for use as a floor, ceiling, wall or tripod mounted PA speaker or as a dual angle floor monitor.

Lightweight and portable at just over 17 kilos, the new 15-inch two way passive system comes in an extremely rugged black enclosure that stands up to impact that would break the joints on conventional housings, says JBL.

Components include a liquid cooled titanium diaphragm compression driver, an integral 600 x 900 constant directivity horn, and JBL's patented SonicGuard circuitry which protects the compression driver from overpowering. Dual

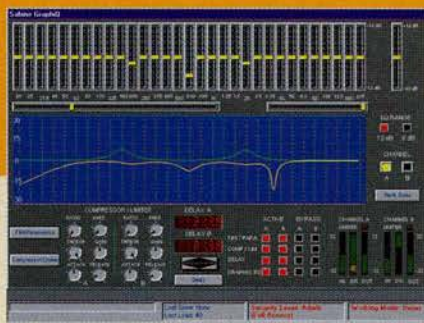
phone jack inputs and attachment points for wall or ceiling brackets are provided along with an integral 35mm pole mount.

• RRP A\$1,995

• **Jands Electronics,**
+61 2 9582 0909.



Digital EQ plus FBX Feedback Exterminator, Compressor/Limiter, & Delay, ALL IN ONE!



GRQ-3101S & 3102S: one and two channel slave units

HANDS-OFF DIGITAL EQ!

All four models include serial port & GRQ Remote software to control up to 8 units. View and edit response curves, save up to 70 presets, and use contact switching for remote scene changing.

Sabine's new **GRAPHI-Q™** 3100 Series gives you computer-based control of the industry's most advanced digital processing, all at one third the price of products with half the features. Our 24-bit A/D and D/A gives the cleanest audio possible, and Analog Devices' new 32-bit floating-point SHARC digital processor powers every Graphi-Q, allowing simultaneous use and independent control of these essential functions:

- 31-band Digital Graphic EQ, with ± 6 or 12 dB range and High & Low Cut Filters
- FBX Feedback Exterminator: Up to 12 Filters; industry standard automatic feedback control; works in setup and during the program. Super-accurate algorithm places filters on feedback, not on music.
- Parametric filters: Up to 12, fully programmable
- Full-featured digital compressor/limiter
- Digital Delay, with up to 1 second delay, adjustable in 20 microsecond increments

OR HANDS-ON!

Full front-panel versions with analog-style controls.



GRQ-3102: 2U, dual channel (two in / two out)



GRQ-3101: Single channel (one in / two out)

SABINE®
ADAPTIVE AUDIO

AUDIO TELEX
COMMUNICATIONS PTY LTD
Head Office Tel: (02) 9647 1411

*FBX and FBX Feedback Exterminator are registered trademarks of Sabine, Inc., and are the brand names of its line of automatic feedback controllers. Covered by U.S. Patent No. 5,245,665, Australian Patent No. 653,736, German Patent No. 69118486.0, U.K. Patent No. 0486679, and Canadian Patent No. 2,066,624-2. Other patents pending.

Write in Reader Service Number: 166

Getting Hum & Noise to Buzz Off!

Top Tech Tips with John Matheson

This month, I'm going to try not to offend anyone—except perhaps equipment manufacturers!

In my former life as head of a performing arts centre sound department, one of the things I used to enjoy most was being called in, usually at the last minute, to sort out a noisy sound system. Not!

You know, when those bastard lighting dimmer circuits are causing deafening levels of electric buzz in the foldback loudspeakers, in the guitar channel and in the reverb unit.

It will astound you to know that *all* problems with hums and buzzes are caused by audio equipment manufacturers not understanding Ohm's Law. Yes, that simple equation $V = I \times R$ (voltage equals current times resistance). How, why, you ask?

What Ohm's Law tells us is that current *cannot* flow without a voltage drop. (See Figure 1.) If a conductor, screen or wire that is a signal earth reference is also carrying current, then it is no longer a signal reference, it is a noise voltage source! The trick is not to create circuits in which the noise current can flow. We all know these circuits by the dreaded name earth loops.

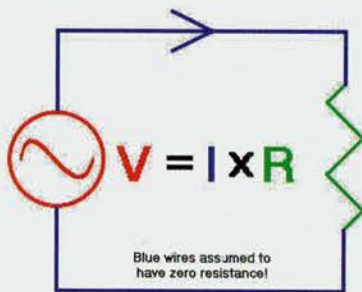


Figure 1: Ohm's Law illustrated

Building from the Noise floor Up!

Without any input connected, a piece of professional audio equipment should have nothing other than semiconductor sshh... noise in its output. If you don't know what I mean by sshh... noise, then have a listen to an FM tuner off station with the mute off: that's sshh... noise. It's also a bit like listening from a distance to a big surf swell at the sea. Remember this sound, it's normal in very small doses.

The mixing console is the heart of a big sound system where everything comes together. It is important that the mixer has a solid earth buss, and they often don't. (See *The PA PAGE* by Michael Orland in *Connections*, May '99.)

A solid earth wire from each connector's pin one or sleeve will shunt noisy earth currents to ground via the mixer's power supply earth, bypassing the noisy currents from circuits inside.

Assuming you have bought a solidly earthed mixer (unlikely) or you have already modified your mixer (more likely), have a listen to the solo or pre-fade* buss output, on a pair of headphones with the monitor volume at max. Make sure all input and output knobs or faders are at minimum and NOTHING other than power is connected to the mixer. (*If you are unlucky enough to have an old



Earthing

Kelsey mixer, this is called the "zoom". The Kelsey Sound Prism is the only mixer I have ever seen with a connector on the back labelled "Zoom Stack Buss Input"!)

Have a listen to each output, both main and auxiliary; they should all be dead quiet except for a little bit of semiconductor sshh... noise. If you can't pre-fade the outputs, then monitor them post-fade (remember to put the fader up!) If you can't hear the noise floor, which should sound like I described above, then sadly it doesn't mean you've got a super quiet desk. It means your mixer's headphone output has insufficient gain; try to find some more sensitive headphones, or get your electronics guru to modify the headphone output driver circuit. It is important to be able to hear the noise floor.

There should be no hum, no buzz, no frying and no sizzle—just sshh... noise. If there is a tiny little bit of hum, it may be because the mixer's power supply is a bit thin on filtering, or that the mixer manufacturer doesn't know Ohm's Law and has let power supply current run down a wire used for a signal ground somewhere. If there is a bad hum or buzz, it's time to get your electronics guru in to check the mixer earthing tips below, or time to sell your prized mixer to some unfortunate sucker!

Anyway, you have now found the mixer's noise floor. (It's caused by weeny little electrons whizzing around in circles and crashing into dumb atoms that get in the way, whilst they wait to do your signal's bidding.)

The Golden Rule

Follow this golden rule and you will eliminate the most difficult hum, interference and buzz problems and have a perfectly clean, low noise system every time! I promise!

Connect NOTHING to the mixer that degrades its noise floor!

If connecting something degrades the mixer's noise floor, consider it a fault and fix it. Every time you plug something in to the mixer, check the noise floor to make sure it is still OK. I expect that you will find that one or all of the auxiliary busses will be the worst affected by an earth fault and one makes a good "litmus test".

Remember Year 8 science class? A litmus test was a little bit of

paper that changed colour from blue to red when place in acidic solutions, or from red to blue in alkaline solutions. It is a pass/fail test. Either a solution is acidic or it is not. In our case, either the noise floor has changed (fail), or it has not (pass).

An earth fault on a given channel often does not cause noise in its own channel, which is why the noise floor litmus test is so important. What is more, two earth faults compounded may cause less noise than either fault on its own; use the litmus test after every *single* connection is made!

This is where I start when fault finding someone else's noisy installation – unplug everything from the desk (after labelling each lead if the sound technician hasn't already) and find its noise floor. Then I plug things back in one at a time, fixing faults as I find them. It's easier and quicker to get it right in the first place. Even so, it's never taken me more than an hour or two to have a large and complex sound reinforcement system totally clean.

Something I haven't tried, but ought to work well and be really convenient, is to plug the mixer's monitor output into a spectrum analyser with its input gain cranked up to show the noise floor. Watch the display as you plug things in – you should immediately see the result of earth faults.

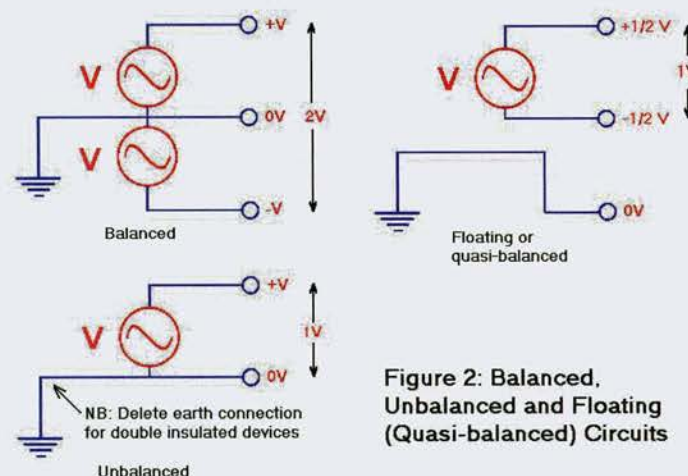


Figure 2: Balanced, Unbalanced and Floating (Quasi-balanced) Circuits

Balanced, Unbalanced and Floating (Quasi-balanced) Circuits

An electric signal needs a complete circuit for current to flow, therefore at least two wires or connections are required between a signal source and its destination. We also need to screen the signal from induced noise pick-up along the way. There are two types of connection – those that use one of the two signal wires as a screen are called unbalanced, and those that use a separate screen may be either balanced or floating. (See fig 2).

In a balanced circuit, the two signal wires seesaw above and below earth, always equal and opposite in potential about earth. A floating output is not referenced to earth. Neither floating or balanced circuits require the screen wire to be connected at both ends, nor should it be! (Microphones, DI's and double insulated equipment excepted.) In most circumstances the screen should connect at the source end, not the input end. If you are lucky, your mixer will have an earth lift switch on every line input, to make life easy.

Since an output may be balanced, unbalanced or floating, and an input may be balanced or unbalanced, there are six possible combinations of source to destination wiring! No one method of wiring will work for all circumstances, but don't worry, I've got solutions for all of them.

Earthing

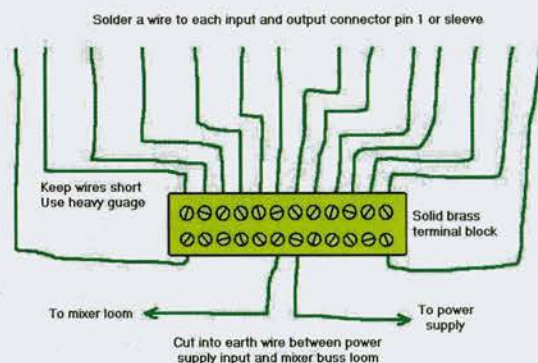


Figure 3: How to construct an earth loom for a mixer

Mixing Consoles

Assuming your mixer is not double insulated, which some small ones are, make sure that you have a solid, reliable earth connection from inside the mixer, through its power supply, power lead and mains power outlet. Watch out for loose connections. For chassis connections always use lugs with a star washer under to ensure a good contact through paint, coatings or corrosion, and use a spanner, not pliers, to do up nuts really tight.

All mixing consoles, bar the most expensive, run unbalanced mix busses inside. This makes them very susceptible to induced noise from earth currents running through the mixer. If your mixer has dubious earthing (ie if you can't see an earthing loom like the one described in Figure 3) even if it's double insulated, you can try installing an earth loom as illustrated. Note: this will NOT eliminate induced noise problems, but it will reduce them substantially.

What happens is that the new earth shunt is in parallel with the existing earth buss in the mixer, greatly reducing the resistance through which the noise current flows. However, because the noise voltage $V = IR$, we would need R to be infinitesimally small for V to approach zero. Since we can't get high temperature superconductor wire from Dick Smith's (yet) we cannot eliminate the shunt resistance or consequently the noise voltage.

Unfortunately, depending on the mixer's circuit board layouts and internal loom wiring, it is possible, though unlikely, that this new earth loom will degrade the noise floor of the desk, in which case you are stuck between a rock and a hard place. Look for that sucker to buy your desk!

Avoid putting a metal cased mixer directly onto a metal-framed stand, which may somehow connect to a ground. Keep your mixer insulated, except for its own power earth in the case of a non double insulated mixer.

Microphones

The body of a microphone is usually connected to the earth from the mixer via the screen. It will introduce noise if it contacts another metal, earthed object. Watch out for microphones that touch music stands or structural steel. Use plastic or insulated clips. Don't clip a lapel microphone to anything metal, like music stands, without insulating it.

After you have checked the mixer noise floor is still OK, then check the microphone noise floor. If there's any buzz on the microphone channel with its gain wound up, make sure the cable has a braided screen with 95% or more coverage, and check the screen connection at both ends of the cable. If it runs down a multi-core, you will also have to check the integrity of the 'core'.

If your cable buzzes badly without a microphone plugged in, throw it out and buy some decent star quad cable like Canare, Hartland or Beldon. The star quad construction gives an additional 20dB of immunity to noise pick-up on the cable.

Do not put a "suicide" plug (which breaks the mains power earth) on the musical amplifier. Musicians have been killed this way. (You may think you are carrying out a service to humanity, but the authorities are likely to take a dim view of this practice!)



THE LIGHTWEIGHT PROJECTOR FOR CORPORATE HEAVYWEIGHTS.

Built for the generation of sophisticated, fast on their feet executives, the EPSON EMP-7500 and EMP-5500 are the super-slim, multimedia projectors light enough to take anywhere. Both weigh a paltry 4.2kg with an A4 footprint. The SVGA model, the EMP-5500, projects at 650 lumens. While the XGA version, the EMP-7500, throws out a brilliant 800 lumens. Connect either model to your computer and video simultaneously for sophisticated graphics enhanced by built-in 3D stereo sound. For more information on EPSON's range of multimedia projectors call 1800 652 726, or visit our website at www.epson.com.au. Alternatively complete the coupon below and mail to EPSON Australia Pty Limited, 70 Gibbs Street, Chatswood NSW 2067.

I WOULD LIKE

☐ A DEMONSTRATION

☐ MORE INFORMATION

EPS 0359 The HALE Agency

NAME (Mr/Mrs/Ms)

POSITION

COMPANY

ADDRESS

P/CODE

TELEPHONE

FAX

EMAIL

EMP-5300



EMP-5500



EMP-7200



EMP-730C



EPSON® 

Write in Reader Service Number: 190



INFOCOMM ASIAsm

15-17 September '99

**Singapore International
Convention & Exhibition Centre**

**The region's only educationally
interactive event serving the commercial end of the**

AUDIO-VIDEO PRESENTATION INDUSTRY

*Alfinex • Amx Control Systems • Ampro • ASK • Autopatch • AV Media • AV Science • Barco • Brefford Manufacturing • Clarity Visual Systems
• Crestron • Chiavo Communication Specialties • Da-Lite Screen • Davis • Draper Screener • Dr. Seufert • EIKI • Electro-Acoustics Systems
• Epson • Eastman Kodak • Electrohome • Extron • Gentner Communications • H Wilson • Inline • ISCO-OPTIC • Inwood • JVC • In Focus
• International Optics • Lightware • LITHO-LAV • Luxor • Lanetco • Mitsubishi • NEC • Panasonic • Fichner • Proxima • RGB Spectrum • Lutron
• Navitar • Nippon Avionics • Philips • Progressive Marketing • Sanyo • Smart • Stewart • Texas Instruments • International Audio-Visual
• Trooper • Wilson & Gilkes • Wolfvision • Sony • Synelec • The Screen Works • Winsted* as of 2nd February, 1999

- See a myriad of multimedia products and technologies.
- Experience the brilliance of colour, light, sound and special effects as they come alive at the **ICIA[®] Projection Shoot-Out[®]**.
- Hear industry experts and trend setters debate the future of A/V technologies.

Organised by:
INFOCOMM ASIA PTE LTD

20 Kallang Avenue, 2nd Floor
Pico Creative Centre Singapore 339411
Tel: (65) 297 2822 Fax: (65) 296 2670/292 7577
E-mail: mpgroup@pacific.net.sg
Contact: Gwencolyn Goh

Response Form:

FAX US NOW at (65) 296 2670

and we'll rush you the required information !

- ☐ I wish to exhibit at ICIA's Infocomm Asiasm.
- ☐ I wish to participate in the seminar.
- ☐ I am interested in visiting only. Please send me visitor details closer to event.

Name: _____ Designation: _____

Company: _____

Address: _____

Country: _____ Tel: _____ Fax: _____

E-mail: _____

If the cable on its own doesn't buzz, but the microphone does when plugged in, you've either got a lousy microphone, or you're in an extremely high strength electromagnetic field- get out quick! Note, some older design dynamic microphones and ribbons may be somewhat susceptible to induced hum. Keep them away from sources of interference.

Direct Injects (DI's)

It can be very tricky to get noise free connections to a crappy designed musical instrument amplifier. Firstly, the instrument, guitar, keyboard, or pick-up is unbalanced, so it is referenced to what is inevitably a dirty earth. Secondly, the screen needs to be continuous from the instrument amplifier to the instrument, through the DI, and can not be broken without potentially introducing noise into the musical amplifier.

It is best to keep the mixer earth separated from the instrument earth. *Do not* put a "suicide" plug (which breaks the mains power earth) on the musical amplifier. Musicians have been killed this way. *(You may think you are carrying out a service to humanity, but the authorities are likely to take a dim view of this practice!)*

If you have passive, transformer type DI's, use the earth lift switch or an earth isolation adaptor to separate the instrument and mixer earths. Unfortunately, passive DI's may alter the sound of an instrument plugged through them, because of their relatively low bridging impedance.

If you are using an active DI with batteries, use the earth lift as above. If the DI only runs on phantom power or its batteries are flat, the only option is to run mains power for the musical amplifier from the mixer's mains power source, or at least the same switchboard. Then, as long as no other equipment earth faults are introduced, there will be no additional noise voltage on the musical amplifier's earth other than what it generates internally, relative to the mixer's earth.

If you want the best of all worlds, ie a extremely high impedance, earth lift-able, phantom powered, high end audiophile quality

DI, check out The Leon Audio Company at <http://www.leonaudio.com.au/DEFAULT.HTM#Home>.

This fancy DI came out of one of those long nights when the scotch was flowing and your author and Ian Du Rieu of Leon Audio dreamed up the perfect specification for a DI!

Once you have plugged in the DI and satisfied yourself with the litmus test, before you plug in any instrument leads check to see if the DI channel is clean. If it isn't, chuck it out and get a decent one. It must have jack connectors, which are insulated from chassis, so that the earth from the mixer screens the guts of the DI, even when the lift switch is operated.

Then plug in the instrument and amplifier and attempt to solve the noise problems at that end. (See Figure 4.) Start by throwing out the musician's crappy guitar leads and giving him some decent ones. Don't expect to get them back, just think that maybe one day you'll be knighted for services to the music industry.

Guitar and other instrument pick-ups are generally very susceptible to induced noise, especially ones with built-in unscreened tone controls. Your only solution may be to insert a noise gate or

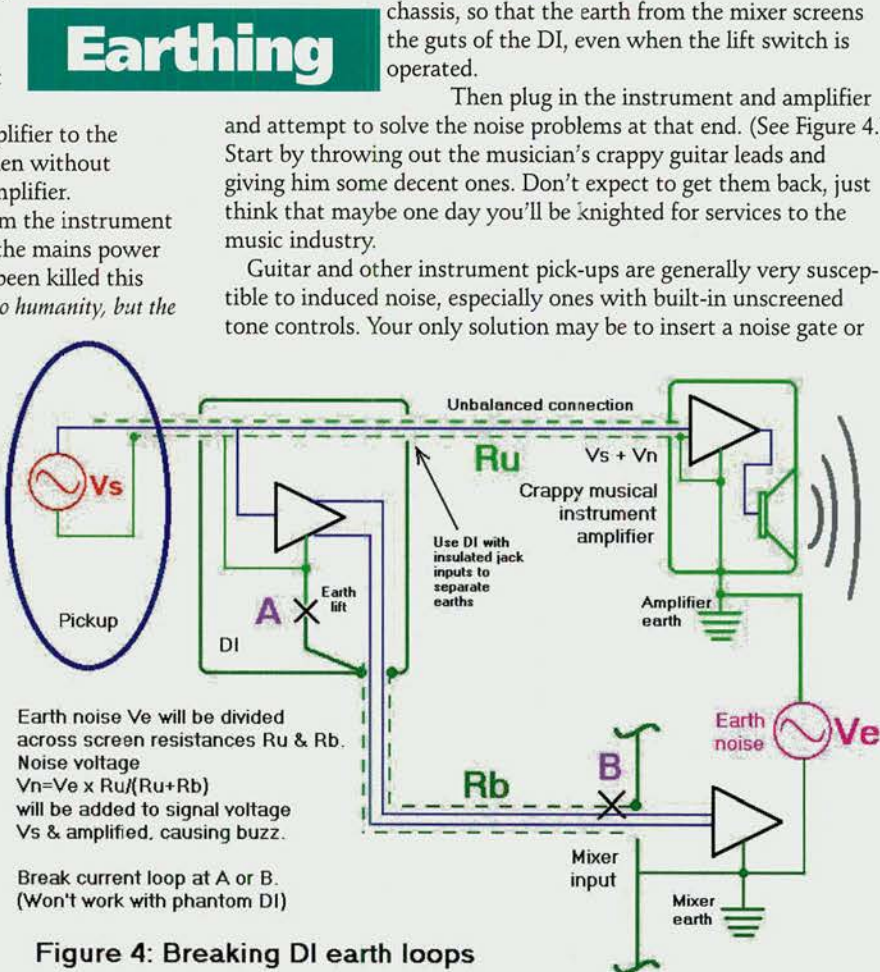


Figure 4: Breaking DI earth loops



CHIAYO has the Cost Effective Alternative!

In Single & Multi Channel UHF / VHF Wireless Microphone Systems



UHF Multi Channel / VHF Single Channel
Optional Cassette Deck

NSCA

"The Microphone Company"

Contact NSCA for detailed information & your nearest Chiayo reseller

Single Channel
VHF & Multi
Channel UHF
Systems



National
Systems
Corporation of
Australia Pty Ltd

Ph: (03) 9434 1888 Fax: (03) 9434 1866 Interstate: 1800 441 440 Email: nsca@ozemail.com.au

Write in Reader Service Number: 192

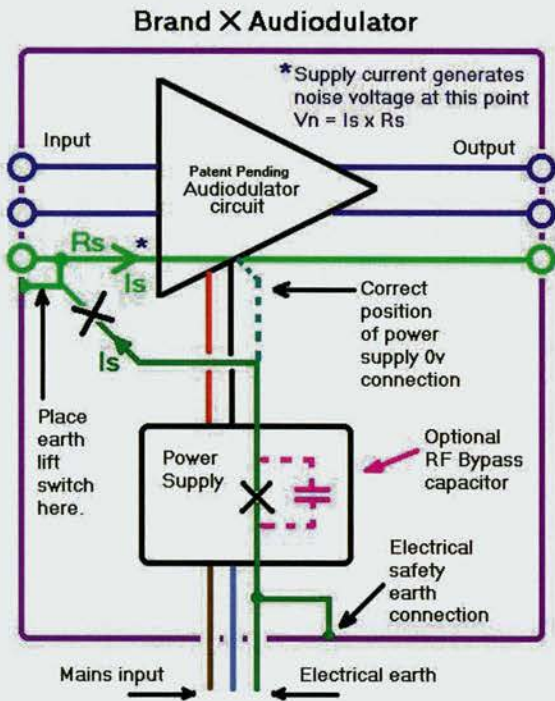
downward expander to quiet things down. I once had to line an orchestra pit around a bass guitarist with earthed aluminium decal foil (stiff tin foil) to shut up his pick-up. If the musicians are in an orchestra pit with dimmed lighting, ask the electrics crew to put a "Variac" on the sconce lights instead of using an electronically dimmed lighting circuit.

Earthing

Mains Powered Equipment

The trouble with mains powered equipment is, unless it is double insulated, it will most likely have its signal reference tied to its power earth, which is going to be a different potential to the mixer's power earth. The reason for this difference in earth potentials may be because of a mains power related issue, assuming the device gets its power from a different circuit to the mixer. (See *Why Isn't Earth- well, Earth* below.)

However, more often than not the problem arises because the equipment manufacturer does not understand Ohm's Law, and has allowed some of the device's 0 volt power supply return current to run down a wire that is used in the circuit as a signal reference earth. Because of the current flow, a noise



Typical piece of professional audio equipment with built in earth fault. Can be corrected by breaking earth at points marked X, and reconnecting power supply 0v as shown. Note: noise voltage V_n may not effect this device, but will still be passed onto other devices which can become noisy.

Figure 5: Mains powered equipment

voltage will be imposed upon the device's signal reference, which looks and sounds like nasty power supply ripple current. (See Figure 5.)

If the device connected by a balanced connection to the mixer, this noise voltage will not be amplified by the mixer input, but if the two earths are connected the noise current *will* be passed on to the mixer where it can cause a problem somewhere else. This is usually most obvious on the auxiliary busses, hence the litmus test.

If on the other hand the device is connected with an unbalanced circuit, the mixer will not know the noise voltage is spurious and will amplify it along with the desired signal. And it can still cause a problem elsewhere as well.

The best solution is to break the connection between mains and signal earths in the external device. Check to see if the device has a mains earth lift switch and use it. See figures 6 & 7 for tips on how to wire balanced and unbalanced inputs and outputs together

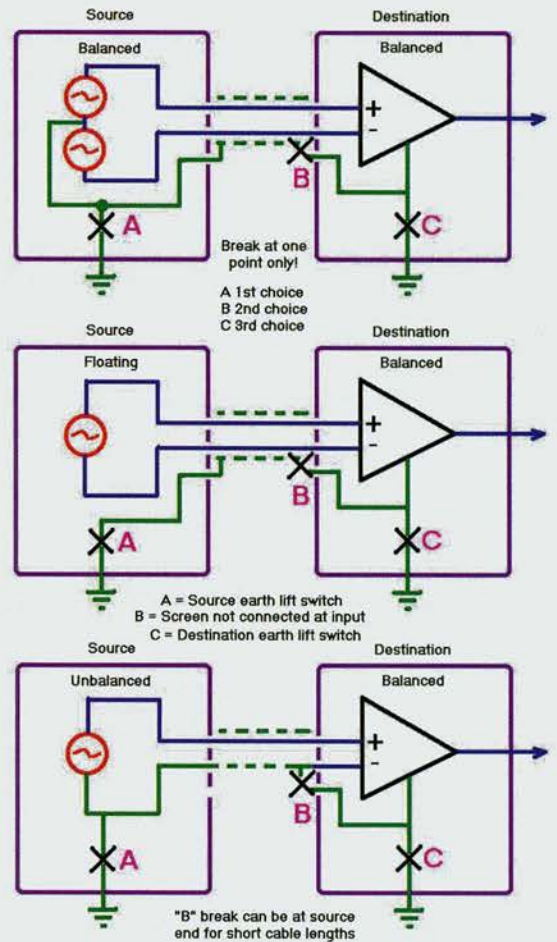


Figure 6: Breaking earth loops with balanced inputs

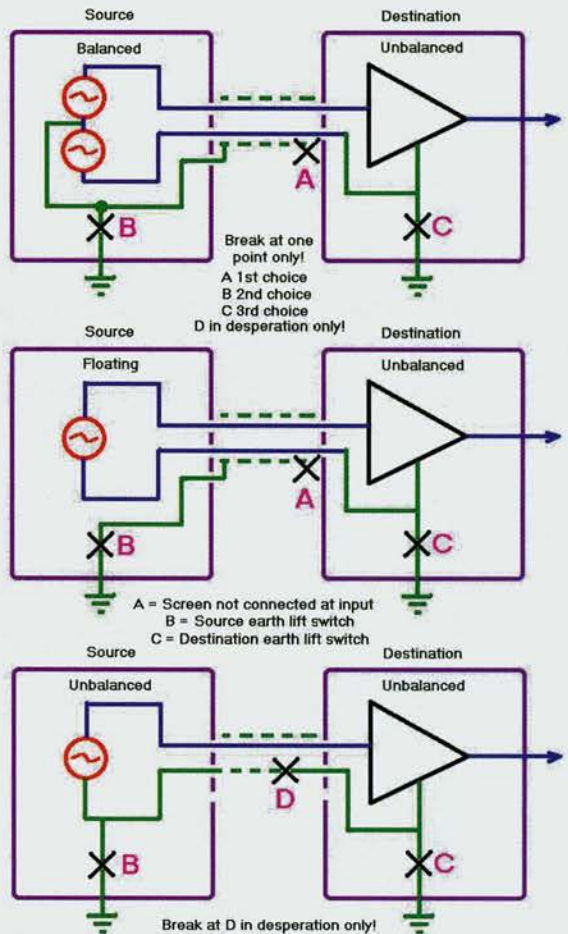


Figure 7: Breaking earth loops with unbalanced inputs

without creating earth loops. Don't cut the supply lead earth wire or use "suicide plugs", as this is illegal, and dangerous.

If there isn't an earth lift and the circuits are balanced or quasi-balanced, you can get by with inserting some XLR adaptors with the pin one (earth) connections removed, to break the connection between devices.

Alternatively if the device is unbalanced, you may get away with lifting the signal earth connection and relying on the earth through the mains, but this is not ideal. The best options are to install a balanced isolating transformer between devices or to get your electronics guru to modify the device so that you can isolate earths correctly as described above.

Amplifiers, Crossovers and Other Stuff

Note that the above troubleshooting methods apply equally to connections between all bits of mains power equipment, not just mixer inputs and outputs but also between mains powered peripherals, such as crossovers and amplifiers.

Starting from the loudspeaker, work backwards towards the mixer, plugging in devices and listening for spurious noises in the loudspeakers. With just an amplifier connected to a loudspeaker, ie with no input to the amplifier, you should hear just sshh... noise in each driver. Warning: if you want to keep your hearing intact, do not plug in signal lines whilst you have your head in front of a loudspeaker!

Why isn't Earth -well, Earth?

In Australian power wiring, we have a three-wire system containing an active (hot) wire, a neutral (cold) wire and a safety earth wire. The earth wire is not intended to carry current, but is there purely to shunt electricity from a faulty appliance to ground, thus protecting the hapless creature using said faulty appliance from toasting by electrocution by personally being the shunt to ground.

At the electrical switchboard

(fuse box) the earth wire is connected to, you guessed it, the earth, via a metal stake driven into the ground. For reasons of archaic origin, the earth is strapped (bonded) to the neutral wire in switch boxes, which is what ensures the neutral is "cold". Neutral wires *do* carry current and therefore, according to Ohm's Law, will have voltage drop. Thus the neutral voltage at a mains outlet at one point in a building will be different to other points.

Electrical installations for buildings are usually wired according to the MEN (Multiple Earth Neutral) system

described in The Australian Standard SAA Wiring Rules. Under this standard, earths may be strapped to neutral in each switchboard, not just where the main power feed comes into the building, hence different earths around a building can and will be at different voltages above ground! If any neutrals are carrying dimmed lighting current, then the earths will have dimmer buzz on them, guaranteed.

Even in a building where the earth is tied to neutral at only one point, there will be some small potential differences on earths at different points

induced by capacitive and inductive coupling from the wires carrying voltage and current. One solution is to have a dedicated isolated technical earth, but except in the most extreme of circumstances this really isn't necessary. Having a rock solid ground reference is not essential. What is essential is an understanding of good earthing and screening techniques, which will solve this interference problem and a lot of others as well.

John Matheson designs electro-acoustic systems for Bassett Acoustics. Call him on +61 8 8363 1000.



400W POWERED MIXER

Lo-Z input jack (XLR connectors)
Hi-Z input jack (1/4" phone plug)
Guitar, keyboards, drum machines, CD etc.
Pad S/W (-20dB) High level signal source.
Each channel, Effect, Monitor signal control.
Dual 7 Band graphic EQ. Individually selectable phantom power. Stereo 2-track input channel with 3 band EQ. Dual 5-Dot level display.
Stereo, Aux channel operation. Digital multi-effects (DSP) (4 kinds 64 program).
Effects External foot S/W. Tape Rec & Play jack. 200W - 200W bi-polar amplifier. High performance protector.

STACKS UP



PRO-104D

PM-4RV

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

PM-401D

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

PM-602D

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

PM-802D

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



Distributed in Australia by CMI Professional Products Group 03 9315 2244

Write in Reader Service Number: 198

Connections

AV PRESENTATION & EVENTS

NEWS



NEW STAGE SYSTEM ON THE MARKET

Kevin Harman (pictured) is MD of Pro Stage Australia, who rent stages in South Australia. He got into stages by accident, having been an actor he preferred to work on them. Now he is poised to make his mark on the world stage, by selling them. I visited Adelaide for the launch of the Pro Stage System. A continual stream of interested customers were impressed with the system, as was I.

Pro Stage Australia has devised a very saleable series of stage modules, based on their own experience in a market that is sensitive to cost, speed and safety. Increasingly, says Kevin, safety considerations mean that setting up a stage must be easy - as well as the stage being safe.

A stage is not usually a sexy technology. Pro Stage Australia has an ingenious series of innovations in their designs. The basic stage deck weighs just 20kg, and measures 2m x 1m. This deck is load rated to 5kpa, allowing 500kg per square metre loading. This meets some tough lo-



cal government Australian standards - and makes for a very safe stage when you consider some concrete carpark decks are rated at just 3kpa.

The beauty of the Pro Stage system is in the detail. It is breathtakingly fast to assemble. Kelvin states he knew he had perfected the design of the Modular Series when an accountant was

able to erect it without instructions. The weight factor means almost any two humans can build a stage using these modules.

There are three kinds of stage modules on offer. All three use the same riser top. At its simplest, the Riser series has simple fold down legs at a preset height. Its used for small stages and catwalks. The Modular Series has different fixed or variable legs, again they fold down.

The core 2m x 1m deck module is based on a proprietary extrusion, with a choice of floor surfaces. The deck module can

please turn the page

Gearhouse debut OptiScreen

New outdoor screen pushes technology for brighter image

We can't wait to put OptiScreen side by side with other large screen formats. Connections suspects the new GearHouse developed screen could be the brightest yet seen.

It's an LED large screen, developed by GearHouse. It comes in modules measuring 1280mm x 960mm tall, and just 150mm deep. You can run up to 12 x 12 modules to form a wall 15.3 x 11.5 metres.

The resolution appears good.

GearHouse have opted for a four LED per pixel system, there are two green, one blue and one red LED in a square with 10mm pitch between each, making each

cluster of four LEDs into one pixel at 40mm pitch.

So there are squintillion LEDs on board, and each has a 50,000 hour life.

Two things to know. One, the screen draws serious power. A 5 x 5 example, measuring 6.4m x 4.8m can suck happily on 190 amps - depending on level. It can be run at lower light levels and consume less mains.

Second, the panels can't be split: like a video wall.

But as an all-weather, portable video display system with outstanding colour reproduction, this thing is very flash.

>please turn page



The Rebirth of a Legend

Features

Top:

- 15" 2-Way, Ring-Mode-Decoupled
- 300 Watts (continuous) at 8 Ω
- 60° x 40° CD Horn with DH2010 Driver
- Frequency Response: 50-20,000 Hz
- SPL: 99dB (1W/1m)

Sub:

- 1x18" DL18BFH
- 400 Watts (continuous) at 8 Ω
- Frequency Response: 40-100 Hz
- SPL: 98 dB (1W/1m)



Eliminator

For your
nearest EV
dealer,
contact
EVI Audio

OPTISCREEN

(continued)

Assembly is staggeringly fast and semi automated. An extremely clever and robust aluminium support frame is assembled first. Water ballast may be used to stabilise the system outdoors.

Then each panel is positioned at the bottom of the frame, and winched up into final position via an internal lift mechanism.

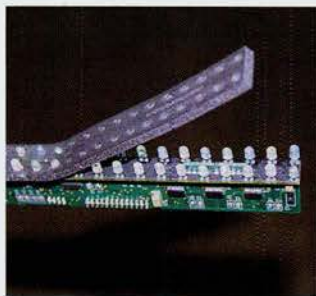
This is powered by a battery cart, so the screen can be built anywhere, before mains power. Gearhouse quote a four hour assembly time for an average system, including alignment.

The machined aluminium screen panels have a black infra-red reflective coating. The LED strip (pictured) pushes through matching holes in the panel. The LED strip itself is insulated with the Neoprene strip shown. Gearhouse claim that the actual LED strip itself is waterproofed, and that they have successfully run one underwater.

In any case, the aluminium face of the module has horizontal ribs between each row of virtual pixels - which serve to protect the LEDs and also reduce direct sunlight. It appears that the wall could withstand missiles like rocks or tinnies, or even a Sydney hail storm!

The alignment of the pixels and thus each pixel group is critically consistent on OptiScreen.

OptiScreen is the ideal tool for



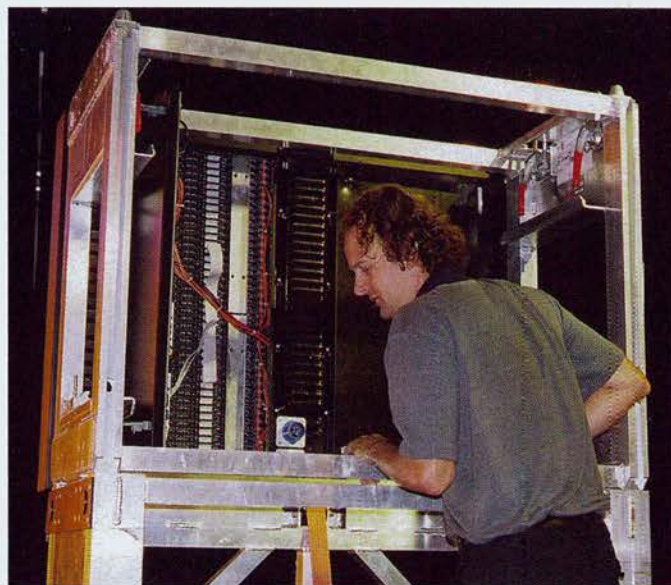
organisers of sporting events, large scale concerts and festivals, and corporate presentations. In fact, wherever there exists a need to involve the audience completely and to convey clear, readable messages. The demonstration I saw didn't include graphics - but Gearhouse are at pains to assert that the virtual pixel is particularly suited to text and graphic reproduction.

Signal feed is via fibre optical pipe, the refresh rate is 100 - 120Hz. OptiScreen accepts composite or component video.

OptiScreen is already a success overseas where it has been used in events such as the Boyzone, M People, and Whitney Houston UK concert tours and is set to make its mark at the British and Monaco Formula One Grand Prix races later this year.

OptiScreen is in Sydney in unknown numbers, Gearhouse have at least two screen systems that we could see at our demo in May.

• **For more information on OptiScreen contact David McMillan on at GearHouse +61 2 8344 1200.**



Digigami Releases MegaPEG 2.0

By John Grimshaw

Digigami's latest release of MegaPEG 2.0 makes this product one of the fastest software based MPEG-2 encoders available for the PC.

For non-linear video production (video editing on a computer), this upgrade increases the speed at which the MPEG-2 encoding is done by up to 12 times.

For the purposes of reviewing the new upgrade, Digigami has supplied us with the most recent beta version of this software. The full version is due to have been released by the time you read this article.



pliant MPEG-2 Program streams for use on CD-R and DVD medias, something that many other products do not do. They will only encode MPEG-2 Transport streams.

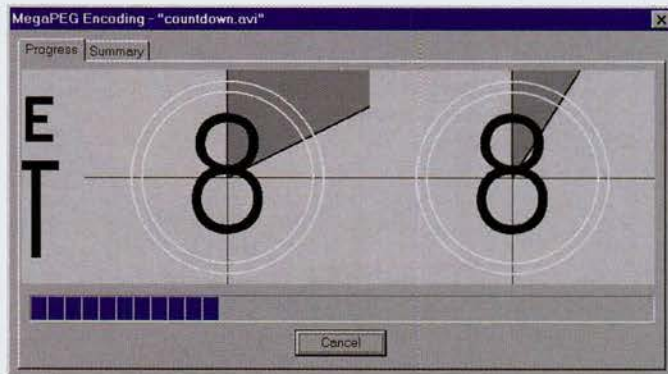
MegaPEG is well known for its easy to use interface and ability to encode batches of movies instead of one movie at a time, which, for many in this industry, can be time consuming. In addition, Digigami offers a 2 year subscription plan to its customers, which includes all upgrades and updates to the MegaPEG product line.

About MegaPEG

Software for turning a AVI or Quicktime file into an MPEG has been around for a few years, and there are many software options out there to choose from. What

Using MegaPEG

The software installation is quite quick and obvious - as we have come to expect (but often don't get!) from new software these days. On first opening the pro-



sets MegaPEG apart from the rest is its ability to maintain broadcast quality comparable to high end hardware encoders. MegaPEG will convert video files into a range of MPEG output formats including:

- MPEG-1 (ISO/IEC 11172-2) - used for a variety of applications, from internet to hard drive playback. The VideoCD format (White Book 2) is also directly accessible.

- MPEG-2 (ISO/IEC 13818-1) - as used on DVD

MegaPEG is a fast MPEG-2 transcoder that can use both QuickTime and AVI files as a source. It is also cross platform, which in many video production labs can be considered a plus.

MegaPEG produces ISO com-

gram, you are presented with a blank batch document, just waiting for you to fill with video files to encode.

To test the software, I used a convenient 11sec AVI which I happened to have.

Using this AVI, I was able to easily create different sized MPEGs, each optimised for different applications. An MPEG is usually made specifically for the medium from which it will be played. An MPEG that is destined for download on the internet has been compressed considerably more than one that is to be played from a DVD. MegaPEG allows the operator to have direct control over each stage of the compressing opera-

Please turn the page

be used alone atop a truss deck system, or have modular foldup legs or even fixed height riser legs. Every deck has roto-lock devices inbuilt, which establish an absolute lock between deck units.

Standardising the deck module means a staging firm or venue can adapt to customer requirements.

Stage levelling is a chore where



an uneven surface is present, and Pro Stage overcome this with a variety of options, including a very clever vertical leg drive in the Modular Series. This allows power screwdriver adjustment from the stage deck itself - fast and simple.

Kelvin can see schools and convention customers as a big potential user, but stage rental firms will also like the Pro Stage System. This is because each riser top (deck module) has a tough nylon tongue on each edge which mates adjacent deck modules and also keeps the modules looking good, because they act as bumper strips. Loaders are less likely to damage venues because the deck modules weigh 20kg, and if they do; the impact will be more likely to be absorbed by the nylon tongues.

Supporting the deck are modular folding supporting legs in the Modular Series, (pic, below) which immediately snap into place. Leg height can be fixed or variable, with a variety of options. Additional modules can be



piggy backed on, without the need to lower and level one pair of support legs. A deck module can be suspended and locked between two Modular Series units (see pic at left), for example.

Pro Stage have devised a unique storage, transport and assembly unit (see right).

The Long Truss support system (See previous page) comes in a flat stage or tiered seating format, folding trusses are locked together to form a fast and stable stage.

Overall, an impressive range. We wish them well!

• **Pro Stage Australia +61 8 8359-0622.**

Julius Grafton flew to Adelaide courtesy of Pro Stage Australia



36 hour SALE

IT'S ON AGAIN!

- Lighting and audio equipment old and new
- 9.00AM 22/6/99 to 9.00PM 23/6/99
- Discontinued and demo stock from most of our suppliers
- 2nd hand and "as traded" equipment
- Ex hire equipment
- New equipment at heavily discounted prices

THIS IS THE SALE NOT TO MISS!

1 Mary Pde, Rydalmere NSW 2116
Phone +61 2 9638-0302, fax 9638-0331
sales@lotsofwatts.com.au
hire@lotsofwatts.com.au

The company everyone else uses

**Lots
of
Watts**
Pty Ltd

EPSON's 1200 ANSI portable

350:1 contrast ratio for LCD mini

EPSON announces the EMP-5300 multimedia projector, which generates 1200 ANSI lumens to project images even in well-lit environments.

The EMP-5300 has all the features to meet SVGA, VGA and XGA resolutions.

Using polarised beam splitter and panel on prism technology, the EMP-5300 projects accurate light information through its lens. It features a higher aperture ratio, and has three 1.32 inch LCDs.

The EMP-5300 has a high contrast ratio of 350:1 which enhances the colours projected. It also eliminates 'hot spots' or uneven image brightness with 85 per cent illumination ratio.

With 1200 ANSI lumens, the EMP-5300 is also able to project onto larger screens, for example a 250cm diagonal screen.

"The EMP-5300 is the brightest, high-performance portable projector available today", claims Tom Squillaciotti, Product Man-

ager at Visual Instruments, EPSON. "It does not sacrifice image quality, even in well-lit environments, so customers can present, even in more difficult conditions."

"The EMP-5300 has Advanced Image real-time Resizing technology (AIrR) giving the projector superior image quality, multi-platform presenting capabilities and a comprehensive range of functions. This means it's highly-advanced and easy to use."

Multi-platform presenting

The EMP-5300 includes two computer inputs and two mouse ports for Windows or Mac platforms. If two presenters are presenting on different platforms, the EMP-5300 switches easily between the two. It can also distinguish between PAL, SECAM and NTSC video standards.

• Rec retail A\$11,695 inc. tax. or A\$10,295 ex tax.

• **Nearest Au EPSON dealer:**
Phone: +61 2 9903 9000

Kodak intro new digital projectors

Kodak is adding two new models to its line of personal digital projectors. Based on the Texas Instruments digital projection technology, these new models provide exceptional image quality and excellent color accuracy, says Kodak.

Combining 1,000 ANSI lumens and true XGA resolution, the seven-pound DP1100 digital projector provides mobile presenters with extremely high image quality in an ultra portable model. The more affordable DP900 has a slightly lower lumen rating (900) and true SVGA resolution in the same small package. Both projectors feature built-in manual zoom and focus to project just the right-size image in virtually any venue.

The DP900/DP1100 projectors use advanced Digital Light Processing (DLP) display technology from Texas Instruments, said to produce smoother, film-

like video playback- even in a well-lit room.

They feature a metal halide lamp and built-in speaker.

◆ Kodak have announced a joint venture with Audio Visual Australia, to distribute Kodak digital projectors.

Info: www.kodak.com/go/projectors or call Audio Visual Aust, 1800 032 408.

NEC upgrade LCD's

NEC Australia have announced an upgrade of their popular portable LCD projectors, the MT830 and MT1030. Higher light output has been achieved by improving the lamp surface reflectivity and the integrator.

The new versions are MT830+ and MT1030+.

• **Call Les Boros, 13-16-32**

MegaPEG 2.0

(continued from previous page)

tion, thus making the finished product easy to "specialise" for its specific purpose.

Prior to encoding, the user sets the bit rate (amount of compression) that is required for the final MPEG. Then for the audio, the sampling frequency, mono/stereo options and enhancement is set. The video frame rate and picture dimensions can also be set. Finally, the user defines whether the output should be VideoCD (White Book 2), MPEG-1 or MPEG-2, and the computer is ready to encode.

The numerous variable controls offered to allow total control over the finished MPEG may confuse the novice operator, but the program also contains numerous automatic selections to allow a novice to use MegaPEG effectively.

When the computer starts encoding, it begins by creating a file of the compressed audio. A display of the wave form is visible during this process. This is followed by the video, which is displayed frame by frame as the encoding happens. These two

files are multiplexed together into a third file, which is the finished MPEG. (Note - to playback MPEG-2 files, you will need additional software such as Soft DVD).

This process does take quite a bit of time, so this job should be processed on the fastest machine available.

Obviously, the more enhancements or changes the computer has to deal with while encoding, the longer the job will take. Simple encoding of a 6min 30sec video clip took longer than 5hrs on a P2-266.

Like any software that needs to render, encode or decode, the faster the computer, the faster the finished product is ready. MegaPEG has a number of other features including video enhancements, in and out points for segment encoding and batch encoding for MPEGing a number of video files.

This will certainly be a useful tool for those that produce video using a non-linear editing facility and worth considering if you are looking to produce DVDs.

• **For further information on MegaPEG 2.0 visit the MegaPEG 2.0 Web Site at <http://www.digigami.com/megapeg/mp2>**

Exposure do the Humane thing

SYDNEY: Elise Hawthorne from Exposure Ink pulled together the Faux Fur Fashion event to benefit the Humane Society in May. The night went off very well at The Cave Nightclub, showing designs from well respected designers using non animal fur.

Technical Directions donated the videowall, **David Hawthorne**

from EXPOSURE ink. programmed and operated on the night. **Visions in Style** did the staging for the event.

Fireworks were supplied by Millenium Fireworks. The gig featured Human Nature and Wendy Matthews, with DJ Paul Holden.

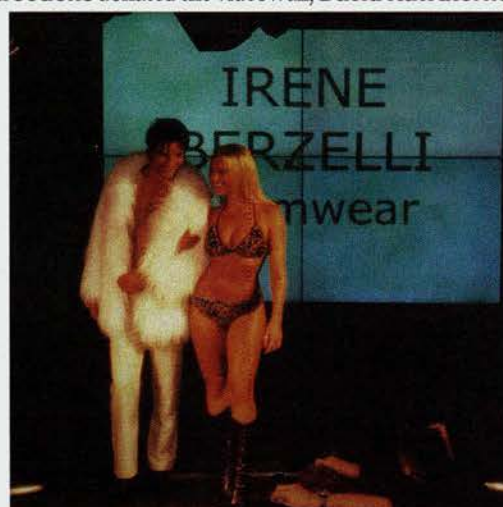


Photo David Hawthorne EXPOSURE ink.

Soundcorp PTY LTD

**suppliers of professional audio,
video and control equipment**



CNMSX-PRO NEW GENERATION INTEGRATED CONTROL SYSTEM

CNMSX-PRO is the flagship product in Crestron's new generation of control systems. CNMSX-PRO is fully expandable and offers front panel diagnostics and monitoring. The system features 8 x IR/Serial Ports, 6 x RS-232/422/485 communication ports, 8 x isolated relays, 8 x Digital/Analog I/Os, 2 x Cresnet Ports, 2 x Computer ports for programming. It also features exclusive DPA Port for Ethernet/LAN expansion of the control network.



SMART PRESENTER COMPACT WIRELESS RF A/V CONTROL SYSTEM

The **NEW Smart Presenter** is a complete, professional, compact control system that integrates computer and A/V presentation technology with the touch of a button. It's easy to set up and requires no PC programming of software. Just imagine, convenient fingertip control of your PC keyboard and mouse, projector, VCR, slide projector and more! Perfect for presentation rooms, hire, and presentations on the go!



Melbourne Office: 199 Heidelberg Road, Northcote, VIC 3070

Tel: (03) 9488 1555 Fax: (03) 9488 1550

Email: crestron@soundcorp.com.au

RING SOUNDCORP FOR DETAILS OF YOUR NEAREST CRESTRON DEALER

Write in Reader Service Number: 165

DigiTech STUDIO

GET THE JOB DONE...

...EFFICIENTLY AND QUIETLY



S100

- Dual Engine Processor • 26 Effects Available
- Stereo Inputs and Outputs • MIDI Selectable Programs • 20-bit A/D D/A Conversion • 96dB Signal to Noise Ratio



S200

- Dual Engine Effects Processor • Stereo Inputs and Outputs • Full Graphics Display • 5 Effects Configurations • MIDI Controllable • Footswitch Compatible • Noise Gate and EQ • 20-bit A/D and D/A Conversion • 96dB Signal to Noise Ratio



QUAD 4

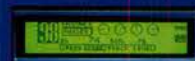
- 4 Signal Processors in 1! • 4 Independent Inputs and Outputs • Easy-to-Use Interface • Multiple I/O Signal Path Routings • S-DISC II® powered • Large Custom Display • Dynamic Parameter Modifiers • Full MIDI Implementation



STUDIO 400

- Balanced 1/4" and XLR Inputs and Outputs
- Dual S-DISC II® Processors • Up to 8 different effects at one time • Unlimited Internal Routing Capability • Large Custom LCD Display • Internal Power Supply • Optional Digital I/O

S-DISC II® is a registered trademark of DIGITECH



Setting up your signal processing shouldn't get in the way of making music. The DigiTech Studio Series was designed to help you get the job at hand done efficiently. Our intuitive interfaces and full graphics displays are designed to inspire you, not intimidate you.



Whether you are selecting programs or editing parameters, using any of the Studio Series products is easy. Our one goal is to help you unleash your creativity... Not stand in its way.

...UNLEASH YOUR CREATIVITY

With the advent of digital processing, today's recording musician is more critical than ever about quality signal processing. They are in need of products that give them the ease of use that only Custom Graphics Displays provide, true 24-bit Internal Processing for superior sounding effects, and Signal to Noise specs that exceed even CD standards. With this philosophy in mind, the DigiTech Studio line of products delivers the performance and features the working professional needs. And when you compare what the competition has to offer, we are sure you will agree.

Distributed in Australia by
CMI Professional Products Group
(03) 9315 2244 www.cmi.com.au

Write in Reader Service Number: 197

Giant Screen the flavour at NAB

(from page 11)

That's the easy part.

After the actors are filmed acting out their lines and parts, the finished pieces are assembled in a post-production facility to be edited, clipped together, analyzed and finally, combined to make a movie.

Now, almost every movie has added sophisticated special effects for realism. These effects are, for the most part computer generated on workstations like those made by Silicon Graphics.

They are not added into the movie until the final editing process where an editor has to scan in the film scenes into the computer, overlay the special effects and then convert the entire scene, which is now stored on a computer, to film.

This is wasted step number one.

After a movie is made and is ready to be shown at the theater house, the movie is packed up and shipped (via air courier - i.e. FedEx, DHL, etc.) to the theater the day before the movie is to open at the box office. Then the theater owner loads it on the projector and plays the movie to anyone who comes to watch it.

That's wasted step number two.

Following about 30-50 showings of the movie, the film begins to wear out and gets those streaks,

lines, scratches and dust all over it. In addition, the color begins to fade. When that happens a theater owner calls the studio and asks them to send out another print of the movie. They do so.

That's wasted step number 3.

When the excitement of the movie runs out, the next step is for the studio to release it on VHS or DVD. That requires, in most cases, a master video copy to be made using the master film copy using a massive film to video scanner. Then the master video is taken to a duplication house to make thousands of copies for selling at the local video store. You guessed it, that's wasted step number four!

With the New World of the digital cinema, these four steps could be streamlined and designed to save a considerable amount of money and time.

The way it will soon be done:

Since just about every movie has some level of special effects (which are created on a computer) and we have cameras that are high-resolution enough to duplicate the perceived resolution of film, the future is creation in the digital domain.

First, a movie of the future could be made using a digital camera that

stores each and every shot on a computer.

Believe it or not, we actually have cameras that the resolution is high enough that the average human can't tell the difference between it and film. In fact, they are arguably better. Most have better colorimetry than film cameras.

If we shoot every scene digitally, when we add the special effects, the movie is already on the computer we eliminate the costly, time-consuming step of scanning each frame from film to video.

In fact, in March, George Lucas announced that Star Wars Episode II (due in 2002) would be shot next year in Australia using all digital cameras and production equipment. Again, reducing the costs of making and editing a movie. Here's cost savings number one.

Second, instead of FedEx-ing the film canister containing the movie to a theater, it could easily (in the digital world) be sent via satellite directly to the appropriate movie theaters on opening day. No more costly shipping charges and inefficient delivery services.

In addition, the theater doesn't have to load the movie on the projector at all. It could totally be automated. Here's cost savings

number two.

Next, in the world of the digital movie, there's nothing to wear out. The movie looks just as good playing the 100th time as it did the 1st time. Why?

Well, it would be coming from a large storage hard-drive and simply playing like you open a file on your computer today. No reason to replace the physical master, ever. Here's cost savings number three.

Finally, since the home video market is in a transition from VHS to DVD (it WILL happen), making the original movie digitally cuts down the costs and time to get it out to your local video rental store.

This is because the original digital master can be simply copied directly from the computer to the DVD master disc and then duplicated. It's similar to the process of copying a file on your PC today. Here's cost savings number four.

There's more!

There's some other cool things that makes digital great.

When you see a movie on a theater, it's shown to you on a screen that, proportionally to the height of the screen, is a lot wider than your TV set.

Today, most movies are converted from this wide format to a regular TV format (called 4:3 aspect ratio) and are modified so that



K News

**THE ULTIMATE PRESENTATION
INDUSTRY NEWSLETTER!**

WHAT'S NEW
PRODUCTS
EDITORIALS
REVIEWS

Delivered to your desktop by email
every month! **AND IT'S FREE!**

To register, simply go to
<http://www.knews.net>

www.knews.net



when you watch them on video, you either miss the information on the extreme left and right of the screen, or you watch it letterboxed (with black bars - one at the top and one at the bottom) so you can see everything you saw at the theater.

However, most people don't like the size of the image on the average TV when it is letterboxed.

Now, however, you can solve that problem in the digital production domain.

In Disney's *A Bug's Life*, the DVD transfer of the movie is NOT letterboxed and doesn't lose any of the stuff on the right or left of the screen (from the original theatrical version).

What Disney did was have the editors go back and move animated bugs in the shot so that whenever there was action of the extreme sides, it was moved to the front middle.

This means that the action actually looks different than it did in the original film, but you don't miss anything. Where a bug used to fly from the extreme right, across the middle of the screen and then to the extreme left, the bug, on the DVD version, actually starts at the front and flies to the back of the screen and around a couple of times in from of the action on the screen. Cool, huh?

Another great feature of the day we go digital in a movie theater is the projector itself. Today we actually have projectors that are much brighter than movie projectors, provide a higher contrast ratio and are easier to use. So, simplicity and performance (along with the big price/cost advantages as outlined above).

At NAB, in fact, Barco introduced a 10,000 ANSI lumens DLP projector (due to ship in September), Electrohome introduced an 8,000 ANSI lumens DLP and Hughes/JVC showed the entire movie *Shakespeare in Love* on their 12K projector (top).

Everyone was impressed with everything.

In fact, I was standing in the Barco booth when a number of stu-

dio executives from Universal, Miramax (owned by Disney) and LucasFilm walked in there. Most of them stayed for hours.

What's the catch?

Well, cost is the first issue. Yes, it will save money in the long run, but it will cost an enormous amount in the short-run.

The digital cinema boxes of today cost two to three times the cost of many film projectors. And, in many cases, the film projectors are performing 'just fine' as one theater owner remarked when I asked him as he was admiring the Digital Projection DLPs at NAB.

In my opinion the studios themselves will need to help burden the cost of that upgrade as much of the cost advantage will be realized by the studio well before the theater owner sees it.

And what about the studios themselves?

No studio wants to do this if the movie can be 'pirated' off air by anyone.

Yes, it may save money to broadcast over the air and through a satellite delivery system, but if someone can intercept that feed and copy a first-run movie, then all bets are off.

So, a top secret encryption method must be developed and approved - - - and that will take time.

• Gary Kaye publishes a free e-mail newsletter about the Pro AV industry called *Knews*! You can subscribe to *Knews*! at www.kaye.com or www.knews.net. Contact Gary direct'y via e-mail at gakaye@kaye.com.



AZDEN WIRELESS

UNCOMPROMISING QUALITY,
ROCK-STEADY RF, FOR EVERY
BUDGET, FOR EVERY APPLICATION.

UHF 63 CHANNEL

All are true diversity, frequency agile,
crystal-controlled and PLL synthesised

\$995 RRP
Inc. Sales Tax



412UDR Full single space rack-mount receiver with antenna-mounting on front and rear. Has 1/4" and XLR output connectors.

\$850 RRP
Inc. Sales Tax



411UDR Stand-alone receiver with 1/4" and XLR output jacks and volume adjustment. Rack-mountable with 321RK.

\$1995 RRP
Inc. Sales Tax



422UDR Dual-channel single space rack-mount unit with cascading antenna function (eliminates the need for antenna DA), and external squelch adjustment. AC powered.

\$495 RRP
Inc. Sales Tax

41HT Featuring Azden's new high-quality supercardioid uni-directional element, it uses 2 AA batteries.



\$395 RRP
Inc. Sales Tax

41IT Instrument transmitter with 1/4" cable for guitars and basses.



41BT All new bodypack transmitter/mini XLR standby switch, and metal belt-clip. Available with choice of microphone elements or headsets.

\$395 RRP
Inc. Sales Tax
EX-503H
Lavalier
\$120 RRP



AZDEN

Distributed in Australia by CMC Music,
Ph: (02) 9905 2511, Fax: (02) 9905 0189

Write in Reader Service Number: 149

DO YOU HIRE ... ANYTHING?

Hire & Production Directory

Appearing in August 1999 issue

Basic Listings are FREE!
CALL NICOLE NOW
1800 635 514 for more info or to advertise

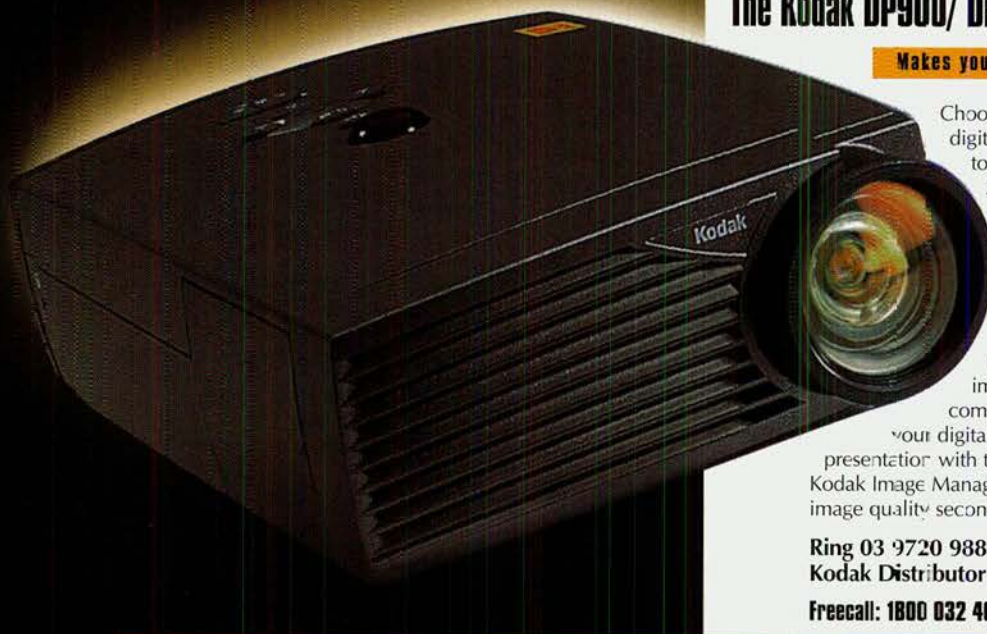
Miss out and miss putting your name in front of tens of thousands of readers!

Lite and Bright



The Kodak DP900/ DP1100 Digital Projectors.

Makes you and your presentation shine.



Choose the lightweight, portable digital projector specifically designed to project your digital image. At just 3.4kg your Kodak Digital Projector goes with you wherever you and your laptop go - across the city, across the country, across the world. The DP900/DP1100 are small projectors with big-projector features - you get great video quality plus crisp, saturated images and colour from your computer. Use full colour images from your digital camera or scanner in your presentation with the knowledge that the exclusive Kodak Image Manager will allow you to present image quality second to none.

Ring 03 9720 9888 for the name of your nearest Kodak Distributor or for more information.

Freecall: 1800 032 408 Fax: (03) 9720 9944

KEY BENEFITS: • Light • Bright • Quality Digital Images • 1.3 x Manual Zoom • Kodak Colour Management • Powerful, Interactive Remote Control/Remote Mouse • Super Sound • Interactive Menu System • Includes Soft Carry Case

For more information on Pictures in Presentations go to the Kodak Web Site <http://www.kodak.com/US/eri/digital/dt/le/book1/chapter7/index.html>

Write in Reader Service Number: 188

beyerdynamic

MICROPHONE CONFERENCE SYSTEMS

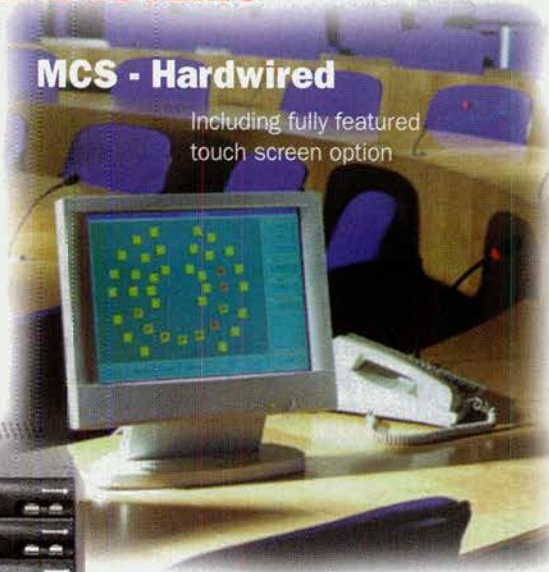
MCW Wireless System

- Unlimited number of usable microphone units
- UHF operation - 798-833 MHz
- Intelligent control unit
- 8 hours talk time
- 100 hours standby
- Flight case, recharging and transport unit



MCS - Hardwired

Including fully featured touch screen option



MCS
MICROPHONE CONFERENCE SYSTEM

SYNCROTECH Systems Design Pty Ltd

Ph: (02) 9879 0800 Web: www.ssd.com.au

Write in Reader Service Number: 181

AMS/NEVE

Beyerdynamic

KRK Systems

Calrec

D & R Consoles

DoReMi

Motionworks

Netia

Spruce DVD

GADGETS

places. Also, these lamps are considerably more robust than their linear fluorescent cousins.



was roughly half as bright.

The ability to slot these into standard bayonet sockets makes this a very useful addition to the lighting designer's tool kit.

- Jaycar Electronics - outlets in all Aust. capital cities and Auckland
- Compact Black Light Fluoro (Cat. No: SL-2762) - \$19.95

Microphone Cables for Video Cameras

Those of you that use handycams and other small devices that record audio, it is often difficult to get decent sound quality out of the microphones that come with the items. Then, if you decided that you would like to use your favourite dynamic microphone, you would soon discover all sorts of additional problems matching the impedances, and avoiding the design modifications that some microphone inputs have (like powered sockets).



The lead pictured here is a filtered microphone to mini jack cable that is actually designed to allow the use of standard dynamic microphones or battery/phantom powered microphones with a handycam. There is a small circuit built into the XLR which matches the impedance, and filters out unwanted voltages from the camera.

The cable used is of very high quality and is molded to the 90-degree 3.5mm stereo jack. ASC will happily make or adapt a cable to suit your requirements.

- Audio Sound Centre +61 (0)2 9901 4455
- Filtered Microphone to Mini Jack cable \$61.00

Goldenhawk CD Duplicator

This little piece of software allows for the *exact* duplication of any existing CD to a CDR, regardless of the format (audio, data, mixed, etc). There is plenty of software options for this kind of work, and CD Writers usually come with software that might be able to do a similar job. However, this software is dedicated for this function, and it does it well at a pretty good price.

The demo version is downloadable on the internet and is fully functional - except it only allows the CDR to burn at 1x speed. The software can apparently also control CD Caddies for burning multiple copies. I have not yet used the full version, but at this price I will be buying it shortly!

- Goldenhawk - www.goldenhawk.com
- US \$59 (or US\$39 for students)

Dai-1-Chi's Flexible Microphone Cable

An excellent microphone cable should have a number of properties, some of the most important being:

- Good, flexible outer sheath that is thick and resistant to breakage.
- tightly woven screen for maximum protection from interference
- good length-wise strength, to prevent damage from "pulling"

- well protected inner cores

The Dai-1-Chi "High Quality Shielded Balances Microphone Cable" is an affordable cable that retains enough of the above characteristics to be a good cable. I have made numerous microphones cables from this product in the last few years, and it has certainly stood the test of time with me. My only two complaints about this cable is that it's screening could be a bit more substantial, and the inner core sheaths have a tendency to melt if you are not quick and adept at using your soldering iron. Despite this, the cable has been problem free and, at this price, money well spent.

- WES Components, Sydney +61 (0)2 9797 9866
- 100m roll of Microphone Cable SHW1914 \$99.45

Affordable Talkback Headsets

I have to admit, if it came down to a choice between a Beyer DT109 headset, or any other one I've tried so far, the Beyer would win. They are simply comfortable. You could wear them for an entire day's technical rehearsal, and still they would be comfortable.

Then again, at \$350+ ea, they would want to be comfortable. So, what do you do when you want to buy decent talkback headsets, and not pay more than \$100?

The Gamma Telecommunication headset from Audio Telex is a good option. While they are not as comfortable as the Beyer, they could be worn for long periods without discomfort.

The Microphone is attached via a goose-neck to allow easy positioning, and the ear-pads have a soft vinyl covering similar to the Beyer. The headset comes terminated with 3.5mm mini jacks, so you will need to buy a female 4pin XLR (\$9.80 from WES Components). Terminating this could be tricky as the cable is a bit hard to solder. The construction is plastic and the cable is a little thin for my liking, so you will need to take a little care of these to make them last.

At this price though, you could buy four of these headsets for every Beyer one. (This headset would compliment well the Talkback Substation mentioned in this column last month!) There are cheaper alternatives, but in my "knobs for dollars" scale, cheaper headsets I have looked at are not likely to last too long, and in the long run this would then cost you more.

- Audio Telex - outlets throughout Australia
- Gamma Telecommunication Headset (LH075) \$85.99



From Last Month - More on Safety Chains

You may recall that I mentioned a safety wire for lights etc. last month. With special thanks to "R2" of R&R Straps (yes, he also does the odd job for Cameron Macintosh) here is a cheaper alternative. R&R Straps make load rated, swaged with captive snap clip safety wires. They also make light weight safety chains for accessories like gobo rotators colour scrollers etc that are swaged (with a snap clip) at one end. Its worth checking them out.

- R&R Straps - 0419 862 265
- Commercial Safety Wire \$5.45
- Heavy Duty Safety Wire \$6.60
- Accessory Safety Wire \$4.90

If you know of any devices that are worth mentioning here (or better options to the ones I have listed), please let me know.

Email: mail@conpub.com.au (attention Dr. G)

Mail: Dr G, Connections, PO Box 439, Epping NSW 2121, Aust.

Fax: Attention Dr G, +61 (0)2 9876 5715

The World's Best



Group Technologies (Australasia): 11/41-49 Norcal Rd
Munawading Victoria Australia 3131
Ph: (+61 3) 9872 5000 Fax: (+61 3) 9873 2922



Active speaker systems

The new ART Series from RCF are the world's first truly professional, fully integrated active speaker system.

All systems are bi-amplified and protected by 3 forms of self-sensing technology.

Featuring the highest output power in their class, and backed by the best warranty in the business. They have just arrived in Australia.

So if you demand the best - Demand RCF



UNLIMITED SOUND

Write in Reader Service Number: 135

I'M FREE!

In this constantly changing world not much stays the same for long. That's why we've brought out a new Version 2 of our popular CD ROM. It's still the total resource kit of every piece of information currently available on ARX products - Amplifiers, Signal Processors, Equalizers, the new SPL series of powered Speaker Systems and lots more, all in one convenient, easy to use CD ROM package:

Brochures you can print out and include with presentations for clients,

Specifications on all products,

Technical Files for inside information.

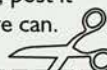
Architectural Specs you can cut and paste into tenders and quotes,

On-line links if you're connected to the Internet,

Application Notes with suggested uses and answers to frequently asked questions,

Photographs in all formats of all products.

And it's **FREE** too! So fill in the form below, and fax it, post it or Email us, and we'll get one out to you as soon as we can.



Instructions:

1. This CD uses a Web browser interface. If you're using Win95/98 and have one installed it should open up automatically. If not, open INDEX.HTM in the ARX folder (choose FILE/OPEN PAGE in your browser and go to your CD ROM drive) When you get to the Welcome screen, click on the ENTER button, and away you go!

ARX CD Content
©1999 ARX Systems
V2.0 010799

Yes - I'd like a **FREE** copy of the ARX CD ROM V2!

Name.....

Address.....

.....

.....Postcode.....

Phone.....

Fax.....

Email?.....

You can fax this to (03) 9555 6747, or post it to:

PO Box 15, Cheltenham, Victoria 3192, or Email us:

info@arx.com.au

Reluctant to chop up your Connections? Don't worry, a photocopy is OK



BASF

ARTIST PRODUCER ENGINEER/PROGRAMMER NOTES

New South Wales

A # Sharp	Jeff Cripps Tel: (02) 9153 9988. 24 Track Analogue		
Hooty Toots	Jeff Cripps	Jeff Cripps	C.D.
Anglican Youth	Jeff Cripps	Jeff Cripps	C.D.
N.Y.K.	Jeff Cripps	Jeff Cripps	C.D.
Menai High School	Jeff Cripps	Jeff Cripps	H.S.C.
Aphek Studio	Greg Dixon (02) 9876 8170 16 Track analogue, 8 track hard disc		
Grouit	Band	Greg Dixon	EP
3rd Wheel	Band	Greg Dixon	EP
Element	Band	Greg Dixon	Demo
Bill & Luke	Artists	Greg Dixon	Demo
Damien Gerard Sound Studios	Marshall Tel: (02) 9660 8776. 2"24 Track or 16 Track Music Studio		
Noogie	Russell/Marshall	Russell	USA Album
Mentals	Greedy/Martin	Russell	Demos/Tracking
Oba Oba	Kelly	Jorden Bach	Vocal Session
Flaming Barstools	Ian Duncan	Russell	Album Mixing
Mr. Blonde	Ken	Jorden Bach	EP Tracking
Enrec Studio	Steve Newton 0418 683 431 Ampex, A-DAT, PC Based Digital		
Krystabell Wylie	S.Newton	S.Newton	Meditation CD
John Williamson	Artist	Steve Newton (E)	Album Mixdown
John Williamson	Robyn Silber	S.Newton/Andrwe Moysan	Audio Tracking/Video
Feral Studio	Jon Robertson (02) 6299 3224 16 Track + Mastering		
Project	Jon Robertson	Jon Robertson (E)	Demos
Mr Fista	Jon Robertson	Jon Robertson (E)	Demos
JD Brothers	Jon Robertson	Jon Robertson (E)	Album
Exhibit A	Jon Robertson	Jon Robertson (E)	Album
Monypeni	Jon Robertson	Jon Robertson (E)	Demo
JMF Recording Studio	Fran Esther (02) 9790 4097 X50, 32 Trk x 850, 24 Trk ADAT		
Cold Turkey	Band	Guy Saminaden (E)	Demo
Greenvalley Choir	Warren Branett	Guy Saminaden (E)	Single
C.O.D.	Band	Tony Jarret (E)	Demo
Miss Cordinated	Band	Mike Ward (E)	Demo
Willows Connections	Trish Watts	Ralph Esther	Demo
Megaphon	Guy Dickerson (02) 9550 6576 Music 24 Track Analogue		
Vicious Hairy Mary	Liberty and Band	Guy Dickerson (E)	Album
Coda & Peter Sculthorpe		Jason Blackwell (E)	Timeline Album
Rumanastone	Tim Whitten	Tim Whitten (E)	Album
Golden Rough		Jason Blackwell (E)	Album
Nu-Town Studios	Greg Hopping (02) 9516 3306 Analogue/Digital Production Environment		
Lisa Hunt	Greg Hopping	Sofie Loizou (PR)	Single
Cheeky	Dean Anderson/Greg Hopping	Sofie Loizou (PR)	Demos
Shielo	Greg Hopping/Kyle Neven	Sofie Loizou (PR)	Single
Paul Nee	Greg Hopping	Sofie Loizou (PR)	Demo
Jim Shirstone	Greg Hopping	Sofie Loizou (PR)	Single
Paradise Studio's	Billy (02) 9357 1599 48 Trk Analogue State of the Art		
The Genes	Nolan	Jason Lea (E)	Album
Kevin Hunt	Artist	Steve Wilson	Jazz Album
The Holy Joes	Wayne Connelley (PR)	Zelo Rezo	Album
Michael Edwards	Artist	Jason Lea (E)	Album
Silverchair	Wayne Connelly	Camerson McCaughy	Concert Recording
Q Recording	Richard Muecke (02) 9212 4851 24 Trk 2" Analogue		
CLM	Phil Rigger	Richard Muecke (E)	Demos
Jimmy Barnes	Mark Opitz/Jon Farris	Mark Opitz (E)	Album
Coda	Nick Wales	Jason Blackwell (E)	Soundtrack
Jacinta	Artist	Warwick Buzzacot	E.P.
Senator	Band/R.M.	Richard Muecke (E)	Demos
Rockinghorse	Anthony or Michael Tel: (02) 6688 4005 24 Trk An./64 Trk Digt & Mastering		
Mindeclay	Band	Zubin Henner (E)	Album Mixing
Mindeclay	Band	Michael Worthington (E)	Album Mastering
Pirol	Christian Pyle	Anthony Lycenko (E)	Album Tracking
Noosphere	Band	Anthony Lycenko (E)	Album Mixing
Stridulation	Rob Walsh	Michael Worthington (E)	Mastering
Skylab	Dave Russell (02) 9310 4774 Analogue/Digital/Hard Disk		
Patricio	Tito Pineda	David Russell (E)	Latin Album
John Hadley	Josh	Josh McLeod	EP
Smoke	Jasper Wilson	Dave Russell	Album
Max	Paul Gomersal	Paul Gomersal	Single
Pat & Raul Sylva	Artist	Dave Russell	Latin Album
Sony Music Studio	Sarah Tel: (02) 9383 6461. Recording, audio and video production		
Slara Prigorgan	Slana/Louise	Louise Taylor	Recording Album
David Teak	Artist	Ross A'hern	Recording Album
Zoom	Simon Tonks	Simon Tonks	Recording Album
Atmosphere	David Jones	Ross A'hern	Overdubs
Storm & Serenity	Band	Louise Taylor	Recording Album

Richard Lush joins Studios 301

Award winning music recording engineer and producer Richard Lush is returning to Studios 301 as Senior Recording Engineer after 9 years with Song Zu.

Richard, a former Producer of The Year, and winner of numerous Golden Reel awards, is best known for his work with the Beatles during the 60s and 70s at EMI's Abbey Road Studios in London.

Richard brings a wealth of experience in music production to the new 301 complex in Alexandria, Sydney, due to open in July. Studios 301 was acquired by Tom Misner's company, SAE Technology College, earlier this year. Richard's studio portfolio includes recordings by The Beatles, The London Symphony Orchestra, Wings, Air Supply, Sherbert, & Jane Rutter.

Velvet Sound Recording Studios have purchased a Massenburg GML 8200 stereo 5 band parametric EQ, an ART tube levelling amp limiter, adding to their rare and vintage out-board collection. They are enjoying a 95% occupancy rate. +61 2 9264-3420.

True Form Recording have recently installed a pair of Dynaudio Acoustics BM15 nearfield monitors, and a new LA Audio Compressor. +61 3 9391-0907.

Rocking Horse have also added new gear, namely ProTools Mix24, and Genelec 5.1 surround monitoring. +61 2 6688-4005.

Back Beach Recording Co have recently installed a Langley Big 44 ch console.

dSP (Digital Studio Processing) have installed their latest system at the Margarita Mix de Santa Monica facility in Los Angeles USA.

The system includes five Poststations, linked in a seamless multi-user environment. With dSP

Team System, Projects can be started in one room and, as necessary, completed later on another machine in another room, with all the operators preferences retained. Each member of the post production team can share all of their latest refinements, instantly with each other. As each engineer saves, all other users hear and see that update instantly. All Poststations were supplied complete with their own furniture and the dSP AudioOS operating system.

STUDIO NEWS

In the Studio



Automatic at Metropolis Audio. Matt Fenton, Alex Jarvis and 'The Kid' Stuart McFarlane (right), with Mat Gearing-Thomas (Engineer, left rear) and Anita Calello (Assistant).

JANDS

INDUSTRY NIGHTS

Jands is offering its expertise to the public with regular **Industry Nights** featuring all the latest **AUDIO, STAGING AND LIGHTING** technologies!

Held the first Tuesday of each month, each Industry Night features a different topic with the emphasis being on providing technical information rather than product sales.

Please call JANDS ELECTRONICS for more information. All interested in honing their technical skills are invited to attend.

Venue: 6.30pm-8.30pm, the first Tuesday of each month. **THE GLOBE, 378 King Street, Newtown, NSW.**

Cost: **FREE!**

(02) 9582 0909

40 Kent Road Mascot NSW 2020 Fax: (02) 9582 0999 www.jands.com.au

RANE

Single & loving it.



MQ302 *mojo filter*

Do you still think two is better than one? Not any more! With the MQ302 Mojo Filter it's never been more fun to be single. Rane is right. A stereo filter set with a single set of controls is accurate, simple, and sonically superior. See your Mojo dealer today and ask about today's attractive single's scene.

JANDS Electronics Pty Ltd ACN 001 187 837
40 Kent Road Mascot NSW 2020 Tel: (02) 9582 0909 Fax: (02) 9582 0999

INTRODUCING THE CAD CM17 ..A CONDENSOR THAT WORKS!



The CAD CM17 Electret Condenser Microphone is the new choice for instrument and overhead applications, both recording and live sound. This exceptional microphone features High Gain/Low Noise Electronics, Extended Frequency Response and Enhanced Transients. But most important - it sounds great! The CM17 has the smooth, transparent sound that CAD have become famous for. It's the microphone that will work for you. All this, at an affordable price of just..

\$349.

CAD CM17

- ★ Unidirectional electret condenser
- ★ Output Impedance: 600 ohms@1kHz
- ★ Frequency Response: 20Hz-20,000Hz
- ★ More than 130dB SPL
- ★ S/N Ratio: More than 50dB
- ★ Phantom or battery power supply



acoustic instruments



acoustic guitar



overheads



Australian Audio
FREECALL 1800 50 20 15
www.ausaudio.com.au

CAD
Professional Microphones
The Revolution Continues



ARTIST PRODUCER ENGINEER/PROGRAMMER NOTES

Soundwarp	Meredith Brooks (02) 9905 7144	Mastering	
Kohlapse	Band	Meredith Brooks	Album
Stray	Michael	Meredith Brooks	Album
Welter	Elliott	Meredith Brooks	Single
Eva Trout	Grant/Band	Meredith Brooks	Demo
Voodoo Monkeys	Michael	Meredith Brooks	Album
Studios 301 Mastering	Jacqui Espie Tel: (02) 9211 7301	CD Mastering Facility	
Kate Cebrano	Lee Rogers	Steve Smart	Best of Album
Automatic	Automatic	Steve Smart	Forthcoming Album
Loki	James Cadsley	Don Bartley	Forthcoming Album
Shogo Hamada	Kimio Mizutani	Don Bartley	Remastering for Epic Japan
Rebecca's Empire	Shane O'Mara	Steve Smart	Forthcoming Album
Antenna	Band	Don Bartley	"All Rise" Single
The Enterprise	David Meyse (02) 9980 8031	32 Track post & mix for music, Logic Audio	
Youth Alive	David Moyse	David Moyse (E,PR)	Album
Robby Bowler	David Moyse	David Moyse (E,PR)	Demo
Hillsongs Australia	Russell Fragar/Darlene Zscheche & Guitarist/David Moyse	Albums (6)	
Pale Riders	Band	David Meyse (E) Mastering Album/Moonsong	
Barry Crocker Jnr	David Meyse	David Meyse (E)/Co Writer	Album PreProduction
The Living Room	Chris Neal (02) 9411 7618	3x Multitrack music for film and TV studios	
Subvision	Chris Neal/Braedy Neal/Braedy Neal/Toby Neal	Sci-fi TV Series	
Tiger Recording	Danielle/Beth (02) 9922 4700	Music, TV, Film Post, Radio	
Human Nature	Paul Begaud	David Hemming	Album
Leah	Paul Begaud	David Hemming	Album
Cherry	Michael Szumowski	David Hemming	Album
Mark Duffy	Michael Szumowski	David Hemming	Album
Trackdown Digital	Simon Leadley (02) 9550 6890	2-64 Tracks/Music & Post Audio	
Flippe Yoram Gross/EMTV	Tim Ryan (E) Damien Candusso (E) Torei Lista (E)	Audio Post	
Maritime Museum	Narrowcasters	Tim Ryan (E)/Torei Lista (E) Dialog Record/Editing	
CLM	Band	Damian Candusso (E)	Album - Tracking
Wiggles		Tim Ryan (E)	Mix for T.V
Dreamtime - Series 6	Keith Salvat	Tim Ryan (E)	Dialog Record/Edit for TV
Turtlerock Mastering	Rick O'Neil (02) 9358 4955	Sonic Solutions and Classic Mastering	
2JJJ Various	ABC 2JJJ Mixup	Rick O'Neil	2 CD Compilation Album
Kevin Hunt	Artist	Rick O'Neil	Album
Fingerprint	Michael Stavoriou	Rick O'Neil	Album
Flat Stanley	Wayne Connelly	Rick O'Neil	E.P.
Snieders Ape	Guy Dickerson	Rick O'Neil	E.P.
Throwdown	Band	Rick O'Neil	Album
Turtlerock Productions	Rick O'Neil (02) 9358 4955	2" 24 Trk 32 Ch. Neve Console	
Silverchair	Wayne Connelly	Wayne	Live Mixes
Knievel	Wayne Connelly	Wayne	Demos
Gemma Glendening	Rick O'Neil	Alex	Album
Velvet Sound Recording Studios	Dave McCunn Tel: (02) 9283 5968	32 Ch 24 Trk 2"	
Indecision (PR)	Charles Fisher	Femi Jiya (E)	Album Tracking

Queensland

Grevillea Studios	Bruce Tel: (07) 3262 8422 Fax: (07) 3862 1422.		
Qwired	Eirn Murphy	Bruce Jacobson (E)	Album
Sallyanne Stansfield	Artist	Matt Bodman	Demo
Spade	Band	Matt Bodman	Demo
Douglas Fir	Douglas Fir	Matt Bodman	Demo
Jeff Usher	Paul Cheeseman	Paul Cheeseman (E)	Album
Vandersound Studios	Eric Vandersande (07) 5546 8100	Digital & Valve 02R CDR HDR	
Ian Francis	Eric Vandersande	Andrew Hines (E) Pre-Production Mix	Album
Daisycutters	Eric/Andrew/Damien	Damien Newell (E)	Overdubs & Editing
Lucid	Eric/Andrew	Andrew Hines (E)	Record/Edit EP
Shakaran	Andrew Hines	Andrew Hines (E)	mix & master Demo
Narcosis	Andrew Hines	Andrew Hines (E)	mix & master Demo

South Australia

Adelaide Tape Distributors	Al Sankauskas (08) 8212 7111	Mastering Facility	
Roj & the Jam Jets	Roger Cufone	Al Sankauskas (E)	CD Release
Daleth	Al Sankauskas	Al Sankauskas (E)	CD Release
Ted Kittel	Nev Molloy	Al Sankauskas (E)	CD Release
Sounds Big '99	Grant Sheridan	Al Sankauskas (E)	CD Release
Rocket Girl	John Clisby	Al Sankauskas (E)	CD Release
Disk-Edits	Belinda Kent (08) 8340 1377	Audio Pre-Mastering, CD & Cassette Manuf.	
Revolvar	Band/S.Fieldhouse/B.Soby	Neville Clark	Mastering CD
Hilltop Hoods	Band/Pulling Strings Prod	Neville Clark	Mastering CD
Kenny's Window	Band/T.Grace	Neville Clark	Mastering CD
Krystapinsch	Band/M.Wordley/J.Palmer	Neville Clark	Mastering CD
Sprawl	Band/Angelo Mala	Neville Clark	Mastering CD
Avon	Band/Dave Lokan	Neville Clark	Mastering CD
Mixmasters Productions	Mick Wordley Tel: (08) 8278 8506	24 Track 2"	
Peter Combe	Artist	Mick Wordley	Album

Anemolie	Mick Wordley	Mick Wordley	Album
Jim Hermal	Phil Kinene	Mick Wordley	Album
"the fridge"	Nigel Sweeting (08) 8231 3588	Digital Non-Linear Full Automation	
Snap to Zero	Band	Nigel Sweeting (E)	Album
Humphrey Espanol	Peter Douglas	Nigel Sweeting (E)	Spanish Episodes
2B	Band/Nigel	Nigel Sweeting (E)	Demo
Mud Men	Tony Nirta	Nigel Sweeting (E)	Mastering
Innerchi	Band/Nigel	Nigel Sweeting (E)	CD

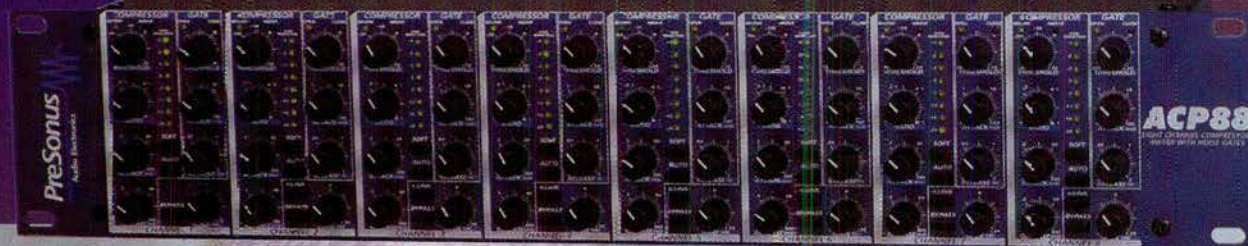
Victoria

Advocate Productions	Adrian Lee (03) 9790 5107	Melbourne's most affordable pro. studio	
Phadiah Torelle	Dave Palmer	Adrian Lee (E)	'Evidence' Album
In not of	Adrian Lee	Adrian Lee (E)	'Rapture' Album
Bubble Deck	Adrian Lee	Adrian Lee (E)	Demo
Dex Mastering	Adam Dempsey Tel: (03) 9372 2266	High End CD Mastering and Letterstick	
CAAMA Music		Ben Hurt (E)	Album
Debris	Band	Adam Dempsey (E)	7 Track EP
Sophie Raymond	Artist	Adam Dempsey (E)	EP
Disney Records		Adam Dempsey (E)	"Tarzan" Remastering
Intense Hammerage	Band	Adam Dempsey (E)	Album
Edensound Mastering	Martin or Robbie (03) 9682 9066	Professional CD Mastering	
Deep Purple	Darren Schnieder	Martin Pullan/Live in August 99, CD & Video	
Adam Harvey	Joe Camilleri	Martin Pullan	Single Master
Fragile	Costa/Band	Robbie Adams	"Trigger Hippy" Single
Renee Geyer/Joe Camilleri/Paul Kelly/Pound System	Martin Pullan		Remix Single Master
Creature Speed	Band	Martin Pullan	Single Master
Natasha from Mars	Kevin Kerr/Band	Robbie Adams	"Mirror" EP
Metropolis Audio	Toni Wright (03) 9696 2111		
Automatic	Band/Mat Gearing-Thomas	Mat Gearing-Thomas (E)	Album
Deep Purple	Darren Schnieder	Mat Gearing-Thomas (E)	Album
Music Lab, Elwood, Vic	Dean Horler (03) 9531 6627	32 Trk Music Production	
Ruby fruit jungle	Jeremy Allom	Jeremy Allom (E)	Album
A cat called monty	David Jennings	Dean Horler	Album
Jeff Warner	Artist	Dean Horler	Album
Jimi Hocking	Artist	Dean Horler	Album
Debris	Andy Taylor	Andy Taylor	Album
Petrophonic Productions	Petros Georgiades (03) 9553 0176	Digital Studio/MIDI Suite	
Client Direct	Jeff Richardson	Petros (E PR)	Market Tapes
Colin Marshall	Petros	Petros (E PR)	Solo CD
Joan Corfee	Petros	Petros (E PR)	Meditation Tapes
Yollette Stuart	Petros	Petros (E PR)	Solo CD
Hey Sister	Petros	Petros (E PR)	Solo CD
Sing Sing Phil or Kaj	(03) 9428 4622		
Jebediah	Mark Trombino	Mark Trombino	Album Record/Mix
Kim Salmon	Band	Andy Baldwin	Album Tracking
28 Days	Kalju Tonuma	Kalju	EP
Deadstar	Kalju Tonuma	Kalju	Album
Automatic	McGoo	McGoo	Album
Studio 52	Paul Higgins Tel: (03) 9417 7707	32 Track & 24 Trk Automated ADAT XT	
Delta	Trevor Carter	Trevor Carter	Major Production Demos
Jacquee Rae	Trevor Carter	Trevor Carter	Major Production Demos
Botzwah	Band	Andrew Meakes/Trevor Carter	Album
The Music Men	Trevor Carter	Trevor Carter	Kangaroos Album
Supremacy	Trevor Carter	Trevor Carter	Album Tracking
True Form Music Services	Neil Gray Tel: 0500 509 509	24 Track Digital, 12 Track Analogue	
Scotty	Scott/Neil	Neil Gray (E)	Demos
Bleeding Rose	Vincent/Neil	Neil Gray (E)	Album
Klinger	Band/Neil	Neil Gray (E)	Mix EP
Hinge	Band/Ross	Ross O'Driscoll (E)	Mix EP
Wombat Rd. Recording Studio	Barrie Clissold Tel: (03) 5145 4204	32 Digital & 16 Anal.	
The Molly McGuires	Band/Barrie Clissold	Barrie Clissold (E)	Album Tracking
Jenny Owen	Barrie Clissold	Barrie Clissold (E)	Album Tracking
Gary Berriman	Artist	Barrie Clissold (E)	Album Tracking
Archapeligo	John Cribbes	Barrie Clissold (E)	Live CD Recording
John Couzen	J. Couzens	Barrie Clissold (E)	CD Mastering
XTEK Studios	Nic Moore (03) 9646 8833	24 Trk Analogue	
Alltomic	Band/Nic	Nic Moore (E)	Demos
Everstone	Band/Nic Moore	Nic Moore (E)	Album
Jed Starr	Artist	Nic Moore (E)	Album/Demos
Rob Howson	Rob/Nic	Nic Moore (E)	Album
Americo	Nic Moore	Nic Moore (E)	Demos
Western Australia			
Bonsai Recording Studio	Tom Thorpe Tel: (08) 9246 4408	Pro Tools Digital	
Bill Gilbertson	Tom Thorpe	Tom Thorpe (E)	Album
The 2-ins	Tom Thorpe	Tom Thorpe (E/PR)	Demo
Blue Thing	Tom Thorpe	Tom Thorpe (E)	Album
Cactus	Tom Thorpe	Tom Thorpe (E)	Album
Nick Rockett	Tom Thorpe	Tom Thorpe (E)	Demo
Pinnacle Recording Studio	Anthony B. Kitson (08) 9382 1528	24 Track 2" Analog, H/D	
Salem	Anthony B. Kitson	Anthony B. Kitson (E)	Mini EP
Plague	Anthony B. Kitson/Band	Anthony B. Kitson (E)	Compilations Tracks
Collision Boy	Anthony B. Kitson/Band	Anthony B. Kitson (E)	Demos, PreProduction
Figjam	Band	Anthony B. Kitson (E)	EP
Choke	Anthony B. Kitson	Anthony B. Kitson (E)	Mini Album Mastering

new!
ACP88

PRESONUS ACP88 EIGHT CHANNEL COMPRESSOR/GATE

The most powerful dynamics processor in two rack spaces



• Eight separate compressor/gate... Each compressor features control of threshold, ratio (1:1-20:1), attack, release, hard/soft knee, auto/manual attack & release curves, and gain. Each gate features threshold, attack and release and switchable gate range.

• Servo balanced or unbalanced inputs & floating balanced or unbalanced outputs.

• Side chain jack for spectral compression and a separate sidechain jack for gate processing on every channel.

• Each channel boasts full gain reduction metering, compression threshold indication & gate open/close.

• Front panel buttons include hard/soft knee compression, auto for automatic attack/release, bypass, link and 2 position range for gate attenuation. The link feature uses a unique summing bus that provides multiple combinations of master/slave link setups. Link all 8 channels to one master, set up two 4 channel pairs, or four 2 channel pairs.

The ACP88 is the next generation of eight channel processing technology from PreSonus. Stemming from the popular ACP8 technology, the ACP88 was redesigned by real PreSonus ACP8 users from around the world! PreSonus incorporated your suggestions for better performance. (\$2495 RRP)

- Increased dynamic range gives more control over compressor threshold, attack and release parameters
- A completely redesigned noise gate gives variable attack (21ms to 100ms), variable release, wide dynamic range threshold and 2 position range attenuation for gate (-60dB/20dB)

New Features

- Individual side chain inserts for both compressor and gate
- Tougher roadworthy construction with a new transformer, bigger power supply and an internal, ultra low noise cooling fan.

PreSonus
Audio Electronics

Australian Audio
Specialist in Professional Audio

For more detailed information, contact:
AUSTRALIAN AUDIO SUPPLIES • Tel (02) 4388 4666 • FREECALL 1800 50 20 15
Website: www.ausaudio.com.au • Email: sales@ausaudio.com.au

Write in Reader Service Number: 170



Hafler®



**GREATER
UNION
ENTERTAINMENT
TECHNOLOGY**

Distributed in Australia by:
GUET SVL DISTRIBUTION

87 Mars Road, Lane Cove, NSW, 2066
Phone: (02) 9420-4888 Fax: (02) 9420 3436
Email: billy_mawer@guet.com.au


BASF
ARTIST PRODUCER ENGINEER/PROGRAMMER NOTES
Planet Sound Studio's Kevin Peak & John Villani (08) 9382 2211

Rebecca	Kevin Peek	John Villani	Album
Vanessa	Kevin Peek	Les Williams	E.P.
Gill Duffy	Kevin Peek	John Villani	E.P.
Jeff Brownrigg	J.B./J.V.	John Villani	Album Mix
The Princess	Mike Searle	Les Williams	Documentary

Poons Head Rob/Sam/Bush Tel: (08) 9339 4791, Fax: (08) 9339 4791. 32 + Track

Seahorse Radio	Rob Grant	Rob Grant (E)	Album
Auto Cat	Rob Grant	Rob Grant (E)	Album
Halogen	Rob Grant	Rob Grant (E)	Album
Dr Twang	Rob Grant	Rob Grant (E)	Album
Klipspringer	Rob Grant	Rob Grant (E)	Album

Revolver Sound Studio Vic Manfrin 32 Track Automated Analog and Digital

Crawlspice	Band/Ben Glatzer	Ben Glatzer	Album Tracking
Hot Rod Sinners	Band/Ben Glatzer	Ben Glatzer	EP Track/Mix
Jessica McAvoy	Artist/Ben Glatzer	Ben Glatzer	Album Tracking/Mix
Turnstyle	Band/Laurie Sinagra	Laurie Sinagra	Album Tracking
Lovecamp 7	Band	Vic Manfrin	Album Tracking/Mix

Satellite Recording Studio Darren Halifax Tel: (08) 9470 4003. ProTools

Mud cake	Darren Halifax	Darren Halifax	E.P.
Billie Reid	Darren Halifax	James Hewgil	Album
Mike Cartwright	Mike	Darren Halifax	Demo
Zydecats	Band	James Hewgil	Album
Crowbar	Band	Darren Halifax	E.P.

The Sonic Lab Mark Whitehouse (08) 9375 3902 Sonic Solutions, Mastering Facility

Stonepace	Band/Ben Glatzer	Mark Whitehouse	Mastering for CD EP
Solid State	Band/Ben Glatzer	Mark Whitehouse	Mastering EP
Dave Hole	Artist/John Villani	Mark Whitehouse	CD Mastering

The Hedonists
"Mrs Mac's"

Steve Colletti/Ben Glatzer
Kevin Price

Mark Whitehouse
Mark Whitehouse

Mastering
'99 Ad Campaign

Northern Territory

Masters Studio & Production Lindsay Masters Tel: (08) 8932 1754. 8 Track Dig & VST edit
Dan Dockery Lindsay Masters Lindsay Masters (E) Demo
Debbie Saville Lindsay Masters Lindsay Masters (E) Demo

YOUR BASF TRADE SALE OUTLETS:

NSW: Audio Visual Designs (02) 9281-2444
Silver & Ballard (02) 9439-5355
Independent Tape Services (02) 9436-0666

VIC: CATS (03) 9529-3177
Chapple Tape (03) 9580-6620
DEX Audio (03) 9372-2266
MTA & Assoc. (03) 9819-6455

SA: Adelaide Tape Duplicators (08) 8212-7111
Pro Media (08) 8276-6793

WA: Ausmag (08) 9314-1953
Pro Copy (08) 9375-3902

QLD: Musiclab (07) 3252-2188
Tek (07) 3239-4000

List your facility. Send info in the above format no later than the 15th of April to:
Fax +61 2 9876-5715 or nic@conpub.com.au


BASF YOUR MUSIC IS
SAFE WITH US

POWER Link

Serious Connectors For Serious Power Systems



PowerLink single pole power connectors offer the ultimate in safety and reliability even under the most extreme conditions. All variants are available - line drain & source, panel drain & source - for maximum versatility and the multiple safety features make it impossible for systems to be incorrectly connected.

PowerLink connectors are part of the new range of Link connectors for power and lighting applications. Call us now for an information pack.

trc

The Resource Corporation Pty Ltd
tel: (03) 9877 8233
fax: (03) 9877 8244
email: sales@trc.com.au

Write in Reader Service Number: 131

RECORDING WITH P R O T O O L S

SHORT COURSE OVER 3 WEEKENDS

10&11, 17&18 & 24 July 1999

Come to our PowerMac Computer Lab and get 5 full days of hands-on-training on the industry-standard software system for professional audio production

No prior experience needed

All equipment and materials supplied

Course cost \$1300

Numbers are strictly limited so call Lesley now to secure your place


the University of Sydney

Graduate Audio Program

For details contact Lesley Vanderkwast on
Phone: 02 9351 2686 Fax: 02 9351 5665
email: lesley@arch.usyd.edu.au

Born in East L.A. Time for a Cheech and Chong revival?

Just about every 70's star seems to have had a 90's renaissance. In the record companies' endless search for meaningful income from product they already own, anyone who had even a minor hit (and was under an iron clad contract before artists had lawyers too) has been recycled as a leading icon of the era.

But one duo seems to have slipped through the net.

Where's the revival of those two dope-smoking funsters, those princes of pot, those lords of the controlled substance Cheech and Chong? No one under 30 seems to know any of their stuff, given the results of a straw poll around the factory the other day. Yet a quick play of some of their classic tracks had everyone laughing so much we couldn't get any work done.

Looming large over the early 70's funscape, they were without a doubt the early kings of alternative comedy. Their albums *Hard Rock Comedy*, *Big Bambu*, *The Wedding Album* and others gems of poor taste were mainstays of office coffee machine humour, much as *Monty Python* segments would be and still are. In the 80's they re-surfaced momentarily with a musical single 'Born in East L.A.', a parody of Springsteen's *Born in the USA*. And then they were gone.

Cheech Marin is pursuing a career as a 'serious' actor, and appeared as Don 'sniff' Johnson's

partner in *Nash Bridges*, a rehash (no pun intended) of *Miami Vice*, but Thomas Chong seems to have disappeared from sight. A victim of over zealous research into new material, perhaps? If any C & C fans out there know the answer I'd be intrigued to find out.

I brought back a bunch of their *Big Bambu* albums from the States in 1975, because the cover was much more intricate and detailed than the locally released version, and came with some giant rolling papers. A bit of harmless fun, I thought. But our local Customs officers were more than familiar with Cheech and Chong's material, and so I was subjected to an exceedingly personal body search, which although revealing I had swallowed nothing worse than airline food, nevertheless still gives me a bit of a twinge every time I look at the album cover.

The only hope today's generation has of re-discovering early classics is when they are used as music in TV commercials. Little Red Rooster for the *Ded Rooster* chicken chain, is just one example. My daughter thinks that *Woolly Bully* is the theme for a jeans ad, and was stunned when I played the original 1965 single at home. (As well as asking "is that a big black CD?").

So what the boys need is for some advertising guru (are you out there Siimon, Julian, Tarquinn?) to use one of their classic sketches as a TV commercial. Something like this perhaps:

"Knock knock knock"

"Who is it?"

"It's me Dave man; open up I got the Tim Tams"

"Dave's not here..." and so on

Doesn't have to be Tim Tams - any other highly addictive snack will do. Maybe CC's - a good initials tie in, or how about KFC. Just what exactly are those 14 secret herbs and spices?

All I know is they've got me hooked. Just call me 'Kentucky' Fry!

Cheech and Chong toured here at the height of their success, and with a bunch of like minded friends I went to see them at that bastion of conservatism, Melbourne's Masonic Hall. Quite what the Freemasons thought of two guys who finished up their stage act on their hands and knees pretending to be two dogs sniffing each others toilet area is hard to say.

A bit too close to masonic ritual to make a fuss about, perhaps.

Anyway, it was in the era before smoking became the hanging offence it is now, and needless to say the whole auditorium was awash with smoke, and not just Winfields but some of Nimbin's finest export.

Needless to say I can't remember too much about the actual performance, but we all seemed to be giggling our heads off all the way home.

And we were just *dying* for a pizza! •

NEW

HIGH POWERED

PROFESSIONAL STEREO AMPLIFIER



- Heavy Duty Bi-Polar Amplifier
- XLR Balanced Line Inputs
- 6.5mm Jack Inputs
- Dual Power Supply
- Front to Rear Cooling
 - 3 Rack High
 - Weight 24kg
- Peak Limiting
- Clip Limiting
- Toroidal Power Transformer
- Speakon & Binding Post Speaker Inputs

PSR 2000

**750W PER CHANNEL AT 4 OHMS,
2000W BRIDGED MONO AT 4 OHMS**

RRP \$2000

PSR 3200

**1200W PER CHANNEL AT 4 OHMS,
2800W BRIDGED MONO AT 4 OHMS**

RRP \$2500

InterM

Magna Systems & Engineering A trading division of Silklure P/L ACN 004 004 997

Unit 2, 28 Smith St, Chatswood, NSW 2067 Phone: (02) 9417 1111 Fax: (02) 9417 2394

Write in Reader Service Number: 143

LIVE MIXING CONSOLES

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

UNDER \$5000

ALESIS

Electric Factory (03) 9480 5988

Studio 24 16 channel Mixing console w/ inline monitor. Inline design for simultaneous monitoring of i/ps & taped tracks; Great-sounding low noise mic preamps...60dB gain; 8 XLR mic i/ps, 1/4" line i/ps & inserts on every channel; 3-band EQ w/ sweepable mid; 108db dynamic range; 90db signal to noise ratio. \$1899.

Studio 32 Mixing console w/inline monitor. Ultra high quality mic preamps make it an excellent mixer for professional mixing; True rackmount design w/ all connections in back for installation in live sound venues & studio racks; Smooth, logarithmic faders make great sounding fades & level adjustments easy; Built-in phantom pwr to interface w/ condenser mics of all varieties for vocal & instrument recording; Up to 40 i/ps avail during mixdown...The perfect console for working w/ multiple audio sources simultaneously; 108db dynamic range; 90db signal to noise ratio. \$2499.

ALLEN & HEATH

Technical Audio Group (02) 9810 5300

MixWizard 12:2DX 8 mono/2 stereo input desk top or rack mount mixer with Digitech FX, left/right/mono outputs, 6 auxilliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm faders, direct outs, vertical individual PCB construction. \$2895.

MixWizard 16:2DX 16 mono input desk top or rack mount mixer with Digitech FX, left/right/mono outputs, 6 auxilliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm faders, direct outs, vertical individual PCB construction. \$3595.

MixWizard 14:2:2+ 10 mono/2 stereo input desk top or rack mount mixer, 4-subgroup, left/right/mono outputs, 6 auxilliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm

faders, direct outs, individual phantom, tone/pink noise generator. \$3595.

MixWizard 20S 4 mono/8 stereo input desk top or rack mount mixer, 2 stereo outputs, 6 auxilliary sends, 4 band EQ, 100mm faders with fader start, direct outs, individual phantom, vertical individual PCB construction. \$3895.

BEHRINGER

Musiclink (03) 9429 9299

MX3282A 24 channel, 32 input, 8 subgroup live mixer, 3 band EQ (swept mids), 8 aux sends, 4 returns, 24 channel inserts. External 19" 2U power supply. \$3599.

MX2442A 16 channel, 24 input, 4 subgroup live mixer, 3 band EQ (swept mids), 6 aux sends, 2 returns, 16 channel inserts. External 19" 2U power supply. \$2599.

MX2642A 12 channel, 16 input, 4 subgroup rackmount mixer, 3 band EQ (swept mids), 6 sends, 4 returns, 8 inserts. Moveable back panel for easy rack mount access. External PSU. \$1799.

MX2004A 8 channel, 12 input, 2 + 2 live mixer, 3 band EQ (swept mids), 2 sends + returns, 8 inserts. External power supply. \$999.

dB TECHNOLOGIES

CMI (03) 9315 2244

MS-42 4 XLR mic input, 2 x stereo in, 48V phantom power, ext. power supply. \$849.

MS-42D 4 XLR mic input, 2 x stereo in, 48V phantom power, ext. power supply 7 interface DSP with 15 pre-selectable program FX. \$1,269.

MS-82 8 XLR mic. inputs, 2 x stereo inputs, 48V phantom ext. power supply. \$1,269.

MS-82D 8 XLR mic. inputs, 2 x stereo inputs, 48V phantom ext. power supply & interfaced DSP with 15 preselectable program FX. \$1,699.

INTERM

Magna Systems & Engineering (02) 9417 1111

CMX2464 24 channel, 4 channel stereo input, 6 aux sends, group/aux/return all assignable, 3 band EQ, high pass filter, 4 stereo aux returns. \$4000.

LEEM

CMI (03) 9315 2244

CS-1604 16 channel compact 4 bus Multi Function Mic/line Mixer. 8 studio grade mic/line inputs, 3 band EQ on individual channels, 4 stereo or 8 line inputs. Balanced input & output circuits, individually selectable phantom power. Rack mount kit included. \$849.

SM-124K 12 Channel stereo studio-grade mic/line rack mixer. High performance, low noise, channel Pre-fade Listen facility, 3 band active EQ with parametric mid control, balanced XLR & line inputs. \$1,249.

LM-244E 24 Channel Studio-grade mic/line mixer console, 16 channel mic inputs, 4 channel stereo 2-track inputs, channel pre-fade listen facility, 3 band active EQ with parametric mid control, feedback eliminator on monitors, balanced XLR and 1/4" jack inputs. \$1,699.

PRO-104D 10 channel stereo, 400w/ RMS (200w + 200w) into 4 Ohm 6 x 1/4" and XLR mic/line inputs, 4 x line or 2 stereo inputs, dual 7 band master EQ. Individually selectable phantom power, digital multi FX (64 programs), 3 band EQ per channel. \$1,099.

MACKIE DESIGNS

Australian Audio Supplies (02) 4388 4666

Mackie Designs SR32.4 32 channels, 28 ultra low noise, high headroom mic preamps, 2 stereo line inputs, True 4 subgroups with mutes and AFL/PFL Solo, swept mids from 200Hz-12kHz, Low cut filter, 6 Aux sends, 60mm faders, Unity Plus Gain structure, Made in the USA. \$4995.

Mackie Designs SR24.4 24 channels, 20 ultra low noise, high headroom mic preamps, 2 stereo line inputs, True

4 subgroups with mutes and AFL/PFL Solo, swept mids from 200Hz-12kHz, Low cut filter, 6 Aux sends, 60mm faders, Unity Plus Gain structure, Made in the USA. \$3995.

Mackie 1604VLZ-PRO 16 New XDR! ultra low noise, high headroom mic preamps, 4 subgroups, 6 Aux sends, 60mm logarithmic taper faders, 3-Band EQ ith sweepable Mids, Control Room/Phones section, Multi-way physical configuration, balanced inputs and outputs, rackmountable even! \$3195.

Mackie Designs 1402VLZ-PRO 6 New XDR! ultra low noise, high headroom mic preamps, 4 stereo line inputs, 60mm faders on all channels, extensive Control Room/Phones section, 3-Band EQ, 2 Aux sends, 2 Aux stereo returns, balanced inputs and outputs, rackmountable! \$1595.

PEAVEY

Audio Telex Communications (02) 9647 1411

Unity 1002-8RQ 8 channel console mixer with Reference Quality preamps, 3 band EQ, 1 Mon, 1 EFX send, 60mm faders per channel, switchable 48v phantom power. Master L/R bus, Tape-in, Tape Out, Headphone socket. Rack Mount version also available. \$993.

Unity 2002-12RQ 12 channel console mixer with Reference Quality preamps, 3 band EQ, 2 Mon, 2 EFX sends, 60mm faders per channel, switchable 48v phantom power. Master L/R bus, Tape-in, Tape Out, Headphone socket. \$1387.

RQ3014 Reference Quality mixer with 6 low Z inputs and 4 Stereo inputs. Inputs 1 and 2 feature a 3 band EQ with mid-sweep, 3 band EQ on other channels. 3 aux sends, Mute and PFL per channel, Insert points, Single subgroup and L/R bus. Desk or Rack mount. \$1566.

RQ880FX 8 mic channels, and 4 stereo line inputs. 3 band EQ with mid sweep on mic channels. 3 aux sends, 1 EFX send. Built in digital effects, dual 9 band graphic EQ with Feedback Locating LED's. \$2769.

RANE CORPORATION

Jands Electronics (02) 9582 0909

RAN-MLM82 Mic/Line Mixer: 4 Mic/Line Inputs, 4 Mono/Stereo Line Inputs, 2 Mic/Line Level Outputs XLR and 6.5mm Jack Inputs, XLR Outputs. \$1595.

RAN-SRM66 Programmable Splitter/Router/Mixer: 6 Inputs, Split, Route or Mix to 6 Outputs, SR1 Smart Remote Control, Limiters on all outputs, 6 VCA groups to allow for room combining applications. \$3145.

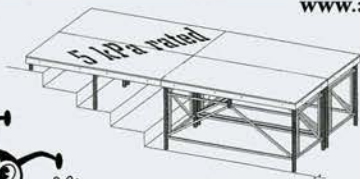
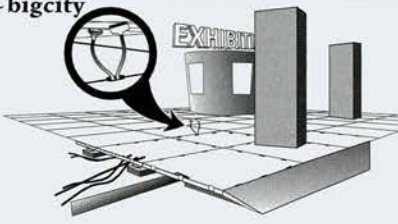
STAGING



BIG CITY
PRODUCTION SERVICES PTY LTD
STAGING SYSTEM

ACCESS FLOOR

www.acay.com.au/~bigcity

Efficient, easy to use systems for theatre, film, exhibitions & schools.

26 Mitchell Road Alexandria NSW 2015 Ph: +61 2 9318 2354 Fax: +61 2 9319 3929

buyers guide:: LIVE MIXING CONSOLES

RAN-SM82 Stereo Mixer: 18 Line Level (9 Stereo) Inputs, L&R and Aux Outputs. \$1895.

SAMSON

Electric Factory (03) 9480 5988

TM300 6-channel desktop 150W per side powered stereo mixer with onboard effects, inline EQ, inserts, dual 7-band master EQ, 65mm faders, Dual 10-segment LED, headphone, Tape I/O, Phantom power and separate Aux sends/returns. \$1199.

TM500 12-channel desktop powered stereo mixer with 256 onboard effect variations including reverbs, delays, gates and modulation effects. 250W per side, inline EQ, inserts, dual 7-band master EQ, 65mm faders, Dual 10-segment LED, headphone, Tape I/O, Phantom power and separate Aux sends/returns. \$1599.

SHURE BROTHERS INC

Jands Electronics (02) 9582 0909

SCM262 5 channel Mixer: 1 x XLR Mic, 1 x XLR Mic and 6.5mm (1/4") TRS Line Jack, 3 x stereo input channels, treble and bass controls and mic/line balanced output. \$895.

SCM268 5 channel Mixer: 4 x XLR Mic inputs with transformers, 5 x RCA Aux inputs, Aux RCA out and mic/line transformer balanced output. \$995.

SCM810 8 Input Mono Automatic Mixer with EQ on all channels, and Shure's Intellimix auto mixer circuitry, allowing automatic gating from any microphone or line source. Full access to all logic functions makes this unit very flexible in many differing applications. Also available in non-automatic model SCM800. \$5120.

SONY

Sony Australia

SRP-V110 10-Mono Mic/Line inputs, 4-Stereo & 4-Sub-Stereo inputs, 8-Ch Tape mix. \$2,990.

SPIRIT

Jands Electronics (02) 9582 0909

Folio Notepad Smallest and most affordable mixer in the Spirit Folio range for Home Studios, Multimedia, Video Post, Location Mixing. DAT quality; impressive EIN and high RF rejection. Four mic and two stereo inputs; Separate Mix and Monitor outputs. \$795.

Folio FX8 Compact utility console featuring 8 Mono mic/line inputs w/ Ultramic preamps, 3 bands swept mid EQ and HPF, 3 Aux with internal Lexicon dual Fx processor, 4 Stereo Returns and 2 subgroups. \$1895.

Folio FX16 Compact utility console featuring 16 Mono mic/line inputs w/ Ultramic preamps, 3 bands swept mid EQ and HPF, 4 Aux with internal Lexicon dual Fx processor, 4 Stereo Returns and 2 subgroups. Connector panel can be rotated to back of mixer for rack mounting. \$3395.

Folio Sx Compact utility console featuring 12 Mono mic / line inputs w/ Ultramic preamps, 3 bands swept mid EQ and HPF, 3 Aux, 4 Stereo Returns and 2 subgroups. \$2495.

YAMAHA

Yamaha Music Australia (03) 9693 5185

MX12/4 8 mono + 2 stereo channels, TRUE 4 buss mixer, 3 band EQ, inserts, 2 aux, stereo aux return, 7 band stereo graphic and built in digital effects, rec outputs & tape returns, meters, XLR balanced inputs & outputs, phantom power. \$1,295.

GF12/12 8 mono + 2 stereo ins/4 group + 6 Aux + ST out. Mono input

channels feature: XLR and 1/4" TRS balanced inputs with switchable phantom power, 26-dB pad switches, 44-dB gain trim, a switchable 80Hz high-pass filter, post-EQ inserts, 3-band EQ with sweepable mid, 6 AUX sends (AUX 3-6 are pre/post-fade), PFL switches, and noise-free linear channel faders. Two stereo returns. Four precision switchable bar-graph meters. AFL on outputs. \$1,795.

Also **GF16/12** \$2,195 and **GF24/12** \$2,995.

01V 16 channel (expandable to 24) 4 buss digital mixer, features 4 band parametric EQ, input delay and comp/lim./expander/gate per channel, 4 Aux sends plus 2 internal effects processors. Inputs include 12 Mic/Line (XLR/TRS), 2 stereo line & tape return + 8 digital input & output option offering ADAT, TDIF, AES/EBU and analog formats. Graphic display, 99 scene memories, motorised faders, dedicated EQ, Pan & FX controls, comprehensive metering, HOST control (PC/MAC) & MIDI remote control & device profiles. \$4,195.

ZECK AUDIO

Horwood Australia (02) 9585 1011

MD 10-14 made in Germany, 14 inputs on 10 channels, 4 x stereo channels, 99 digital FX, standby switch, independent card for each channel, full patch facilities, can rackmount. \$2499.

UNDER \$10,000

ALLEN & HEATH

Technical Audio Group (02) 9810 5300

GL-2200/16 16 input (14 mono/2 stereo) FOH/foldback/dual role mixer, 4 sub groups, left/right/mono outputs, 6 auxilliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm

faders, individual phantom, tone/pink noise generator. \$5395.

GL-2200/24 24 input (22 mono/2 stereo) FOH/foldback/dual role mixer, 4 sub groups, left/right/mono outputs, 6 auxilliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm faders, individual phantom, tone/pink noise generator. \$6995.

GL-2200/32 32 input (30 mono/2 stereo) FOH/foldback/dual role mixer, 4 sub groups, left/right/mono outputs, 6 auxilliary sends, 4 band EQ with 2 mid sweeps, 2 stereo returns, 100mm faders, individual phantom, tone/pink noise generator. \$8695.

GL-3300/16A 16 mono input FOH/foldback/dual role mixer, 8 sub groups, left/right/mono outputs, 8 auxilliary sends, 4 mute groups, 4 band EQ with 2 mid sweeps, 2 stereo returns, 10x2 matrix. \$8995.

PEAVEY

Audio Telex Communications (02) 9647 1411

SRC4026FC 26 channel, 4 subgroup console mixer built into a flight case. Features 22 low Z mic pre-amps, 2 stereo line inputs. Each channel features 4 band EQ, 6 aux sends, Mute/PFL, 60MM fader. Master section includes 4 stereo returns, 4 subgroups, master L/R bus. \$5602.

SRC6024 24 channel, 6 subgroup console mixer. Each channel features 4 band EQ with high and low mid sweep, 6 aux sends, Mute and PFL, 100mm fader. The output sections includes 6 stereo returns with EQ, 6 subgroups, Master L/R and Mono outputs. Features XLR's for all sends and group/master outputs. \$7318.

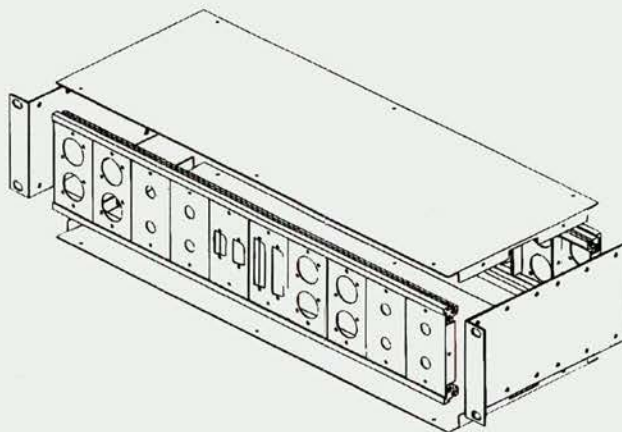
SRC6032 32 channel, 6 subgroup console mixer. Each channel features 4 band EQ with high and low mid

MODULAR STAGE BOXES

Need a custom stage box, rack panel, patch panel or distribution box, but just can't find one?

Then look no further than MSB, the modular system that allows the assembly of the most complex panels in minutes.

Oh, and you can leave the tool box at home as this is the only assembly tool you'll need.



For a free catalogue, please call...

Penn Fabrication Pty Ltd

Ph: (03) 9335 6455

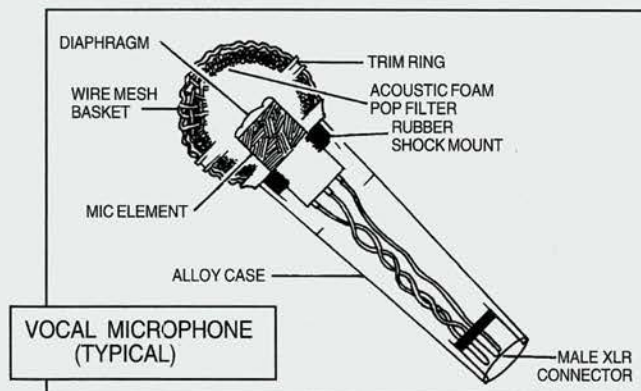
Fax: (03) 9335 6466

How to do it

DUNCAN FRY'S LIVE SOUND MIXING SERIES

MICROPHONES (Part 15)

These days, a good microphone will pick up everything you want to hear. However, at the same time it may pick up everything you don't want to hear! Just about every piece of equipment between the microphones and the amplifiers is dedicated to removing what you don't want to hear and keeping the rest.



Not all microphones do the same job; some are good all-round microphones, some are specialized vocal or instrument microphones.

As soon as you start recommending one microphone over another, you're opening a real can of worms. There are as many ideas on sound as there are bubbles in a can of beer. No two people have the same ears, the way no two people have the same fingerprints, and when you start discussing what microphone for what purpose, then you find that everyone has their own preferences.

Still, we can establish a few ground rules.

- It must have excellent feedback rejection.
- It should only pick up the instrument or voice that it is supposed to, and disregard everything else.
- It must stand up to life on the road.
- It must sound good.

In practical terms, these prerequisites mean that for most purposes, we'll be using Dynamic microphones, needing no batteries or external power, with a 'Cardioid' or 'Super/Hypercardioid' response - meaning the microphone picks up sound from a heart shaped area exactly in front of it, and very little from anywhere else.

Let's have a look at what is happening on stage at a live gig, with the band on stage playing and singing.

1. There is a microphone in front of each singer, each instrument amplifier, and each drum.
2. The monitor system is blaring out across the stage and also up from the wedges.

3. We want to get this monitor sound into the musicians' ears, but we don't want it going into the microphone.

4. Ears are at the most only 5" (100mm) from the mouth, and the mouth is about 1/4" (5mm) from the microphone!

Once you look at it like this, it's amazing that microphones work at all, but they do, and most of them work very well.

Vocal Microphones

You won't get far along the live audio trail without coming across the Shure SM 58. The typical vocal microphone, it looks like an ice-cream cone painted battleship grey. Much copied, it is undoubtedly the industry standard in vocal microphones. Every engineer knows its sound - big bass boost up close (known as proximity effect), a kick up in the HIGH MIDS and excellent feedback rejection.

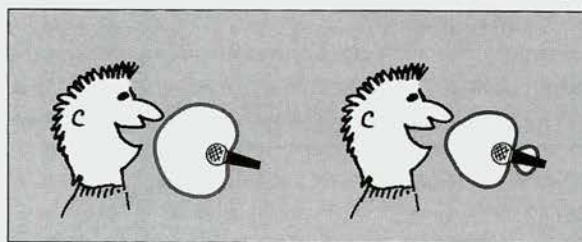
If you are using a different system every night, with little or no soundcheck time, when the singer walks on stage with a 58 in their hand, you know exactly how the vocals will sound, so you can set up the desk EQ accordingly.

However, it's not everyone's cup of tea. For female singers, or those who tend to mumble into the microphone between songs, many engineers prefer a Beyer M 88, another excellent vocal microphone.

Many manufacturers have been working with a new magnetic

THE CARDIOID MICROPHONE PICKS UP MAINLY FROM THE FRONT

THE SUPER/HYPERCARDIOID HAS A TIGHTER FRONT PATTERN BUT ALSO PICKS UP A LITTLE FROM THE REAR OF THE MICROPHONE



AS YOU CAN SEE, NEITHER OF THEM LOOK THAT MUCH LIKE A HEART - MAYBE THOSE DESIGNERS OUGHT TO GET OUT A BIT MORE!

material called Neodymium, a 'rare earth' super efficient magnet. Electro-Voice have their N/ DYM series, and Shure have their Beta series using it. The Beta 58a has a hotter signal, better feedback rejection, and it is just as robust. However it is more expensive, which is probably the main factor stopping it from repeating the worldwide success of the SM 58.

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

buyers guide:: LIVE MIXING CONSOLES

master outputs. \$8712.

RQ1606M 16 channel, 6 subgroup monitor mixer. 3 band EQ with mid sweep on each channel, FLS Feed-back Locating LED on each channel. Features 6 monitors sends plus master L/R outputs and stereo wedge output. \$3162.

SOUNDCRAFT

Jands Electronics (02) 9582 0909

K1 4 buss live production console featuring range mic preamps, 4 band EQ with sweep mids, 6 aux sends, 4 matrix outputs and 4 subgroups. Console can be configured with either stereo or mono inputs (or a combination of both). Available in 8, 16, 24 and 32 channel frame sizes. From \$4995.

SPIRIT

Jands Electronics (02) 9582 0909

Spirit LX7 features include Spirit's Ultramic preamps, 18dB per oct HPF, 4 band EQ with mid sweeps, 6 aux sends and 4 groups. Additionally, direct outputs are available on the first 16 channels (32 ch version) for direct location recording. Available in either 24 or 32 input versions. From \$4595.

Live 3 MKII features include Spirit's Ultramic plus preamps, 18dB per oct HPF, 4 band EQ with mid sweeps, 4 aux sends and a 3 buss output section, allowing left right, and a mono discrete mono output. Available in 8, 12, 16,

and 24 channel sizes. From \$2995.

Live 4 MKII features include Spirit's Ultramic plus preamps, 18dB per oct HPF, 4 band EQ with mid sweeps, 6 aux sends, 4 mute groups, 4 subgroups and 2 matrix outputs. Available in 12, 16, and 24 channel sizes. From \$5495.

YAMAHA

Yamaha Music Australia (03) 9693 5185

GA24/12 24 channel Universal FOH & monitor mixer featuring 12 buss (can be configured as 6 Aux, 4 buss + stereo or 10 Aux + stereo, etc). Mono channels feature: 4 band EQ w/dual mid sweep, HPF, pad, rev, PFL, peak LED, insert & 100 mm faders, stereo chs are identical minus pad & rev switches and basic 4 band EQ. The mix buss master outputs feature 3 band EQ with mid sweep and AFL. Phantom in blocks of 4 ch and channel inputs /main & group outputs are all balanced XLR. \$5,295.

GA32/12 32 channel version of above. \$6,295.

OVER \$10,000

ALLEN & HEATH

Technical Audio Group (02) 9810 5300

GL-3300/24 \$11,995 **GL-3300/32** \$14,995 **GL-3300/40** \$18,995 24, 32 or 40 input (all mono or with 4 or 8

stereo channels) FOH/Foldback/Dual role mixer, 8 sub groups, left/right/mono outputs, 8 auxilliary sends, 4 mute groups, 4 band EQ with 2 sweeps, 100mm faders, 2 stereo returns, 10x2 matrix.

GL-4000/24 \$22,495 **GL-4000/32** \$27,495 **GL-4000/40** \$32,995 **GL4000/48** \$39,495 24, 32, 40 or 48 input (all mono or with 4 or 8 stereo channels) FOH/Foldback/Dual role mixer, 8 sub groups, 10 aux on faders, 4 band full sweep EQ with 'Q' control on mids, 10x4 matrix, 8 mute groups plus 128 Midi scenes, 8 track recording facility.

CREST CONSOLES

Production Audio Services (03) 9415 1585

XFour NEW from Crest, XFour is available in 4 frame sizes up to 32 mono inputs, 4 groups, 6 auxes, LCR panning on mono inputs, 8 x 2 matrix. \$TBA.

XEight available in HS (House/stage) or RT (Recording/theatre) versions. 24/32 or 40 input version. All with 4 stereo modules, true LCR panning, 8 aux, 8 group, 128 scene MIDI mute system meterbridge. From \$28,659.

Vx available in 4 frame sizes up to 52 input modules, mono or stereo, 8 VCA's, 8 auxes, 8 groups, 12 x 8 matrix meterbridge. From \$65,100.

LMx 40 or 52 input monitor console, 22 outputs, 4 band EQ, all sweepable,

meterbridge, outputs configurable mono or stereo for IEM's. From \$106,396.

MACKIE DESIGNS

Australian Audio Supplies (02) 4388 4566

Mackie Designs SR40" 8 Large Format Sound Reinforcement Mixing Console, Centre Master Section, 40 low noise, high headroom 60dB mic preamps with phantom power, built-in meterbridge, 8 subgroups, 4-band EQ with swept Mids, UltraMute! computerised system for snapshot and group muting, 12x4 matrix mixer, 8 Aux sends, 4 stereo main aux return channels, AIR EQ on subgroups, Left, Right and Centre Master Faders, Fader Link for Left and Right master faders, Low Cut Filter, Intercom, Talkback. \$17,995.

RAMSA

Ramsaudio (02) 9477 7377

WR-SX1A 32 channels plus 4 stereo, 10 VCA groups, 10 mute groups, 20 aux/group busses, 128 pattern memory, L/R masters, L/R submasters. \$99,400.

WR-SX1A 40 channels (as above). \$113,300.

continued over

Professional Sound and Lighting

dB Sound

For sales, hire and installation of
Public Address, Lighting and
Audio Visual Equipment.

1999 marks our tenth birthday,
so to celebrate, we're offering special
prices on the Interlink range of
BLACK BOX PROBLEM SOLVERS

ADI/1 mono active DI box	\$ 99.00
ADI/2 stereo active DI box	\$ 149.00
AVDI/1 stereo AV DI box	\$ 199.00
MIX1 Mic/line mixer	\$ 219.00

Offer valid to 30th June, 1999. Prices include 22% Sales Tax

Phone for our 1999 hire pricelist

(02) 9638 0777

7 BRIDGE STREET
RYDALMERE 2116

1 800 638 777

FAX: (02) 9638 0749

AON Risk Services

present

AUSTRALIA LIMITED
ACN 000 434 720

Entertainment Protection Plus

INSURANCE

FOR ALL YOUR ENTERTAINMENT RISKS

- Equipment
- Travel
- Non appearance
- Cancellation or abandonment
- Public liability
- Personal accident
- Vehicles
- Workers' Compensation

Call Ken Killen or Ian Stack
TOLL FREE 1800 806 584
for free quotations & advice

Level 27, AON Tower, 201 Kent Street, SYDNEY, 2000 Tel (02) 9253 7000

Write in Reader Service Number: 100

How to do it

TOM MISNER'S PRACTICAL STUDIO TECHNIQUES

- TAPES AND FORMATS (Part 15)

Tape Sizes and configurations

Tape recorders employ a variety of tape sizes, usually depending on the number of tracks. At the small end of the range is the 4 mm width of the standard audio cassette. At a speed of 4.75 cm/sec, these tapes have a frequency response up to 17 kHz. Higher tape speeds mean a better quality recording but also higher tape costs.

Open-reel tape sizes are conventionally based on imperial (inch) measurements of 1/4 inch, 1/2 inch, 1 inch and 2 inch. The trend in recorder design has been to squeeze more and more tracks onto a given tape width. Many years ago it was common to see 4-track tape recorders using 1 inch tape (as used for The Beatles 'Sgt. Pepper' album). Nowadays it is not uncommon to see 24 tracks on 1 inch tape.

The following are some common analog tape formats:

- 1/4 inch, 1/4 track (domestic standard, bi-directional)
- 1/4 inch, 4 track (multitrack semi-professional)
- 1/4 inch, 1/2 track stereo (track gap 0.75 mm)
- 1/2 inch, 1/2 track (stereo)
- 1/2 inch, 4 track (professional)
- 1/2 inch, 8 track 1/2 inch, 16 track (only with noise reduction)
- 1 inch, 16 track (professional)
- 1 inch, 8 track (older tape machines format)
- 2 inch, 16 track
- 2 inch, 24 track
- 2 inch, 32 track

The above track configurations are only relevant to analog recording. Note that the number of tracks is not determined by the tape, rather, it is the tape recorder's record head that defines the tracks on the tape.

Digital tape recorders have many different tape formats, ranging from 24, 32 or 48 tracks on 1 inch tape, to 8 tracks on S-VHS tape. The different formats are not compatible.

New Technologies

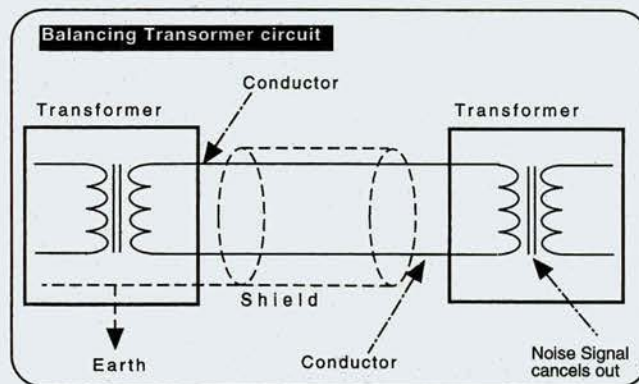
Many new developments are on the audio horizon. Sony has released the MO - Magneto Optical recording disc, suitable for mastering applications. The most visible display of MO technology is the Minidisc which provides 74 minutes of recording time on a 2 1/2" disc or 140 MB of storage. Once the MD software is installed it becomes transparent to the computer operating platform and CPU - it will work with almost all computer standards. For mastering applications the MO disc is able to store up to 80 minutes of 20-bit linear digital audio and 16/24 bit standards are available. The disc rotation speed ranges from 1800 to 3600 rpm and in combination with a new head design gives the engineer very fast access times to program material, averaging around 40 msec.

BALANCED AND UNBALANCED LINES

Balanced lines use two conductors and a shield, while unbalanced lines have one conductor and a shield. The most important advantage of the balanced line system is that it offers very good rejection of external noises caused by radio frequency interference or magnetic induction.

Any noise which enters the balanced line will be picked up by both conductors evenly, and will cancel out. This is a big advantage for microphone signals, which are very small and easily affected by such interference noises.

In an unbalanced system, external noise enters the cable and is transmitted to the next stage. If the cable runs are short and the signal level is high, these noises may not be heard. However, unbalanced lines are not recommended for microphone signals.



RECORDING INFO: Equalising Instruments

When equalizing instruments it is advisable to solo the instrument out from the mix and mute all effects.

Too much equalization can destroy the natural blending of instrument waveforms. Suppose you have a drum kit which sounds good in the studio. You place a microphone next to each of the various drums and you equalize each one to make it sound good on its own. When the individual drum sounds are mixed together it is possible that the natural waveforms will have been changed and the drum kit no longer sounds good as a whole.

PRACTICAL INFO: Distant Recording

Try recording with the microphone placed some 10 - 20 feet away from the instrument, if you want the instrument to sound distant in the mix. You will gain a natural sounding distant instrument. Remember that you cannot bring the instrument "up front in the mix, once it has been recorded in the abovementioned way.

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

buyers guide:: LIVE MIXING CONSOLES

WR-SX1A 48 channels (as above). \$125,490.

SONY

Sony Australia

SRP-V324 24-Mono, 4-Stereo, 8-AUX Sends, 8-Groups, 8-Matrix OP, 100dB CT, 30dB HR. \$24,500.

SOUNDCRAFT

Jands Electronics (02) 9582 0909

K2 Console features include range preamps, 4 band EQ with sweeps and Q switches, 8 aux sends, MIDI scene and mute control, 8 groups and a 8 x 11 matrix as standard. Console can flip its groups and auxes to perform as a monitor consoles. Available in 24, 32 and 40 channel frame sizes. From \$27,995.

SM20 SM20 input modules feature range style preamps, 4 band parametric EQ with variable HPF, 20 sends with capabilities of stereo strapping sends for Ear Monitors. Comprehensive monitoring and metering facilities. Available in 32, 40, 48 and 56 input frame sizes. \$POA.

Series Four is available in four frame sizes providing 24, 32, 40 and 48 mono inputs into 8 group busses, 10 Aux busses and stereo and mono main mix busses. Features: Inputs offer sweep filter and EQ (4 band sweep with fully parametric mids), 8 VCAs and 8 Mute Groups, LCR Panning on inputs-mix and groups-mix, 16x8 Matrix built-in,

Balanced sends & returns throughout; Balanced Direct outs, Console Linking capability, VU output meterbridge fitted as standard, Optional Showtime Automation, giving scene control of VCAs, channel faders and mutes, plus Visual FX remote fx control (Showtime requires external PC), Virtual Dynamics

Series Five Features include A/B inputs on all channels, variable LPF and HPF filters, 4 band fully parametric EQ, 12 Aux send and true LCR panning. Output features include 8 sub groups, 10 VCA groups and a 16 x 10 matrix. Far too many features to mention here. Available in 28, 36, 44, 52 and 60 ch frame sizes. Also available Series 5 monitor, in either 24 or 32 buss versions.

SPIRIT

Jands Electronics (02) 9582 0909

Spirit 8 features include Spirit's Ultramic plus preamps, 18dB per oct HPF, 4 band EQ with mid sweeps, 6 aux sends, 4 mute groups, 4 subgroups, 2 matrix outputs and an integral meter bridge. Available in 16, 24, 32 and 40 channel sizes. From \$10,995.

Spirit Monitor II Available with 24, 32 or 40 Inputs, this console features 4 band swept mid EQ, 12 sends (some with stereo capabilities), variable HPF on outputs, and the ability to utilise the console in a FOH application. Complete

monitoring facilities, with stereo wedge output. From \$14,995.

Digital 328 Fully recallable Digital Console featuring 24 bit signal path, and integral and Dynamics processors and 2 dual Lexicon effects processors. 16 Analogue mic/line inputs (can be expanded to 32), 8 busses, 3 band full parametric EQ, 6 auxes, and 10 stereo inputs with both snapshot and dynamic automation available. Extremely hands-on designs with E-strip, allowing easy usage by anyone familiar with mixing on analogue consoles. \$13,995.

YAMAHA

Yamaha Music Australia (03) 9693 5185

M3000/24 24 channel universal FOH & monitor mixer featuring 18 buss (12 mix + 2 Stereo + main stereo). Busses can be configured as 8 Aux, 8 buss + stereo or 16 Aux + stereo, etc (13 / 14 & 15 / 16 can be stereo sends). Mono channels feature: 4 band of parametric EQ with twin mid switchable Qs, variable Freq. HPF, pad, rev, PFL, input meter, insert, 8 VCA group assign & 100 mm faders, stereo channels are identical minus pad & rev switches and straight 4 band EQ with twin mid switchable Qs. 128 scenes with direct recall plus MIDI control. Includes 2 x PW3000M power supplies. \$27,000.

M3000/40C 40 channel version as above. \$35,000.

PM3500 FOH & monitor versions. 8

Buss + stereo with 12 x 4 x 4 mix matrix. Channels feature 4 band parametric EQ with high & low shelving, 8 Aux. all pre/pst switchable, switchable inserts, meter, pad, PFL, HPF, direct outputs and VCA assign (8 bus), individually switchable phantom power, VCA groups have PFL & mute facilities, talkback, oscillator, 12 switchable meters + stereo, balanced inputs/outputs, 128 scenes with MIDI control. From \$120K.

PM4000 Professional FOH live mixer in 24 to 48 channel versions.

8 Buss + stereo with 11 x 8 mix matrix. Channels feature 4 band parametric EQ with high & low shelving, 8 Aux. + 2 stereo Aux all pre/pst switchable, switchable inserts, input meter, pad, PFL, HPF, direct outputs and VCA group assign (8 bus) + mute group assign (8 bus), individually switchable phantom power, VCA groups have PFL & mute facilities, talkback, oscillator, 12 switchable meters + stereo, balanced inputs/outputs. From \$120K.

next month::

DJ MIXERS & SAMPLERS

email:

cattriona@conpub.com.au

What do you need in a lighting stand?

- height
- compact folding for easy transport
- light weight
- wide range of versatile accessories
- safety locks
- wide base for stability



The KM 24640's got it all! Call now for information about the entire range of KM lighting stands and accessories



K&M - Celebrating 50 years in 1999

The Resource Corporation Pty Ltd

tel: (03) 9877 8233

fax: (03) 9877 8244

email: sales@trc.com.au

Write in Reader Service Number: 132

www.conpub.com.au June 1999

Since 1976

T-PAC

Sound & Light

The Right Equipment

The Right People

The Right Price

Sound & Lighting

Hire, Sales and

Installation

To Any Scale

Ring Around

But Save The Best Number Till Last

(02) 9799 7219

LIVE

PRODUCTION REPORTS

Billy Bragg and The Blokes



Billy Bragg was in Australia recently to perform a series of club dates featuring songs from his new album *Mermaid Avenue*. The album is an unlikely collaboration between Bragg's music and the previously un-released lyrics of American singer-songwriter Woody Guthrie.

Production on the Billy Bragg tour was kept low-key. Being the type of artist that he is, the emphasis of the shows had to be the raw, anti-pop star nature of Bragg's material. To maintain this, the mix was largely un-processed, and the lighting understated.

In Melbourne, Billy Bragg and The Blokes played three sell-out shows at the Forum, which turned out to be an ideal venue for the shows.

Peter Critchley, Lighting Designer



Australian Lighting Designer Peter Critchley said the Forum was a fantastic venue to work in. Peter has been doing lighting for around twenty years and has worked with international bands like Teenage Fanclub and the Violet Femmes.

"I always do Billy's lighting when

he comes to Australia."

While Peter doesn't venture out on too many band tours anymore, he keeps busy working for promoter Ken West and working as National Site Co-ordinator for the annual Big Days Out.

"It's nice to still come out and do a few shows - and I love Teenage Fanclub and I love Billy so I don't mind doing either of those because they're really nice people to deal with."

Peter described lighting for Billy Bragg as "just filling in colour".

"It's not really a light show where I can flash and neither would I want to because it only detracts from Billy as the focus. Even with the band there it's still him that's the focus. So I light around him, I use cyc lights and that helps light the band up quite nicely and I can change the mood with that. It's just a four colour wash: Lee 120 (Deep Blue), 116 (Medium Blue-Green), Amber and Red. And the same with the front wash."

Brent Gray, FOH Tech Big Beat Productions



FULL HOUSE::THEATRE NEWS

● Opening night for the Melbourne season of hit musical *The Boy From Oz* had to be delayed by a week when the star Todd McKenney injured his thigh during rehearsal two days before the big night. McKenney corked his thigh when he hit a table during a dance sequence and within three hours was unable

to walk let alone do the high kicks and other spectacular dance routines the show is known for. Other performances went ahead with understudies Dale Pengelly and Tony Lepage playing the Peter Allen role. Advance sales for the Melbourne season had exceeded \$3 million prior to the scheduled opening, following hugely

successful seasons in Sydney and Brisbane which earned the show \$32 million.

● Another production affected by injury is Ben Elton's *Popcorn* playing at Sydney's Lyric Theatre. Actor Nadine Garner broke her foot during rehearsals, and within 24 hours the show's Stage Manager suffered the same fate.

● Adelaide Festival Director Robyn Archer recently announced the program highlights of the 2003 festival. The program includes a new production by *Netherlands Opera of Writing to Vermeer*. The opera will be directed by British film maker Peter Greenaway and is said to be the biggest and most expensive stage event of the festival.



"I like to have lots of different moods so I don't get bored, and it's nice to just change the lighting even if the colour's the same, just to change the angles. I don't know what people see in lights - it's just colouring and mooding, and hopefully I match the mood for the crowd. Billy and the manager are happy so that's something."

A 50 channel Jands Event Plus is Peter's preferred lighting console because of its sensible layout and operating system. For these shows, Peter programmed 48 scenes to cover all possible set orders, given that Billy likes to change the format of the show each night.

"The set's

not the same every night but there's a standard way he breaks it up by doing a couple of solo songs, then there's where sets with the band, then he does some stuff with keyboard player Ian McLagan from The Small Faces. He always throws songs in to keep us on our toes which is good fun and it keeps it interesting."

Peter's rig consisted of Ray cans, 1k Leko profiles, 1k fresnels, and 800 watt cyc units supplied by Chameleon.

"I'm used to using par cans everywhere else, but here because we're in a theatre we're using lots of theatre lights. It's the same thing, although it's a bit harder to put up four theatre lights rather than a bar of 64s."

Audio for the shows was similarly straightforward. FOH System Tech Brent Gray from Big Beat Productions ran through the FOH setup:

"We're using pretty much all industry standard equipment and models - a Yamaha PM400C, Lexicon PCM80 reverb, SPX 900 and 990s, Behringer Compressor compressors, BSS Opal compressor with De-essers, Drawmer gates DBX 162 Compressors, Klark Teknik EQ and an Omni drive system processor with a screen for a visual display.

"We've found that the Lexicon reverb was the best because it's a very warm reverb, it doesn't sound electronic which really suits the show. And we're using a TC Delay unit for the room. The way the room is we need to use a bit of delay but not much reverb because the room has its own natural reverb."

The speaker system was all Meyer consisting of 6 x MSLS Mid high boxes and 4 x 650 Meyer subs on each side of the stage.

Mixing for Billy was Grant Showbiz who has also mixed a number of Billy's studio albums.

"Because of the style of music it's all pretty raw. Grant's only really using one compressor and a couple of effects, that's it."

Including effects there were 29 inputs from stage. Microphones were all pretty standard SM57s, M33 for kick drum, SM81 condensers as overheads, and SM53s for vocals.

Dave Allpress from Big Beat Productions ran Monitors for the shows.

"I'm using a Yamaha 3200 desk, Phase Linear bi-amps, Klark Teknik graphics, Jands SLP wedges, that's about it. Everything we're using is just standard gear, it's like with the mics - there are no Beta's here, we're using thirty year old technology for musicians who have been around for 30 years!"

• Mandy Jones

Tour Personnel:

Lighting Designer Peter Critchley **Lighting Rigger** (Chameleon)

Graham Walker **FOH Engineer** Grant Showbiz

Monitor Engineer Dave Allpress **FOH System Technician** Brent

Gray **Stage Manager** Kelvin Flanders

The World's First 3D Concert?

Currently on the road with what is reportedly the world's first 3D concert tour are rock giants Kiss, in support of their new studio album Psycho Circus. The technology has been devised by Dallas company Intelecon Digital Studios, the leading developer of Stereoscopic 3D imaging for the corporate, road show and image magnification markets.

According to Kiss' management, Intelecon is the first innovator able to take on such a project. Intelecon's Stereoscopic 3D animation presents images that reach deep into the multiple video screens and virtually jump right out.

"At the premiere, the audience was literally thrown back and amazed by the 3D," said Eddie Vaksar, Executive Producer and co-creator of Intelecon's Stereoscopic 3D. "They literally dodged objects flying out and even tried to grab a few of them. We are excited about taking on this high-profile and challenging project."

American critics have been quick to praise the production's 3D aspects, among them John Bream of the Minneapolis Star Tribune who wrote: "Using previously-shot video footage, Simmons would wag his famous tongue, Criss would twirl his drumsticks and Stanley would toss a guitar pick at the crowd. With 3D effects, it seemed as though you could reach out and touch each of them - even from the nosebleed seats. Other effects were more surreal, including dizzying computer-generated animation of Simmons' head floating, Ace Frehley's guitar travelling through the universe, or warped live shots."

LEGEND!

Stanley R. Miller is one of the great audio innovators of our era.

Read this and learn why!

For some people, working with Neil Diamond can develop into a lifelong career. Take 15 Stanley R. Miller, for instance. He has manned Diamond's front-of-house sound for over 30 years. Monitor Engineer Bernie Becker has been with the star for 14 years, and the Sound Crew Chief Greg Lopez (of Maryland Sound) has racked up a substantial 13 years of service. "We don't like new faces round here!" Miller joked, although with a hint of truth. It's a bit of a surprise that they let the audience in - until, of course, you realise that most of them are old friends who have been coming to Diamond shows for years.

Miller has the same client, he has the same colleagues, and the same punters. He even has the same chair, with which he has toured for the past 25 years. On first appearances, you'd hardly have Stanley Miller down as a pioneering champion of radical change. Yet he has pushed the envelope further than anyone else in the field of live sound mixing when it comes to digital control, and his FOH outfit for the current Neil Diamond international tour is a bit of an eye-opener: three Yamaha digital desks, no outboard, a couple of computer screens - and the chair - set up in a FOH position so small you couldn't park a Ford Fiesta or it.

Now this is not because Mr. Diamond is downsizing his shows. We've got Neil, all sparkly rhinestones and exuding the slick professionalism of the Las Vegas showman, we've got a nine-piece band including two percussionists, we've got a revolving stage, and we've got over 10,000 adoring fans who want to sing every darn word of 'Sweet Caroline'.

No, the minimalist approach to FOH sound is part of Miller's measured progress to an ideal world that has him sitting out front in the stalls with just a laptop computer to mix the show. So just what it is about digital control that gets him going? "In the time that I've been working for Neil, we have moved all the way from four-channel Altec mixers with a bass and treble control, and a couple of loudspeakers, to the very complex systems of today," he said.

"I've done a lot of automated mixing, being able to recall functions and features, probably for longer than most people in the industry. It all began with a RAMSA console that was modified with programmable MIDI mutes, and I had a computer program that ran all of that so I could call it up scene by scene.

"Five or six years ago, the next generation was the little Yamaha ProMix 01; we had a whole stack of them that were used for sub-mixing, coming into a very small 24-channel Yamaha PM3500 which had stereo inputs and programmable MIDI mutes. It went from analogue to digital, back to analogue, and then back to analogue for final mixing and then back to the digital speaker system controllers. At that time, I would have used the Yamaha 02Rs but I was a bit afraid of them, because they were still in an early prototype stage. I may have become known for sticking my neck out, but I don't actually want to get my head chopped off, so I waited until the 02R

had been proven in applications where they've been moved around a lot.

"I felt comfortable enough to spec it for this tour, and they've been great. We carry a spare 02R and a spare 03D, just in case. Normally, if you're going to have a problem with something like this, you have it in the afternoon when you first start it up - it's rare to have something go wrong during the show - and once it's up and running, everything is OK. If we do have to change anything, we have the cues stored away on floppy discs so we can restore them and be back in position very quickly."

AT FRONT OF HOUSE

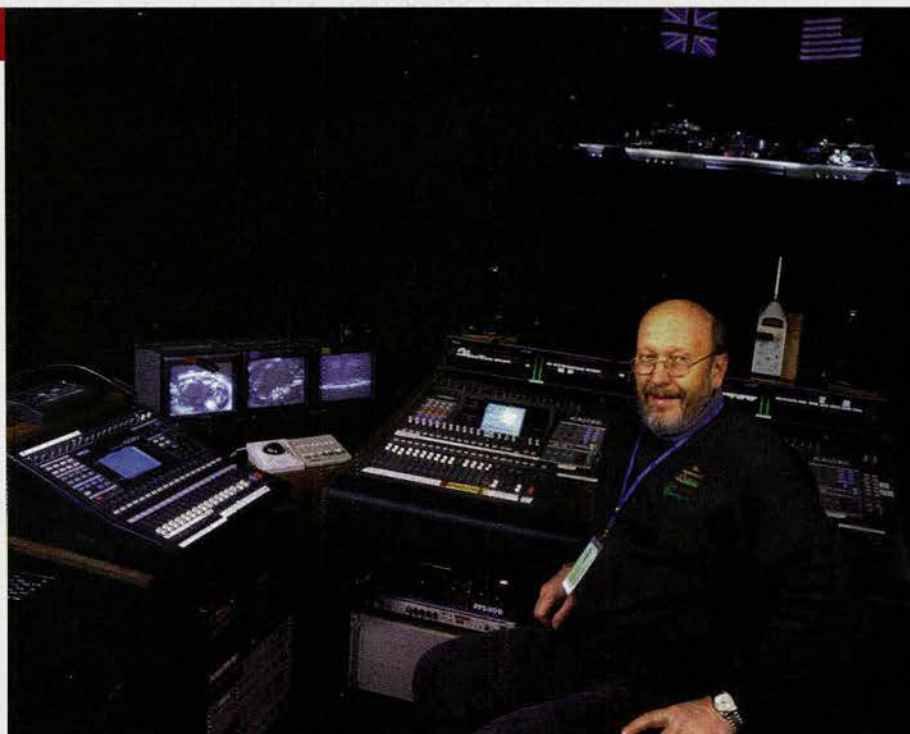
At Miller's strikingly low-key FOH position, two Yamaha 02Rs act as the main console, tied together as if they are one. There are 40 channels in each console which can be configured in different combinations of digital and analogue. This puts 80 channels at Miller's disposal. "If I assign something to the stereo buss on the No.1 console, it goes all the way to the output. It's what we call upstream, downstream in terms of digital stuff. Once you call up a cue, it runs both consoles: once you save a cue, it saves it into both consoles. I have

two screens so that I can view different things, from one console to the other.

"I also have a Yamaha 03D, which is used primarily for the opening of the show which features a sequenced overture. The overture's purpose is to give the musicians a chance to get on the stage and get ready to go - they come out of the overture playing live. A Sony PCM800 (DA88) running the overture sends out SMPTE timecode which starts the 03D, that opens all the channels on the console ready for the musicians on stage - I don't touch a thing!"

Miller has entered the digital domain so completely that, in a rather X-Files sort of way, he can be caught making repeated references to "the outside world"! "I now have 100% recall-ability of every function and feature, and I cannot imagine not having it! Once I come into the console, I don't go to the outside world for ANYTHING. There are no effects, no reverb, no limiters, no gates, no nothing. Of course, there might be a tube limiter or some device that might work better than what's inside the console; I accept that, for some applications, I still have to go out of the console, go back to analogue, and return to digital. But I believe that, by the time you start doing that, with all the patching, you might well

continued over



**Neil Diamond's
engineer uses
Yamaha 02R
consoles - for a
concert tour!**

The First Integrated Professional 5.1 Monitoring System With THX® Approval

The All-New JBL LSR Monitors are, quite literally, just that. Highlighted by a long list of performance-tailored components and customer-inspired features, they're like no other systems on the market today. The entire line, including the LSR32 3-way, 28P 2-way and 12P Subwoofer, is a technical triumph; resulting in new standards and performance levels for a rapidly emerging multi-channel recording industry.



Performance-Tailored Components

Revolutionary transducer designs, optimized network topologies and innovative materials are some of the reasons why the LSR line is being hailed as 'the world's most advanced monitor'. JBL's all-new *Differential Drive*® woofer permanently dispels the notion that better linearity, higher power handling and greater dynamic accuracy are somehow an unobtainable, evil triangle. *Dynamic braking* produces truly accurate bass at higher SPLs with maximum reliability. Composite materials, including *Carbon Fiber* in the woofer as well as *Titanium* and *Kevlar*® in the high and mid frequency components, insures performance that is always optimally maintained.

Not Just A Better Spec... A Better Monitoring System

While all companies boast about their specifications, JBL went one step further. To guarantee that every component of the LSR family worked together for optimal performance, LSR development employed JBL's unique 'system-engineered' design philosophy. Simply put: the entire line was researched and refined as one, with an overall performance goal in sight. What this means to you is a monitor and subwoofer that work together as a system; delivering stunningly uniform and accurate performance in both stereo and multi-channel applications.



LSR 32
12" 3-way mid-field monitor with rotatable Mid/High Elements.



LSR 28P
8" 2-way close field monitor with bi-amplification and active filtering.



LSR 12P
12" Active Subwoofer with Bass Management System.

Carbon Fiber Composite Cone

Dual Top Plate

Dynamic Brake Coil

Neodymium Magnet

Aluminum Diecast Heatsink

Dual Drive Coils

Diecast Frame



H A Harman International Company

To find out more about the revolutionary LSR Monitors, call Jands Electronics on (02) 9582 0909.

40 Kent Road Mascot NSW 2020 Fax: (02) 9582 0999

Write in Reader Service Number: 117

Stanley R. Miller

negate any benefits you could get by using it in the first place.

"One of the things that delights me about the Yamaha 02Rs is the fact that the effects, the reverb, the gates, all of those things are so good that I don't need to use external outboard devices for a live application. My system is now simpler than it's ever been: I have cut down my input count to about 56, from the previous 120-130, trying to think in terms of things that were really useful rather than just having everything."

RECORDING

An unusual aspect of this tour has been the presence of a large number of digital tape machines which provide 56 tracks of digital audio recording capability, theoretically enabling them to record the show every night. "We have a set of tapes that we made in the studio when we were rehearsing with all the songs and with everything going directly to tape. We have pre-amps at the stage, and we bring everything up to line level there; the splitting is done line level so we have no more mic levels coming into the consoles anywhere. That has virtually eliminated our noise, buzzes and hums."

Under the stage, one finds eight Spirit Protracker eight-channel pre-amps that feed a BSS active splitter system and the seven PCM800 (DA88) digital recorders, plus the house and monitor systems. Miller can take a direct feed from the mic pre-amps or an identical feed from the outputs of the recorders. "We lay 56 tracks directly to tape and, by unplugging one plug and plugging it in another spot, we can play 56 tracks back so, all of a sudden, we can test the cue and monitor system: if we have a problem and the mixes are wrong, we can work it out. The tracks are laid down flat with no processing of any kind, so it's as close as you can get without having the musicians on stage or having a source to work with. So when I turn Neil's vocal mic up and down, off tape or live, it's very nearly the same. There IS some difference, but it is so much better than anything we ever used to work with. We keep saying 'why didn't we do this years ago?' Obviously, it's costly to do, dragging around Sony PCM800 tape machines and all the patching. The result is something which, in my estimation, gives us far more

continued over

SHOWS WE'VE SEEN LATELY

A Punter's Perspective

CHICAGO

I wanted to enjoy Chicago. And I did. I think. The show might have been black and white but my opinion is not - maybe it's a shade of grey.

The \$3 million musical is currently playing at Sydney's Capitol Theatre but on this particular Wednesday, not to a packed house. Maybe we're becoming spoilt by the lure of the cinema where high-tech wizardry can transform the most banal script into a spectacular. To compete, theatre has to work very hard. I believe a whole generation of computer lovers who have never been to the theatre is emerging. Maybe there's a little of that in many of us.

The Capitol is a very pleasant theatre with comfortable seating, lots of leg room but they do charge \$4.50 for a bag of Minties.

Chicago is carried by the raw talent of the cast and consequently a simple yet evocative set is all that is needed. The main element to the set is the large bandstand which houses the 14 piece band. This cuts down the acting area but that just draws your focus in.

The lighting by Ken Billington is pure brilliance, an example of restraint at its best. The sound by John Scandrett of System Sound in Melbourne was very, very good - was sitting front row of the dress circle. I know many people who have seen previous shows at the Capitol and have complained about the sound quality. John Scandrett has proved that quality sound can be achieved.

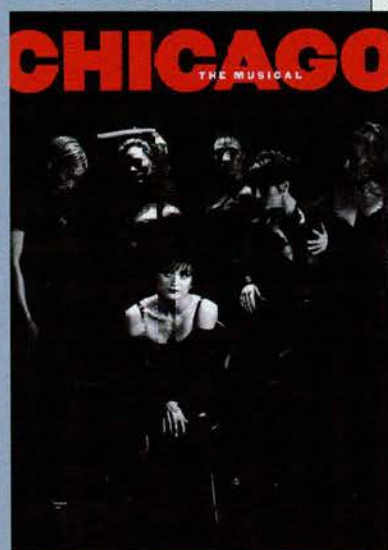
I particularly liked the costumes all of which were black - apparently 12 different black fabrics were used.

The most memorable acts from the show were the three songs where major characters were given the chance to do a solo thing. Chelsea Gibb who played the foxy Roxie Hart was a particularly stunning sex kitten whilst Caroline O'Connor, playing Velma Kelly, performed the most amazingly athletic dancing. Magazines such as *Womans Day*, *NV*, etc (so it must be true) have had a field day with the story that the two lead ladies hate each others guts. Whether that's true or not, I could see that maybe the stage isn't big enough for two such talents. Chelsea Gibb is certainly the one with the looks and unfortunately that probably counts in the world of musical theatre. My husband, an eloquent observer, said something very rude about their looks which I shan't repeat - but unfortunately audiences are made up of people like him.

But my favourite number was when Fred Casely, played by Mark Hodge, did the Mr Cellophane Man song. He was referred to as Mr Cellophane because people kept seeing right through him.

The musical seemed to loose pace towards the end and I found myself wondering what to cook for a dinner party that weekend. Hmm, what about Thai...oops, lights up. Is it over? What happened?

Cat Forcer



FULL HOUSE: THEATRE NEWS

● **Circus Oz** is celebrating its 21st Birthday with an Australian tour. Since it started in 1978, the group has played in 20 different countries to an estimated audience of 2 million people. Having just completed a tour of Queensland, Circus Oz will play at the Melbourne Town Hall from June 16 until July 11, and the troupe will perform in Sydney in December. The current production team includes Mike Finch as Artistic Director, Stage Manager Michelle Stevens, Lighting Designer and operator Gina Gascoigne, and Sound Designer and Audio operator Tim Cole.

● The 'AD Shuffle' continues with Michael Gow being named as the new Artistic Director to **Queensland Theatre Company**. Michael replaces Robyn Nevin who recently moved into the big chair at Sydney Theatre Company.

● Kevin Jacobsen and David Atkins are joining forces to stage the musical **Fame** based on the movie about New York's performing arts high school. The show will open at Sydney's Star City on July 29th and will then move on to Melbourne.

● The Victorian State Government has given \$1.2 million to the **Australian Ballet**. The funds will be allocated over four years to support the companies activities. The Government has also awarded \$6.6 million to the **Victorian Arts Centre** for a three year upgrade and maintenance program, and an additional \$1 million towards refurbishment of the **Myer Music Bowl**.

● **Luciano Pavarotti** will perform four concerts in Australia in November this year. Pavarotti will perform at the new

Sydney Superdome, Melbourne Park, and the Adelaide and Brisbane Entertainment Centres. He will be accompanied by local orchestras in each state.

● Theatre promoter John Frost has confirmed a new production of **The Sound of Music** will open in Sydney next October. It will be co-produced with Sports and Entertainment Ltd's James Erskine. After a 14-week run in Sydney, the show will head to Melbourne, Brisbane, Adelaide and Perth.

Let us perform for you



**Worldwide Concert Logistics • Sound & Lighting Forwarding • Carnet Specialists
• Fair & Exhibition Forwarding • Trucking • Air Freight • Aircraft Charters**

Birkart Concert Cargo specialises in all aspects of logistics for the concert and exhibition industry.

In Australia Birkart Concert Cargo now operate a large fleet of Air-ride Vans, Tautliners, and B-Double trucks, all with road case ramps.

Birkart Concert Cargo have over 60 offices worldwide.

ADELAIDE

Birkart Concert Cargo
35 Victoria Street, Victor Harbor 5211
South Australia
Tel: (08) 8552 3235 Fax: (08) 3552 3251
Mobile: 0418 360 709
Email: birkart@dove.net.au

MELBOURNE

Birkart Concert Cargo
28 Clarendon Street
3rd Floor, 'The Tea House', Southbank 3006
Vic., Australia
Tel: (03) 9696 2988 Fax: (03) 9696 7096
Mobile: 0141 425 262
Email: birkart@iaccess.com.au

SYDNEY

Birkart Concert Cargo
Level 2, Suite 4, Centrum Place
6-8 Crew Place, Rosebery 2018
NSW, Australia
Tel: (02) 9313 7299 Fax: (02) 9313 7300
Email: BIRKART@MSN.COM



BIRKART CONCERT CARGO

ACN 003 909 939

Write in Reader Service Number: 167

reliability and consistency on a day-to-day basis.

"The smooth running of our system does rely fairly heavily on us being accustomed to operating with computer control and recall-ability. All our amplifiers are Crown IQ-controlled because we have over 300 feet of cable between amps and speakers. Almost since its inception, I've had computercontrolled amplifiers - I think I was one of the first people on the road to do that. New for this tour, we added XTA equalisers, output EQ units and crossovers, and we come into those digitally out of the console. We have a computer-controlled system for adjusting those."

About the only thing that isn't computercontrolled, apart from Neil Diamond, is the JBL Concert Series PA rig. It hangs unremarkably over the remarkable rotating stage (presently on its third world tour). The circular structure revolves in each direction while the stage cables wind and unwind themselves tidily around a central 'maypole' mechanism below stage. Accommodation there is so capacious that the guitar techs sometimes order in pizza.

MONITORING

This Diamond tour is strange in that the lead vocalist is using traditional floor monitoring - whilst his entire band is on in-ears. Using a variety of headphones and in-ear monitors, the band members each have an Ashley VCA-controlled ear monitor system - some of which are wireless - with which they can control the volume of their mix. The wedges surrounding the stage have a full band mix for Diamond alone.

Bernie Becker, Monitor Engineer almost by default as he is more often found recording Diamond's albums, uses a Yamaha PM3500 desk chosen for its MIDI mutes. "We wanted to get the stage level down as low as we could so we did away with all the guitar amps, the keyboard players' speakers and any monitors that the players had. Everything we can, we take directly. The only mics on stage are the ATM35s on percussion, and Neil's mic, which is an SM87 head on a Lectrosomics wireless system.

"Being in the round has an interesting effect on the dynamics of the show. Sometimes the people in the house can be louder than the sound, but the dynamic of the show is set by what Stan is doing in the house - I try really hard to make the level of the monitors follow what Stan is doing so it stays consistent for the band."

Consistent. Predictable. These are the mantras of the Neil Diamond sound crew. "No matter where we are in the world, everything must be EXACTLY the same," insisted Stanley Miller. It was perhaps inevitable that he would turn to digital, which gives him a real shot at the ultimate Groundhog Day tour!

• **Flora Poste**

DIGITAL - A CREATIVE FORCE

We asked Stanley Miller about one of the popular myths - that digital mixing stifles the most valuable skills of the live sound engineer.

"Digital allows you to be more creative. It doesn't matter whether you've got 56 inputs or 100 inputs: everytime you go from one song to the next, there are things that you close, things that you leave open, EQ that needs to be changed, effects that need to be changed. I think that is virtually impossible to make all of these changes fast. I can't. So I don't think about whether I have the right switch turned on - I press the GO button to the next cue. As I call up that song, everything is where I left it the day before.

"Now you have time to be creative, concentrate on the music. It takes a while to find out how to make everything work, to discover features like being able to change the amount of pre-delay for each channel on every single channel. There may be consoles that are better in certain areas, but how does Yamaha build the O2R for the price AND make it sound good?"

BOOK REVIEW

STAGES FOR TOMORROW

by Francis Reid

Reviewed by Denis Irving

Francis Reid is well known in the Northern Hemisphere as a sort of theatrical polymath, having worked in many positions on and off stage in theatres, teaching establishments and the like. Francis has also written much on theatres and technology - he was editor of *Tab* (in the final year before Rank destroyed it), a contributor to *Cue* magazine, *Stage* Newspaper and others, and has produced excellent textbooks on stage lighting and stage management amongst others.

This latest book draws on his over forty years of experience to produce an overview of live theatre requirements and venues in the light (no pun intended) of present day challenges of rising costs and competing technologies. An absorbing read, containing many sage and accurate remarks, eminently quotable. Highly recommended to those aspiring to work in theatres, it will also afford the odd smile to those of us who've been around for some time.

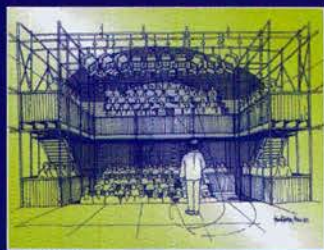
Importantly, it is to be hoped that copies will be given (suitably marked or annotated) to town or regional council officers; ministry bureaucrats; developers and/or politicians who can make or mar performance venues according to the policy decisions they make, but are often blissfully unaware of the fact.

The lesson to be learnt here is that theatres are for people, that is, they should be designed in response to a demand rather than as a political gesture. Further, the Architect, though important, must not be allowed to override the design process to the detriment of either audience or performers, or even the technicians. I cannot resist the temptation to quote directly "to proceed without a theatre consultant is now regarded as a courageous decision which is inevitably regretted - certainly by the user, if not always by the Client".

Any readers who are theatre managers may like to use Francis Reid's check list for approval - highly subjective it is, but the questions give some clues as to why good theatres survive. Finally, please remember that in all this the term 'theatre' indicates the true meaning, and does not include cinemas.

* CONNECTIONS BOOKSHOP WILL STOCK STAGES FOR TOMORROW IN A COUPLE OF MONTHS TIME.

Stages for Tomorrow



Francis Reid



DISMISSED.

The overall reader feedback appears unanimous. The Rock Pig is Pork. Being responsive to our readers, we don't run material that people dislike. So The Pig is on its bike and out of here. The beast was last seen waddling and grunting into the Railway Hotel.

Bee Gees Trouble

It seems that last month's write-up on the Bee Gees concert wasn't detailed enough and it appeared to some that Gearhouse Lighting and Screenco did all the visual work. In fact, The Big Picture company did all the camera work having been engaged directly by the US production. They acted as the link between them and the OB for Channel 9 providing splits to the OB and taking feed from them.

It should also be noted that Bytecraft were ultimately responsible for the lighting supplying all the gear and crew.

Free Classifieds

Only free if lodged by email, fax or post: email nic@conpub.com.au, fax: +61 2 9876-5715, Post to PO Box 439, EPPING NSW 2121 Australia. Display and paid classifieds: call Nicole, 1-800-635-514

Text: first 15 words free, then \$15 per 15 words or part

EMPLOYMENT

EXPERIENCED, Talented engineer/producer required for permanent employment, must have finished relevant CD examples. Call Trevor on (03) 5417 7707

INSALLER — Must have 1st class presentation, people skills and

manual drivers licence. Account Manager — senior account managing position administering key PCB client base. Co-ordinator — responsible for scheduling technical staff. Please fax resume to (02) 9516 3438.

SOUND and Lighting operator wanted to tour with Circus Sonelli. Meals and Accommodation provided (General duties also required) Call 018 559 083.

THE JMC ACADEMY is Australia's leading Music and entertainment technology college which has been in operation since 1982. The Academy delivers degree programs in partnership with the

University of New England, Macquarie University, Sydney University and University of Western Sydney. The JMC Academy maintains the highest standards in terms of facilities and training. The JMC Academy requires trainers and lectures for the following disciplines: Audio Engineering, Multimedia, TV production, Music & Entertainment Manage-

ment, Music & Music Performance. Experience and credibility is absolutely essential. These positions are on a casual basis at a contracted twelve month rate. Applications in writing only to: The Programs Co-ordinator Grace Dziedzic, The JMC Academy, 41 Holt St, Surry Hills, NSW 2010. Email gdziedzic@jmc.net.au

VER, well established Recording Studio in Sydney is looking for an Assistant Audio Engineer for a full time position. Duties include recording sessions, sequencing and digital editing. Applicant must have music keyboard skills. Studio is a smoke free environment. Call (02) 9587 7711.

BUSINESS FOR SALE

BUSINESS for sale — well established Sydney based Secondhand Pro-Audio Sales/Brokering business and Wholesale Distribution Agency. Comprises comprehensive National/International client database, successful E-commerce advertising with proven internet sales. Exclusive agents for recognised ProAudio products with active network of retail outlets. For more details phone (02) 9939 4004.

WANTED

OLD or damaged sound or lighting equipment suitable for school Discos. call Rick (03) 9592 3522.

FOR HIRE

ANALOG Live recording system available June/July/August. Record the album you've have always wanted using the renowned DG's studio A 16 or 32 Track fat and warm analogue, great mic/tube/outboard complement. Highly experienced recording engineers, extremely reasonably priced (02) 9660 8776 fax (02) 9692 9915

FOR SALE

8ch dbx noise reduction. 8ch of encoding, decoding, comb of 941,942 xlr input output \$700 (08) 8216 8743 or (0412) 518 910

AAFTER a certain piece of gear or have some to sell. Call Neil at Cannon Sound on (02) 9948 4440. Call for catalogue.

AMEK Recall, 1994, 40 channels, 8 subgroups, 12 auxes, 8 matrix sends VCA groups \$36k. Eventide H949 — Classic harmoniser \$700.00. Roland Dimension D \$950.00. Shrap International, we buy, trade and sell (02) 9939 4004 www.ozemail.com.au/~shrap

BUSINESS FOR SALE

Well established Sydney based

SECONDHAND PRO-AUDIO SALES/BROKERING BUSINESS

Comprises comprehensive National/International client database, successful E-Commerce advertising with proven internet sales.

WHOLESALE DISTRIBUTION AGENCY

Exclusive Agents for recognised Pro Audio products with active network of retail outlets.

For more details Tel: (02) 9939 4004

JANDS

Studio & Broadcast Market Manager

Jands Electronics Pty Ltd, one of Australia's leading distributors of professional audio equipment is seeking a Market Manager. In this role you will be responsible for devising and implementing all necessary marketing and sales support activity to increase business in this market sector. You would be working closely with consultants, system engineers & end users, supplying them with accurate technical information. A good understanding of professional audio relevant to the Studio & Broadcast industry is an essential criteria.

Jands is a diverse and expanding employer of 80 people, based in a new purpose designed complex at Mascot, and offer a clearly defined career path to the right applicant.

Applications can be forwarded to the following address:

Mr Peter S. Grisard
Locked Bag 15
Mascot NSW 1460

Or telephone 9582 0909 between 10:00am and Noon Monday to Friday.

"Focus 60"

Revolutionary DMX Remote no annoying cord to get tangled up in

Ask for a demo at

QLD- Herkes Pro Lighting (07) 3841 4288

NSW- Lots Of Watts (02) 9638 0302

Herkes Pro Lighting (02) 9319 3133

TAS- Frontline (03) 6331 4122

WA- ProDesign Lighting (08) 9409 8964

www.pro-design.com.au

Made in Australia by
Meltatronics

\$680 RRP
(inc. receiver)

HUM ELIMINATOR™

MADE IN THE USA BY EBTECH



Hum Eliminator™

Silence AC Hum, forever!

We've all heard it. That buzz, that noise, that AC hum pouring through audio equipment. The Hum Eliminator breaks the groundloops safely, while leaving all signal grounds intact. No dangerous ground lifting. Works with balanced or unbalanced signal at either end.

Just plug it into the signal lines between offending pieces of equipment and you're done! No hum. No signal degradation. No filtering. No noise gates. No dangerous ground lifts. No signal ground lifts.

HE-2 2 Channel MiniBox \$199
HE-8 8 Channel 1-Rack Unit \$599

Line Level Shifter™

Solve -10dBV to +4dBu problems

What do you do when you need to connect a low volume, -10dBV output (cassette deck, CD player, synth), into a high volume +4dBu input (DAT Machine, multitrack recorder)? The Line Level Shifters allow you to use equipment with different line level requirements. It converts between -10dBV and +4dBu equipment.

Using the physics of inductance and impedance matching, there's no added noise. The units also contain Ebtech's Hum Eliminator to eliminate AC hum.

LL-2 2 Channel MiniBox \$249
LL-8 8 Channel 1-Rack Unit \$699

Need more info? Contact:
AUSTRALIAN AUDIO SUPPLIES
TELEPHONE (02) 4388 4666

Australian Audio
SUPPLIES

events

THE SHOWBIZ SHOP

SOUND & LIGHTING
Hire, Design, Sales
Installations, Service

47 Auburn Street, Wollongong
Ph: (02) 4229 6010

Free Classifieds

Anytronics DMX remote controller, as reviewed last Connections, new, \$350 (02) 9799 7219

ARX 6gate \$500 (02) 9799 7219
AUDIO Desks TAC 24/8 FOH \$1,900.00, TAC 16/8 FB \$1,900.00, Mitec 24/2 \$1,300.00. E.L.S. (07) 5593 5105

Bass players dream: EV quadbox fitted with 4 x Altec 10+ speakers \$500 (02) 9799 7219

BEHRINGER SNR2000 Stereo denoiser New! In box unused \$450.00. Great unit, but excess to needs, already use and love another! SNR2000 (08) 9382 1528

BOXES. Carpeted loaded with E140 JBL Speakers \$800 the pair. Cannon Sound (02) 9948 4440.

Clay Paky DMX controlled colour +Piper+ changing spots, 3 for \$1,000 (02) 9799 7219

DBX 166A dual gated compressor/limiters \$650 each (02) 9799 7219

DDA-DD500 Crossovers \$1400 matched pair. Cannon Sound (02) 9948 4440.

DIAPHRAGMS to fit JBL 1" eg 2420, 2470, 2421, 2425, 2426 etc \$70 each. Cannon Sound (02) 9948 4440. Visit us on the web at www.cannonsound.com.au. Call for catalogue.

DIAPHRAGMS to fit JBL 2416 ie EONs and MR Series \$100 each. Cannon Sound (02) 9948 4440.

DOD SR-D6 Two digital true stereo multi effects processors in 1RU. Easy to use interface. New in the carton. Normal RRP \$799. Now \$600. Cannon Sound (02) 9948 4440.

EV 1502ER cabinets, each 15+ + 1+ horn \$1200 pair (02) 9799 7219

Flightcase to suit 4 x guitars in slide out draws, perfect for large scale touring \$250 (02) 9799 7219

HH M900 amplifiers, industry preferred mosfet workhorses \$700 ea (02) 9799 7219

JANDS GP12 Dimmer \$1,500.00
JEM Mk3 fogger \$400.00.
Theatrelight Scenemaster3 24/48ch Lighting desk, \$1,500.00
Ph(07) 4926 2445

JANDS GP12 Dimmer \$1,500.00.
JEM Mk3 fogger \$400.00.
Theatrelight Scenemaster3 24/48ch Lighting desk \$1,500.00 (07) 4926 2445

JBL 18" speakers. 2240, E151, E155 \$400 each. K151, \$350 each. 2241 for \$600 each. Yes we have new horn loaded sub cabinets to suit. Cannon Sound (02) 9948 4440.

Visit us at www.cannonsound.com.au. Call for catalogue.

JBL 2441 2+ alnico horn drivers with new titanium diaphragms \$400 each (02) 9799 7219

JBL 2445 2" Horn Drivers. \$600 each. Cannon Sound (02) 9948 4440. Call for catalogue.

JBL MR series wedges: MR802 12+ + horn \$500 ea, MR805 15+ + horn \$600 ea (02) 9799 7219

JBL stadium 2+ and 1.5+ horn flares, current issue, huge replacement value, new, \$200 each (02) 9799 7219

JBL 2226 15" Speakers \$450. Cannon Sound (02) 9948 4440 or sales@cannonsound.com.au. Call for catalogue.

B.S. Sound PA Hire

3k PA with separate F/B, LX & crew. Driveway Vocal PA Systems & LX. Mics & components also available. Contact Mark Barry for free quote (03) 9531 1403 or 041 999 3966 www.bssound.com.au mark@bssound.com.au

Graftons Lighting & Sound

Professional Equipment & Service
Hire, Sales, Installs
Production & Design
6/890 Bourke St, Waterloo NSW 2017
Tel: (02) 9698 7777 Fax: (02) 9698 9999
Email: graftons@idx.com.au

Wanna know more about AV?

Effective Audio-Visual
3rd edition. Robert Simpson.

A user's handbook for anyone who needs to know more about audio-visual equipment and techniques. Includes techniques such as overhead projection, slide-tape, film, multi-image, video and the increasing use of the computer.



\$80.00 plus p&h **Connections Shop 1800-635-514**

Lighting by Design



www.LBD.com.au

COLOUR Gobo's
Steel, Glass, Slides,

Tel 0755-377 002

See Webpage for
Projection info
Stock range
Friendly advice
Fixture sales

Fax 0755-29 2226



HirePoint98 Hire Software

32bit Windows95 & NT software

For AV, Lighting & Audio Equipment rental & production, staging & business theatre.

It will exceed your expectations!
finalist - 1997 Small business show software awards.

Download a demo from the web now!
www.HireP.com

HirePoint Software
Phone (02) 9824 1105, Fax (02) 9824 0554

Drapes and Stages

from **Staging Rentals**

"Your complete staging service"

Big range Top quality On time
Friendly, professional advice

Ph: (02) 9519 6300

Fax: (02) 9519 6489

1 Pyrmont Bridge Road
Camperdown NSW 2050
mail@stagingrentals.com.au
www.stagingrentals.com.au



STAGING RENTALS

THE AUDIO DEPT.

Wireless Microphone Specialists.
20 years experience. Large inventory of Sony UHF systems, Shure UHF and VHF systems, and now Garwood In-Ear monitors. Short or long term hire for all applications, sales and full service. Authorised Sony Wireless Service Centre.

Call for a quote.
(03) 9415 1868.

Mastercut GOBOS

- Custom made Stainless Steel and Glass Gobos
- Super fast turnarounds • Competitive prices

Telephone 07 5598 1200 Facsimile 07 5534 1891
Web Site www.mastercut.com.au



CATALOGUE Gobos
distributed by

Clearlight Shows Pty Ltd
Phone 03 9553 1688

Free Classifieds

Jem foggers from \$250, new from \$350 (02) 9799 7219

JET 15" + Horn Trapezoidal Boxes \$700 the pair. Jet 12" + Horn Box

(1 only) \$500. Cannon Sound (02) 9948 444C.

LEEM 4 channel 100 watt mixer/amp w/ built in digital reverb.

Brand new \$350. Cannon Sound (02) 9948 4440 Fax (02) 9948 9336. Call for catalogue.

Martin RS120C cabinets, original condition, each 2 x 15" + 1 x 12" + 2" horn, heavy as all get-out, but what a great install box! \$3,200 pair (02) 9799 7219

MCI JH1 14-24 track w/remote, services \$10,500.00, MCI 500-28 inputs, 32 buss out, 4 dual quad vca sub groups, 4 band para eq \$13,000.00 (02) 9939 4004.

MONITORS/FOLDBACK wedges. Pas 15" + Yamaha Horn passive wedges \$800 the pair. Session 12" + horn 3 for \$700. Drum fill w/ 2 x new P.Audio 300 watt 15" + Ac-

oustician horn, passive \$700. Cannon Sound (02) 9948 4440.

MOVING Lights, Clay Paky HPE's \$6,450.00, Stage Scans \$7,900.00, Intellabeams \$2,000.00, Jands Instinct 60 \$3,000.00, Jands Instinct 48 \$2,500.00. E.L.S. (07) 5593 5105

NAGRA: Mk III. Fully up to spec. with leather case and instruction manual. \$600. Ph.(08) 8552-3933

PAUDIO speaker components - including 10", 12", 15" & 18" speakers as well as 1" and 2" hi-frequency drivers and horn flairs.

Value for \$\$\$\$\$\$. Call for a free catalogue and price list. Cannon Sound (02) 9943 4440.

PAS 3 way crossover/limiters \$500 each (02) 9799 7219

PAS front loaded 18+ compact sub-bass cabinets (4) \$400 each (02) 9799 7219

Peavey 16 channel audio consoles, 4 band EQ, 4 auxiliaries, built into its own roadcase \$700, 24 channel version \$900 (02) 9799 7219

RENKUS Heinz 31. 2 x 15" + 2" horn - with passive crossovers \$2500 a pair. Cannon Sound (02) 9948 4440.

ROCKHARD Coatings. Keep your PA system and roadcases looking great. New 1 litre \$30. New 2 litres \$45. 4 litres \$72. 18 litres \$225. Incl. delivery anywhere in Australia. Cannon Sound (02) 9948 4440.

SENHEISER 421 microphones \$300 each. Cannon Sound (02) 9948 4440 or sales@cannonsound.com.au.

Shure wireless guitar diversity systems \$400 each (02) 9799 7219

Sony TCD D7 portable DAT \$500, DTC-55ES full size DAT \$700 (02) 9799 7219

Soundcraft Spirit Live 4 Mk2 consoles, as new, 16 channel \$3,000, 24 channel \$4,500 (02) 9799 7219

SPECTRAL Prisma HD recording system fully loaded in rack unit includes 8x8 converters, Q list software and much more \$5,700.00. Details call (02) 9980 8031 Mobile 0414 414 909.

TASCAM 102 Double cassette decks, set of 6 units including sync cables \$6,000.00 as new (03) 9417 7707

UREI 1176/1178, LA 4 black and silver face compressors starting from \$1,500.00. Shrape International, we buy, trade and sell (02) 9939 4004,

www.ozemail.com.au/~shrape

White 4660 1/3" octave equalisers \$600 (02) 9799 7219

Yamaha FX900 multi effect unit, primarily for instrument use, but has great vocal reverbs as well \$500 (02) 9799 7219

YAMAHA SPX-90 \$450. Cannon Sound (02) 9948 4440.

YORKVILLE AP-3000 new in carton, 2 year unlimited warranty. 750 watts per channel into 4 Ohms, 1200 watts per side into 2 Ohms, and 2400 watts bridged into 4 Ohms \$2000. Cannon Sound (02) 9948 4440. Visit us at www.cannonsound.com.au. Call for catalogue.

Professional Audio and Lighting Sales, Service and Production

1 Mary Parade,
Rydalmere NSW 2115
Ph: +61 2 9638-0302
Fax: +61 2 9638-0331

Lots of Watts
Pty Ltd

The gobo Factory

GLASS  STAINLESS STEEL

*Custom-made and Catalogue Range
Customised Message & Theme Sets*

Quality, Service and Competitive prices

Ph: 61 3 5439 3770 Fax: 61 3 5439 3601

Email: gobos@netcon.net.au

Website: www.gobo.com.au

Platinum Rigging Services Pty Ltd.

ACN 087 214 284

Concert & Event Rigging & Safety Co-ordination

- Sales of specialty climbing equipment (Edelrid, Kong, SRT, Stubaier etc)
- Sales of rigging hardware (Wire rope, shackles, slings etc)
- Entertainment Fall Protection Equipment specialists
- Specialty rigging and Workcover approved technical rope access concept (TRAC)

Contact Michael Kent on: (mob) 0418-4C4 371 (fax) 02-9548 0195
Email: platinumrigging@one.net.au

RAMTEK FOR CUSTOM CASES SPEAKER ENCLOSURES

Ph (02) 9153 9373

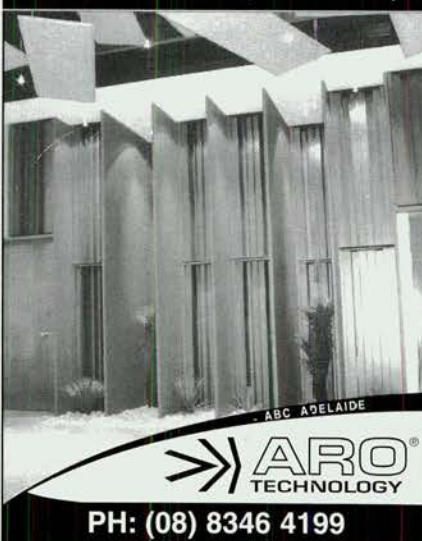
Fax (02) 9153 9329

RAMTEK INDUSTRIES PTY LTD

Unit 5, 15 Lorraine Street Peakhurst 2210

ACOUSTICS

• Manufacturers of high performance modular acoustic panels • Room design • Acoustic analysis



PH: (08) 8346 4199

ROADCASES for PROFESSIONALS

de Sine
ROADCASES

STANDARD RANGE & CUSTOM MANUFACTURE 19" RACK CASES AND SYSTEMS. LIGHTWEIGHT, STANDARD AND HEAVY DUTY. LIMITED LIFETIME WARRANTY APPLIES TO ALL CASES

CALL US FOR A CATALOGUE & PRICE LIST

PH: 07 3899 2971 FAX: 07 3899 0155

Email: desine@powerup.com.au

It's 3am and you're crawling along the floor of a dance room and your head feels like it's about to explode. Flashing; pulsing; strobing; throbbing lighting all around you. You wonder who the hell has caused this madness... why it's

ELECTRIC SUNSHINE LIGHTING...

DONE BY CRAZY MADMEN... PHONE THEM

(02) 9550 6000.

If they don't answer, fax them (02) 9550 5500. Still no good? Email lights@electricsunshine.com.au HURRY! BEFORE THEY GET LOCKED UP.

ELECTROLUMINESCENT (EL) LIGHTING SPECIALISTS

EL FIBRE - A cost effective alternative to Neon

EL SHEETS - Flat sheets that illuminate

Call us for all your EL requirements

FLEXI-GLOW LIGHTING

PH: (02) 9684-6600 FAX: (02) 9684-6688

WEB: http://www.flexiglow.com.au

High End

S Y S T E M S

High Quality Lighting *and*
Special Effects

*now available
throughout Australasia from...*

BYTECRAFT



VIC: 23-31 Fonceca St
Mordialloc VIC 3195
Tel: (03) 9587 2555
Fax: (03) 9580 7690

NSW: 5/31 Bridge St
Stanmore NSW 2048
Tel: (02) 9550 3955
Fax: (02) 9519 3977

Email: bytecraft@bytecraft.com.au Web: www.bytecraft.com.au



SL Series Spotlights

Smaller
Brighter
Better

Ring now to arrange a demonstration

VIC: 23-31 Fonceca St
Mordialloc VIC 3195
Tel: (03) 9537 2555
Fax: (03) 9580 7690

NSW: 5/31 Bridge St
Stanmore NSW 2048
Tel: (02) 9550 3955
Fax: (02) 9519 3977

Email: bytecraft@bytecraft.com.au Web: www.bytecraft.com.au



LIGHTING

EDITED BY CATRIONA FORCER

MARTIN SOLD

Martin acquired by Danish firm Schouw & Co.

Danish company Schouw & Co., a diversified and established industrial investment corporation with total equity of some \$90 million, has acquired a 48.5% share in Martin Professional. Furthermore, Schouw & Co. has acquired the rights to a further 4.9% share which will give the company a controlling interest of 53.4%.

The shares have been acquired from the three largest shareholders: Peter Johansen Holding A/S, Kommunernes Pensionsforsikring Aktieselskab (a pension insurance firm) and Mercury Asset Management Ltd.

Finally, Schouw & Co. has also acquired the Martin manufacturing facility located in the northern part of the country.

Schouw & Co. has stated that their goal with the purchase is to "invest in companies which have, and are expected to have, a leading market position. New leadership at Martin has the company on the right course and has again created expectations for positive results and sales growth. With Schouw & Co. as the majority shareholder, there will be calm waters ahead so that the company can optimize its potential."

Top Martin management, as well as the company's strategy, will remain unchanged.

In connection with the stock purchase, Martin founder Peter Johansen has signed a 5 year binding clause preventing him from carrying out activities which may directly compete with Martin Professional. Furthermore, Martin has entered into a 10 year consultant agreement with Mr. Johansen.

BYTECRAFT take on HIGH END SYSTEMS

Bytecraft and High End Systems have announced that Bytecraft has been appointed as the exclusive Australasian distributor for High End Systems.

Following the announcement by Bob Schacherl, President of High End Systems, the Marketing Director of Bytecraft, Stephen Found, embraced the appointment with great enthusiasm. "We are very proud to have entered into this arrangement with High End Systems," Stephen said.

"The synergy between our two companies is uncanny, particularly our focus on the continual development of new leading edge



Stephen Found

products for the entertainment industry," he continued. "Importantly, the High End products ideally complement Bytecraft's existing range of proprietary and distributed products. We are looking forward to extending High End products into all the diverse segments of the industry. Naturally, we are also committed to supporting existing High End clients."

Stephen went on to express Bytecraft's excitement in announcing the appointment of John Reynolds as Bytecraft's High End Specialist. "John is well known for his work in many areas of the industry and we welcome him to the Bytecraft team."

Bytecraft Pty Ltd specialises in the design and manufacture of high quality electronic, purpose built control systems for stage machinery, stage flying, stage lighting and architectural lighting.

High End Systems manufactures and distributes high quality lighting and special effects equipment for the entertainment and industrial markets.

Enquiries re High End products to John Reynolds on +61 3 9587 2555 or jreynolds@bytecraft.com.au

MY FAVOURITE GEL COLOUR

COLIN BALDWIN

director of Showcorp & GOLC



Though most of my lighting design time is take up these days with corporate & special events, some of my fave gels from my Rock n' Roll days have survived - Lee Filters - for back wash 106, 119, 105, 126, 120, front wash 024, 132, 105, 180. A great rear lectern colour is 052 and 193 & 194 make great room wash colours.

INSIDE LIGHTING



H2O & kW's

page 70



MARKET OVERVIEW: MOVING HEAD WASHLIGHTS

page 74



ANZAC DAY IN PERTH

page 82



DEEP PURPLE

page 84

TECH TALK
with Andy Gdder

page 86

BUYERS GUIDE: PROFILES, PC SPOTS

H2O AND KWS

LIGHTING THE DEEP BLUE SEA

Take Renny Harlin, add enough water to sink the Titanic, a frenzied Great White Shark trapped in an underwater laboratory, and you have a crossover summer blockbuster. Hopefully. Harlin has had a rollercoaster ride during the last few years. He directed *Cliffhanger*, married Geena Davis (*Thelma and Louise*), and wrote a swashbuckling vehicle, *Cutthroat Island* for her.

So with all that behind him, Harlin set out to make *The Deep Blue Sea*. Massive sets were built in the Baja California studio, where *Titanic* was shot.

Mick Morris, whose work on Bruce Beresford's *Paradise Road* featured in September '96 *Connections*, was the gaffer. "This was the biggest, most dangerous film I've done. We had a huge amount of kilowatts, and tonnes of water," said Morris, who was also the gaffer on *The Thin Red Line*.

A scientist, played by Safron Burrows, works in a vast underwater laboratory, converted from an old submarine station. She is working on an Alzheimers cure, a serum made from fluid extracted from a shark's brain. The hormone-injected shark is kept in a huge sea-linked pool inside the lab. One day, the shark goes berserk, and smashes through walls, giant windows, and attacks the staff.

Morris had a lot to contend with, most of it water. The main exterior tank was 200x200m, with depths ranging from 2-10m. They shot a lot of corridor scenes here, as well as the some of the shark and a model submarine. The studio is by the sea, so the horizon of the tank matches the sea horizon. The corridors are about 2.5m high, and water pours in up to 2m.

Like *Titanic*, the set spends a lot of time underwater. The entire lab, with all its practical light fittings had to be flooded for each take that the water rushes in. Morris used hundreds of Hydro Flo lights, which are sealed in waterproof tubes. These were all controlled from a dimmer rack.

Morris spent several weeks in preproduction, testing and develop-



Jacqueline McKenzie in lift shaft



Shark in wet entry

ing gear with Peter Romano, from Hydro Flex, who make underwater light and camera housing. They tested different materials, and built special tubes from 2m down to 38cm that could be operated underwater and above water without overheating or affecting the performance. These lights had been used before, but these were a newer, much improved version, made from armoured acrylic.

"There were a lot of holdups on *Titanic*," Morris said. "Their electrical problems were just titanic. We had none, no holdups at all. We did a lot of research and development. In the whole movie, someone might have waited for us 20 minutes."

Morris also worked closely with the art department to make sure the period lamps worked underwater.

Four of the eight 1200amp generators were kept on the edge of the tanks. Kilometres of cable were fed into the sets, and sat underwater on the floor on the tank. 18kWs, 12kWs, 6kW pars, and all the practical lights around the complex were controlled by dimmer racks. Everything was earth leakage protected. It would take only one hole in the hundreds of metres of cable for the film to become its own special effects star. "We hand selected all the cables and checked them all before we would accept them. We rejected a lot of cable, obviously anything with a crack or nick. We bought new cable, so that we could have lengths of 100 metres without any joins."

The night exteriors required two 40m cherry pickers,

continued over



Helicopter landing - Matt Buchan and Mick Morris hold onto LTM 18K

Irresistible

MAC 250

MAC 300

Ravage the road with the latest in compact and affordable lighting technology. Versatility and power to satisfy lighting designers and technicians. Light weight and compact size to please stage hands and roadies. Even your accountant will be happy! The new MAC 250 profile and MAC 300 fresnel luminaires - simply irresistible!

- Enhanced optical system •
- Compact size •
- 250 W discharge lamp •
- Ergonomic carrying handles •

For more information
or for a distributor list,
visit us at www.martin.dk

Martin
Professional Lighting
A U S T R A L I A

A division of Show Technology Australia Pty Ltd

13-15 Bridge Street • PO Box 480 • RYDALMERE NSW 2116 • Phone 61 2 9898 1111 • Fax 61 2 9898 1222

E-mail: Martin@showtech.com.au • Website: <http://www.showtech.com.au>

Lighting::FILM

BY::Madeleine Murray



plus a 14m cherry picker on a trailer, that went underwater. They used two Musco lights, and six LTM18kWs.

The 6m shark itself was 3 tonnes of animatronic hydraulic American know-how. Morris spent quite a lot of time, and Fresnels getting the highlights in the beast's eyes and the glint off its teeth.

The lab inside had a big window, looking out into the water, 80m below sea level. The director was going to use computer-generated imagery, but Morris and his team were able to achieve the effect with lighting. "We thought we'd try and light it, and make it look like sea ourselves, and we were successful. It was very exciting," Morris said.

They stretched a black net tight across the 10x5m window, and lit it with Cyberlights. They created the effect of shafts of sunlight coming down through rippling water, and shining through the window onto the floor. They also had exposure on the black net. The backdrop outside was lit from the top by Mole-Richardson cyc lights, which were also run on dimmers to create varying exposure changes. The lamps were coloured with a variety of blue, green and white gels.

About 25 Australians were on the crew. Steve Windon was the DOP, and Gary Hill, Matt Buchan, Strapper, Brett Jarman, and PC were the lighting team.

Flooded lift shaft with shooting crew in wetsuits



MY FAVOURITE GEL COLOUR

LOUIS BALL

Lighting designer, currently on tour with Deep Purple



"I love all colours of the rainbow. On the up stuff and the rock numbers obviously its the bright reds, ambers and all the hot looks, and on the subtler songs there's nice magentas, greens and blues. Throughout the spectrum, I like to use a diversity of colours. I'm certainly not going to restrict myself to any sort of colour scheme. There's a good mixture of 181 Congo Blue in there because...it's deep purple isn't it!"

new products::

ELECTROLUMINESCENT (EL) SHEETS A NEW LIGHTING ALTERNATIVE

Electroluminescent lights are a flexible, flat, thin, illumination source. They can be cut into shapes, used for back lighting, instrument panels, architectural accents, merchandising displays, advertising signs and special effects for movies, television, the theatre and theme parks.

EL lamps convert electrical energy into light. The term luminescence is generally associated with solids that generate light. In electroluminescence, an electrical field is applied to a thin phosphor layer to produce light.

The discovery of Electroluminescence (EL) Phosphor is credited to George Destriau while working at Madame Curie's Laboratory in 1936. Destriau began his investigations after a lab technician accidentally noticed that zinc sulfide was sensitive to electrical fields.

The technology slowly progressed, but it wasn't until recently that EL became a reliable alternative to conventional lighting methods. Moreover, most EL products had difficulty passing the environmental specifications required by many manufacturers. With significant developments in EL Technology, making the product more environmentally sound, we have seen an increase in uses for this alternative lighting method.

To really understand the power of EL one must look at the way the human eye responds to light.

The human eye happily adjusts to the brilliance of daylight at around 10 000 FL (Foot Lamberts), down to an illuminated watch face at around 3.5 FL or less. The light emitted by EL sheets stimulates the rods in your eyes. Unlike a conventional flashlight which stimulates the cones in your eyes resulting in "night blindness" when you look away from the illuminated area or turn it off. Therefore EL is Night Vision Compatible which is why it has been favoured by the military for years. So from the military and even the Space Shuttle, EL can be applied to all sorts of lighting situations.

Just recently, The Australian Gas Light Company used EL in their latest Advertisements on Television. EL sheets in the colours of their logo were cut into the shape of Australia, a light bulb and a flame. These were then attached to the front and rear of a jacket worn by the actors. An Inverter and a battery pack powered the sheets.

Flexi-Glow Lighting offers the EL sheets as a ready to use A4, A3, A2 or even an A5 light panel. This can be used as signage by simply placing a translucent graphic in front. The best part is that it is re-useable, making it a cost effective "Light Box" without the box.

If you require special lighting, consult with them to work out the most effective way of integrating EL.

Flexi-Glow Lighting can be contacted on (02) 9684-6600

DICROLIGHT

Coemar De Sisti Australia have a new addition to their FX range of products - the Dicrolight, a simple, inexpensive colour mixing (RBGY) fixed wash light. Connected to 4 channels of dimming (500w per channel) the fixture allows you to produce a myriad of colours by simply combining various intensities of each of the 4 colours (3 x Primary + Yellow) in the fixture.

There are internal fans for cool running and comes complete with a sturdy mounting yoke. Connection is via the industry standard IEC connectors. A transit cover is also included to protect the dichroic filters during travel.

Call: CDA +61 3 9467 8666.

GENI ZAP STROBE

Zap Strobes are stylish, and lightweight due to a plastic casing. They are easy to set up and to operate. Zap Strobes deliver the flash you need, where you need it. The Zap Strobe comes in a range of watts - 45, 75, 150, and Zap Strobe type FL-250P emits a laser-like, 250-Watt beam of light. A single C-clamp hole on the bracket allows for quick swivelling and handy bracket knobs make tilt adjustment easy. Gauge marks measure tilt angles for precise settings. Zap Strobes can project five lens colours - clear, yellow, blue, red and green. There are two control modes — manual and remote - with a built-in control knob for manual use.

Call Show Technology + 61 2 9898 1111.



Lighting::INDUSTRY EVENT

BY::Cat Forcer

The last week of April was full of action for Martin Professional Australia as they held their Martin Conference. International guests included Soren Storm, *Managing Director Martin Singapore*, Robert Svensson, *Product Manager Martin Professional Denmark*, Henrik Trebbien, *Technical Support Martin Professional Denmark*, and John Petts of JEM UK.

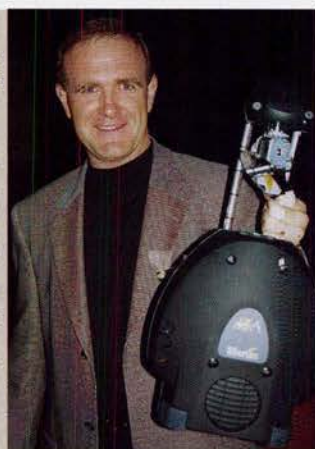
Tuesday saw the official public launch of the MAC 250, MAC 300, Exterior 600, MX1 Scanner and the latest DJ/Club effects. There were live demonstrations on Martin Proscenium, Lighting Director, Show Designer and Light Jockey. The venue was Staging Connections in Rozelle and many industry professionals attended.

Wednesday included a morning presentation by Martin staff to Australia's leading distributors of Martin products followed by a trip to see OBA OBA at Star City Casino including a backstage tour.

The new Martin MX-1 Scanner was shown for the first time. It is the first in a planned series of MX products. The MX-1 features all the high-tech optics of the MAC series and uses a 250w halogen lamp. There is a combined colour/gobo wheel which gives 18 gobos, 10 colours/3 split colours + 5 white. Other features include 230° of pan, and a smooth digital dimmer (0-100%). The scanner is also lightweight and easily serviced.

The MX-1 can be controlled via any standard DMX512 controller, function totally self-contained, reacting in time to music; or operate in stand-alone mode, without the need for external control signals.

Also available is the MC-1 remote controller which is extremely compatible with the MX-1 scanner. Price \$TBA.



What an attractive beast - the MX-1, that is! Playing second fiddle is Rod Salmon

MARTIN CONFERENCE WEEK

In the evening the 4th Annual Martin Pro User Conference Annual Gala Dinner was held on a harbour cruiser. Presented on the evening were the following Martin awards: **Avsound** received the award for the *Contracting Company of the Year*; **Chameleon Touring Systems** received the *Production Company of the Year*; and **CC's Stage and Studio** received *Sales Company of the Year*.

Thursday was a day of intense hands on training for dealers who could select from a timetable of classes, three in each timeslot, on one hour intervals. The day ended with a casual networking dinner at Sydney Tower Restaurant for all that attended the Martin Conference.

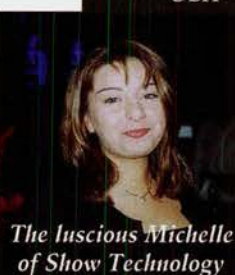
Friday was an open training day dedicated to the public with the same type of timetable format as Thursday.



Cas Jones and Richard Pachowski with Emmanuel Ziino at the Public Launch Night



Backstage at OBA



The luscious Michelle of Show Technology

Greg Yates of Chameleon with Craig Martin of Star City at the Public Launch Night



Tim Goldsmith of CCP Perth, Baz Barrett of Off The Road and Tony Davies of Chameleon at the Public Launch Night



Attracting great interest was the Martin MAC 300 moving head washlight which uses a 250W MSD lamp (2000 hour lamp life) and has a newly designed cooling system to increase light efficiency. Beam angle is 25°, a change of the front lense makes near and wide beam angles possible. A CMY colour mixing system to create nearly unlimited shades and colour choices. An additional all replaceable 6 slot + open colour wheel offers colours that traditionally have been hard to achieve from a CMY system. Added to this is a variable frost filter which can produce a zoom effect. The MAC 300 also houses a full range dimmer and fast shutter for quick strobe effects. There's 540° of pan and 289° of tilt. It's lightweight and convenient turn fasteners are provided allowing for easy horizontal or vertical mounting. Price: \$5459.22 ex tax.



Dealer Training



detailed:: MOVING HEAD WASHLIGHTS

CONNECTIONS PROFILES YOUR CHOICE

CLAY PAKY

Show Lighting Australia +61 2 9898 1666

Clay Paky is a world renowned Italian manufacturer who guarantee the highest degree of reliability and safety in all its products.

The **Stage Line** range has been purchased by *Active Lighting*, *AVLA*, *Avsound Productions*, *Chameleon Touring*, *Resolution X*, *Lots of Watts*, *Osmonds Electronics*, *Visual Innovations* and *32 Hundred Lighting*.

The Clay Paky **Stage Colour 1200** is interchangeable with the Stage Zoom 1200. Both luminaries have a generous pan (450 degree and tilt 252 degree) angles with smooth movement. This unit also has automatic repositioning. **Stage Color 1000** is the washlight that solves colour temperature variation problems at the source thanks to the use of a 1000 Watt halogen lamp. Designed and built for the needs of television and the theatre. **Stage Color 575** uses a HMI 575/SE discharge lamp with optional hot restrike and on/off control from the lighting desk. **Stage Color 300** and **Stage Light 300**, again both are interchangeable.

CLAY PAKY SAY THEIR UNIQUE FEATURES ARE

Stage Colour 1200 - ● A 4-disc Cyan, Magenta, Yellow and Amber colour mixing system provides an infinite number of rich hues plus a full range of pastel shades.

● You can choose between three diffusion intensities (including one with an exclusive 50° beam angle), and special effects such as concentric twin-coloured beams and ultraviolet light.

Stage Color 1000 - ● Uses a 3-filter CMY colour-mixing system to give the exact colour required. A frost filter of the latest generation provides a wide aperture and perfectly uniform light intensity over the entire illuminated area.

Stage Color 575 - ● The luminaire is complete with GTC, the exclusive Gradual-variation colour Temperature-Correction system. 3 filters for 3 different intensity frost effects, special effects, ovalized beam, beam stopper, strobe and mechanical dimmer.

Stage Color 300 - ● High-quality Fresnel lens, plus fading frost effect with linear variation. The frost system provides a unique 50° aperture with uniform light intensity over the entire illuminated area, which greatly reduces the typical loss of brightness associated with conventional diffusers.

● The CMY colour mixing provides an infinite varied palette, allowing lighting designers to choose exactly the right tone of colour for each scene.

● The CMY colour mixing provides an infinite varied palette, allowing lighting designers to choose exactly the right tone of colour for each scene.

UNIQUE TECHNOLOGY ASSOCIATED WITH CLAY PAKY WASHLIGHTS

Stage Colour 1200 - ● The exclusive GTC (Gradual colour-Temperature Correction) system provides gradual correction of colour temperature differences from one luminaire to the next. Stopper /

strobe on independent channel. Selectable pan and tilt resolution 8/16 bit, and automatic pan and tilt repositioning.

● Stage Color is revolutionary, thanks its easy conversion into the Stage Zoom 1200 effects projector.

Price: Stage Colour 1200 \$14039.22; Stage Color 1000 \$9359; Stage Color 575 \$11699; and Stage Color 300 \$6941.

Website: www.claypaky.it

COEF

Universal Lighting & Audio +61 7 5532 9922

Released in January the Coef MP250 Fresnel has been received well be the nightclub market which is its primary market. Current users include the *Bondi Hotel (Club Zinc)* in Sydney, and nightclubs in Melbourne and Adelaide. Customers have preferred the MP250 as it is brighter than competitive products, while offering a good features such a the on board LED function display, and importantly being less expensive than others on offer.



COEF SAY THEIR UNIQUE FEATURES ARE

● The MP250 offers specially designed bright, precision optics as mentioned above, coupled with smooth movement with a large 270° tilt and 450° pan. There 80 colour combinations along with a host of "nice" features, and of course a price more suited to the nightclub market.

Price: \$5849.40 ex tax

Website: www.coef.it

COEMAR

Coemar De Sisti Australia +61 3 9467 8666

Coemar is one of the oldest lighting companies selling moving yoke fixtures. Their latest range of moving yokes are the CF (Carbon Fibre) series and utilise numerous leading edge technologies.

The most notable sale in Australia is to GTV9 in Melbourne who purchased 26 fixture late last year. The Coemar units have been seen on many major productions including *Hey Hey It's Saturday*, *The 41st Logies*, *The Comedy Gala*, *Millionaire*, *Sale of the Century*, *The Melbourne Motor Show*, *IES conference QLD* and *Carols by Candlelight*.

The **CF Zoom al** is a 500w halogen powered fixture with CYM colour mixing, 5 - 40 zoom, 2nd fresnel lens for flat field, UV effect, 6 way Clik colour wheel, beam shaping and rotation, electronic dimmer, strobe, shutter, 16 bit Pan and Tilt.



Giotto...

...painting with light

1200W Professional Moving Head Wash Luminaire

SGM
LIGHT TECHNOLOGY

Via Pio La Torre, 1 - 61010 Tavullia (PS) Italy - Tel. +39 0721 476477 - Fax +39 0721 476170 - www.sgm.it - info@sgm.it
contact SGM or your local dealer for the complete info catalogue

Write in Reader Service Number: 164

Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: MOVING HEAD WASHLIGHTS



The **CF 1200 Spot** is a 1200w MSR powered fixture with CYM colour mixing, 5 - 40 zoom, 2nd fresnel lens for flat field, UV effect, 6 way Clik colour wheel, beam shaping and rotation, dimmer, strobe, shutter, 16 bit Pan and Tilt. Electronic flicker free ballast

COEMAR SAY THEIR UNIQUE FEATURES ARE

- Carbon Fibre Casing is flexible allowing it to bend, rather than dent or break, when it is knocked.
- Lightweight due to a drilled aluminium chassis combined with carbon fibre shell and specialised CAD/CAM design they have built a 1200w fixture that is 30% lighter than existing 575w fixtures.

• CF1200 Spot uses "Blue Pinch" technology to provide a 1200w single ended MSR lamp that is only 10cm long. This allows the overall fixture size to be reduced. Total light output is at least 3.5 times brighter than any 575w fixture currently available, they claim. The CF Zoom also uses a 500w, 55v halogen lamp specially designed to simulate the small light source area of a discharge lamp. This allows the same reflector and optic train to be used on both fixtures. The lamp also features a very high colour temperature (~3900K) which cuts through other halogen sources for more apparent brightness. Actual light output is more than a 1000w par can, despite the much lower wattage lamp.

• Coemar were the first company to introduce the now standard LED menu system for DMX control and options set-up. They are still introducing features including an internal DMX tester to allow the individual control of any parameter from the fixture. A DMX analyser is also included to determine DMX errors such as phase reversal, DMX rate errors and cable faults.

• DMX Connections - Coemar say they are the only manufacturer to offer both 3 pin and 5 pin XLR's for DMX connection.

• The CF series are the only units on the market to zoom down to a 5° beam angle allowing an ACL effect. At the other extreme the beam can be increased to 40 and softened with a unique 2nd fresnel lens to give a very flat field of light, ideal for cyc work.

• Rigging - there is no need for any transit screws or catches (which can be left engaged when the light is rigged) as the head will not move when powered down.

• Active Power Management - by switching the stepper motors to half power when they are not moving, Coemar have reduced the motors operating temperature dramatically. This ensures that the operating life of the stepper motors is increased, reducing maintenance costs and down time.

• AAT (Auto Alignment Technology) - optical sensors monitor the Pan and Tilt movement and automatically correct any accidental movement due to physical knocks or obstructions.

Price: CF1200 Spot \$13,816.39 ex tax, CF Zoom at \$10,429.51 ex tax

Website: www.cdaust.co.au

FUTURELIGHT

Coemar De Sisti Australia +61 3 9467 8666

Futurelight offered European quality at prices below the expected norm. All fixtures are designed and manufactured in house using the latest computer aided manufacturing processes. This allows them to

get new products to the market in half the usual development time.

It also allows the manufacturing of small runs of custom fixtures, like the 90 SC-580 fixtures designed specifically to the requirements of the new Sydney Exhibition and Convention Centre.

The MH-640 is a 200w MSD powered fixture with CYM colour mix, adjustable beam size, rotating beam shaping, colour wheel, UV effect, dimmer, strobe, shutter, 16 bit Pan & Tilt.



FUTURELIGHT SAY THEIR UNIQUE FEATURES ARE

• The cooling fans can be controlled via DMX allowing the unit to be silenced for short periods of time. This is ideal for when a short section of production needs to be very quiet. The fixture will override the DMX control if the unit starts to overheat during low speed operation to prevent damage to the fixture

• A number of commonly used effects, such as random strobe, pulsing dimmer and colour chasing are built into the unit and accessed directly from DMX.

• In addition to the normal fresnel lens, a frost filter is able to be inserted via DMX control. This gives an even softer beam thus increasing the practical uses for the fixture.

• The LED display can show the usual lamp life, fixture life, DMX address, etc. However it also displays other messages including fixture temperature, lamp missing, DMX value being received and overheating.

• Modular Construction allows for quick and simple repair to the unit if anything should fail from misuse and abuse.

Price: Futurelight MH-640 \$4,589.34 ex tax

Website: www.cdaust.com.au

GRIVEN

Universal Lighting & Audio +61 7 5532 9922

ColorSweep is a 1200MSR fitting intended for larger applications such as theatre, concert & touring as well as architectural applications.

GRIVEN SAY THEIR UNIQUE FEATURES ARE

• Remote zooming, full CMY colour mixing, 16 bit movement resolution with 420° pan and 300° tilt. ColorSweep continues the traditional Griven reliability and durability for which the company is renowned.



Price: \$7943.40 ex tax

Website: www.griven.com

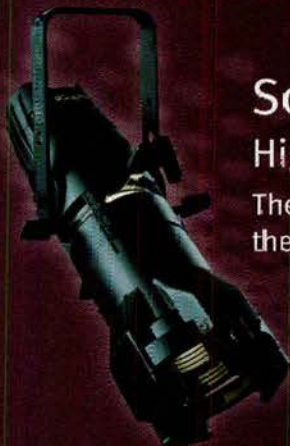
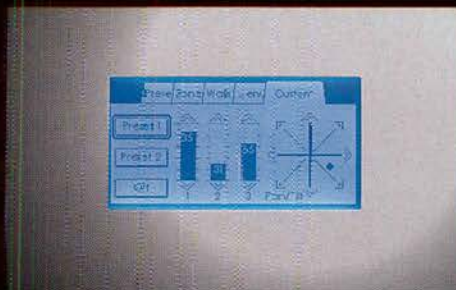
HIGH END SYSTEMS

Bytecraft +61 3 9587 2555, 2 9550 3955

The two washlights from High End are the Studio Color and the Studio Color 250. The **Studio Color** uses a MSR 575/2 discharge

UNISON Architectural Lighting Control Systems.

Transform ordinary space into
elegant lighting environments.



SOURCE FOUR

High Performance. More Performances.

The smaller, lighter, brighter ellipsoidal designed around
the revolutionary energy-saving 575 watt HPL lamp.

OBSESSION II

Unbounded Inspiration. Unconditional Power.

Effortless sophistication in lighting control.



Electronic Theatre Controls

Over 20 years ETC has built a reputation as a global leader in entertainment and architectural lighting systems.
We offer award-winning controls, luminaires, and dimmers for all types of lighting applications.



www.etcconnect.com

lamp which when combined with a computer optimized elliptical reflector provides over twice the output of comparable halogen fixtures. Careful optical design provides a reduction of 65% heat between the lamp chamber and the optical section (over four times more efficient than typical systems). The fixture uses no fans and is virtually silent in operation.

The **Studio Color 250** is the companion wash fixture to Studio Spot 250. Producing over 7000 field lumens, Studio Color 250 has plenty of punch for any soft focus application. It uses a 2000 hour, high efficiency MSD250/2 lamp developed by Philips in conjunction with High End systems. There's 570° Pan and 270° Tilt, and fast, smooth and quiet yoke movement using LWR multi-phase technology and optical encoders which automatically correct the beam head's position if the head is manually moved from its programmed position.



HIGH END SAY THEIR UNIQUE FEATURES ARE

- Studio Color features exclusive variable beam profiling, achieved through the use of selectable lens and front systems. This exclusive system delivers virtually unlimited radial beam profiling in both the horizontal and vertical planes. The fixture may also be fitted with standard PAR 64 lenses to change beam coverage.
- Studio Color includes a high speed strobe shutter and separate dimming iris with integral blackout.
- 'S' version has flicker-free performance and accommodates full positional feedback on pan and tilt, ensuring the unit always returns to its preset, even if accidentally knocked out of position.
- Fitted with full CYM subtractive mixing with high specification dichroics from High End's own in-house thin film coating optical laboratory, Studio Color 250 offers the same spectrum of rich dichroic color as its namesake. The color system also includes six independent colors to supplement the mixing-deep Red and CTO of course, plus a high efficiency dichroic Black Light filter.
- Studio Color 250 has full variable beam shaping, and a zoom function on the 105 mm fresnel lens, giving beam size control in addition to beam shaping. Also features on-board preset programming, macros and cross-loading of operating system from the Status Cue lighting console or from another fixture.

UNIQUE TECHNOLOGY ASSOCIATED WITH HIGH END WASHLIGHTS

- All positions on the color wheels may be fitted with standard or custom effects, including the full range of Lightwave Research* dichroic color filters.
- Originally available with a magnetic ballast as the Studio Color 'M' version, the 'S' version Studio Color offers several marked improvements. The primary enhancement is the substitution of a fully electronic Switching Power Supply for the MSR 575/2 lamp. This new lamp supply automatically switches itself to operate on just about any mains supply voltage provided anywhere in the world. Anything from 100 to 250V, 50 to 60 Hz.
- Lamp ignition on the 'S' version uses a unipolar 'soft start' technique. This gives almost instant ignition, even when the lamp is slightly warm, and runs the lamp up to full power in a controlled gentle manner to ensure maximum lamp life. These are both important features, particularly in film or TV work.
- High End Systems has also introduced software enhancements

which apply to both the 'M' and 'S' versions. New sophisticated software for the color mixing system models the color response of the human eye for optimally smooth color cross fading. Fading between two very different colors gives a smooth transition which looks natural and unforced. Built-in functions such as Random Strobe and Color Chases produce dynamic effects with minimal programming.

- Any combination of Technobeams, Studio Spots, Studio Color 250's and Studio Spot 250's can be linked for time code synchronized Master/Slave operation without a controller

Price: On application

Website: www.highend.com

MARTIN

Martin Professional Lighting Australia +61 2 9898 1111

Martin is an industry leader in intelligent lighting and the company's success stems from a corporate philosophy built on quality and value, innovation, professionalism, and service.

Some of Martin's most famous products include the **MAC** range, consisting of the MAC 1200, 600, 500, 250 and the NEW 300. The **MAC 600** has won many awards recently including the BEDA Award for New Product of the Year 1998, ENTECH Award for Moving Light of the Year and the LIVE Award 98 for Best Product of the Year.

Some major installations include: *Home nightclub at Cocklebay, Sydney*, *Star City Show Room*, and *10 x MAC 600 where used in Cold Chisel's Last Wave of Summer Tour*. The opening of Stadium Australia and Australia Day Ceremonies where also celebrated with MAC 600's.

MARTIN SAY THEIR UNIQUE FEATURES ARE

The MAC 600 gives fast, precise and smooth movement with the intelligent moving head Fresnel colour changer offering 440° of pan and 603° of tilt. A full CMY colour mixing system, and additional colour wheel with 4 positions + open create virtually unlimited shades and colours and two beam shaping wheels and frost filter give an unrivalled range of light effects. The MAC 600 also has 5600/3200 K colour correction filters, mechanical dimmer and mechanical shutter. With a built in diagnostics system and software updates are available through internet. It's easy to download or upload via the Martin Black box.

Designed as a compact version of the highly successful MAC 600, the MAC 300 has a 250W MSD lamp (2000 hour lamp life) and a newly designed cooling system to increase light efficiency, the MAC 300 has successfully combined high light output with small lamp size

UNIQUE TECHNOLOGY ASSOCIATED WITH MARTIN WASHLIGHTS

- MAC600 - Automatic position correction (in case of being knocked out of position)
- MAC600 - Ellipsoidal glass cold light reflector
- MAC600 - Effect calibration via control panel or serial link.
- MAC300 - Radical fresnel optical system creates a bright but gentle light beam with a soft, undefined edge.
- MAC300 - Beam angle is 18° to 35° and a simple change of the front lens makes narrow and wide beam angles possible.



INTELLIGENT LIGHTING SALE

EX-INSTALL EQUIPMENT

\$62,999



- 8 x GOLDEN SCAN HPE HMI 1200'S
- 1 x PULSAR MASTERPIECE 108 DMX CONTROLLER
- 1 x PULSAR MASTERPIECE SCREEN DRIVER
- 1 x EGA VIDEO MONITOR
- 2 x STUDIO DUE PREDATORS



FIRST IN BEST DRESSED



MiniScan 150's and 300's are the perfect workhorses for bands, nightclubs and dj's looking for unbelievable output from a compact unit. Easy to transport and install - with performance capabilities that are incomparable!

BUY FOUR	BUY FOUR	BUY EIGHT
MINISCAN 150'S	MINISCAN 300'S	MINISCAN 300'S
\$2,999	\$3,999	\$6,999

The Robocolor II is a versatile colour changer designed to suit any budget. Offering 11 stunning dichroic colors plus white, and the facility to strobe between adjacent colours. Sequence colours at high speeds or change slowly for a more gentle effect.

4 x MARTIN ROBOCOLOR II'S **\$1,199**
 Package includes controller

Martin The Roboscan PRO 518 is a compact scanner that offers five rotating gobos, a fixed prism, 17 dichroic colors plus CTC filter - the 1st goes on. There is no other scanner in its class that offers big effects in such a small package.

4 x ROBOSCAN PRO 518'S	\$4,499
8 x ROBOSCAN PRO 518'S	\$7,999

Martin The 2308 Contoller allows you to create the most complex scenes or chases possible... Functions such as precision beam movement, colour change, colour splitting, gobo pattern change and mixing - PLUS MORE!

1 x MARTIN 2308 CONTROLLER **\$599**

164 Liverpool Road, Enfield NSW 2136

Fax: (02) 9744 7798 - Email: sales@nightshift.com.au

CALL NIGHT-SHIFT ENTERTAINMENT SERVICES TODAY

(02) 9744 7777

NIGHT SHIFT

Entertainment Services

Lighting::MARKET OVERVIEW

BY::Cat Forcer

detailed:: MOVING HEAD WASHLIGHTS

- MAC300 - replaceable 6 slot + open colour wheel offers colours that traditionally have been hard to achieve from a CMY system.

Price: MAC 600 \$8571.42, MAC300 \$5459.22.

Website: www.martin.dk

SGM

Ashton Admor +61 8 9478 3800

Italian manufacturer SGM's Giotto projects a vast range of colour washes, from the softest to the most saturated using a CMY mixing system. Giotto is also fitted with a standard colour wheel having five additional colours and white which can be combined with the CYM system. The result is a range of colours more than the human eye is able to distinguish.



SGM SAY THEIR UNIQUE FEATURES ARE

- The colour temperature of the lamp can be reduced from 5600K to 3200K with the use of the colour conversion filter making the unit more suitable for TV.
- 6 microprocessors control the system enabling quality movement.
- Unit is quiet - noise level at 1m is 40dB.
- Takes 3.8 seconds to pan 540° and tilt time is 2.4 seconds.
- Has a motorised zoom 18° - 35°.
- Display brightness can be lowered until it is almost off.

- Specially designed mounting hook fits any pipe with a diameter of 38 to 50mm. On the base are 8 holes for fitting hooks, which can be mounted horizontally, vertically or at an angle of 15°.

- Uses latest generation of electronic ballasts entirely designed by SGM. This technology they claim produces a steadier, brighter light beam and results in a 30% weight reduction.

Price: \$10,959.

Website: www.sgm.it

TAS

Coemar De Sisti Australia +61 3 9467 8666

TAS is a wholly owned subsidiary of Coemar. All TAS products are built to the same standard as Coemar and use identical motors, PCB's and other major components. The final selling price is reduced however by using stock die-cast aluminium extrusions and sheet steel for the casings rather than custom built carbon fibre or moulded covers.

The CF6 is a 575w MSR powered fixture with CYM colour mix, adjustable beam size, rotating beam shaping, colour wheel, UV effect, dimmer, strobe, shutter, 16 bit Pan & Tilt.

TAS SAY THEIR UNIQUE FEATURES ARE

- TAS use special control algorithms for their stepper motor control. This allows faster head movements, quicker colour changes, smoother dimming and more accurate beam shaping.
- Micro Stepping Motors ensure smoother movements on all parameters. The control software also allows colour wheels to spin in both directions ensuring the quickest selection of the next colour or CYM mix combination.
- LED Menu - as with Coemar CF Series
- AAT - as with Coemar CF Series
- Rigging - as with Coemar CF Series
- Active Power Management - as with Coemar CF Series

Price: TAS CF6 \$8,606.20 ex tax.

Website: www.cdaust.com.au

NEWS

BYTECRAFT NEWS

Sydney Opera House have ordered 70 of the new Strand SL 15/32° coolbeam zoom profiles from Bytecraft, after extensive side by side comparisons with other 600W profiles. The units will be going into the Drama Theatre.

The University of Western Sydney have also ordered 20 of the Strand SL 15/32° and 10 of the SL 23/50° to go into a new drama room to be used with their new Strand 520 control desk.

Bathurst War Memorial Entertainment Centre have taken delivery of 13 x Strand Brio 20/50° 600W zoom profiles purchased from Bytecraft. This completes the order which included 11 x Strand Brio 18/30° zoom profiles and a Strand 520 control console.

BLM PRODUCTIONS SERVICES MOVE

BLM Production Service's new street address will be 15 Needlebrush Close, Alford's Point NSW 2234. Their postal address will remain unchanged. Call (02) 9541 4888.



**Professional Production
Design & Hire Services**
for schools, corporate, theatre,
exhibitions and special events.

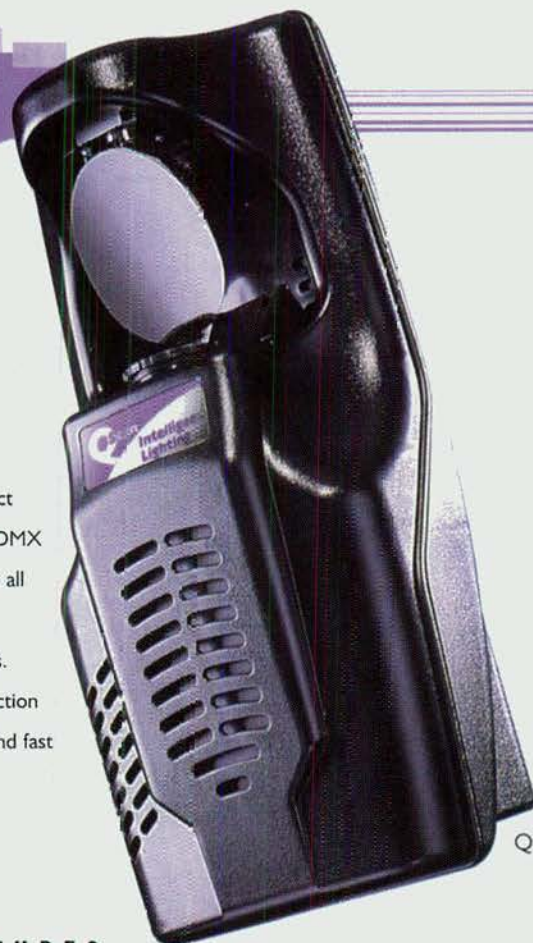
CALL FOR FREE QUOTATION

1-7 Queens Avenue Hawthorn 3122 Victoria Australia Tel: (613) 9819 6912 Fax: (613) 9819 6008 A/H Mob: 019 135 757

Q Range

The Q Range from Mad Lighting offers the latest features demanded by the professional user looking for outstanding performance from a compact aesthetic unit. Separate shutter, digital DMX address and the latest in technology, are all standard on the Q range resulting in ease of operation and stunning effects. All effects are housed in the unique injection moulded case with 'quick release' lids and fast access for servicing and maintenance.

ULTRA SILENT
MIRROR
MOVEMENT



Q Scan*

FEATURES

- Ultra quiet operation
- Digital Address System
- Pan & tilt invert select*
- Strong chassis mounted hanging bracket
- Separate shutter
- Standard or wide angle pan & tilt select*
- Long life (6000 hrs) MBI ISO arc lamp
- MSD lamp option
- High output/sharp image
- Fast, smooth, silent mirror movement*
- Low operating costs



Q Star



Q Colour



DIGITAL
ADDRESS
SYSTEM



**GREATER
UNION**
ENTERTAINMENT
TECHNOLOGY

Distributed in Australia by: GUET SVL DISTRIBUTION

87 Mars Road, Lane Cove, NSW, 2066

Phone: (02) 9420 4888 Fax: (02) 9420 3436 Email: sue_hickson@guet.com.au

Write in Reader Service Number: 106

MAD
®

ANZAC DAY CELEBRATIONS

Perth-based lighting designer Mark Howett shows a certain spark of originality when it comes to creating career opportunities for himself. Earlier this year he was sunning himself on the backsteps of Subiaco Theatre Centre when David Zampatti, Head of Entertainment for a local football arena and an old mate, walked past. Howett cheekily called out "Isn't it time you gave me a gig then Zampatti?" and was surprised to find that after a brief conversation he had indeed scored a gig as lighting director for the pre-match celebrations that would honour Anzac Day.

AFL team the Fremantle Dockers, traditionally play a game on Anzac Day as a tribute to the war Veterans. Deckchair Theatre,

Fremantle's widely recognised theatre company, has a close association with the Dockers and regularly provide entertainment for their games, it therefore seemed logical for Angela Chaplin, the company's Artistic Director, to direct the event.

Howett decided to utilise the experience to provide the lighting and stage management students at the WA Academy of Performing Arts, where he is head of lighting, with a taste of working on a large, outdoor event. "The students always work in a safe environment within the



confines of one of the academy's theatre's so I thought it would be good for them to experience something a little different." Trying to rig lights around the edges of the hallowed football ground at the Subiaco oval did indeed prove to be interesting as Howett and the students discovered, "They were certainly very precious about the grass which I do understand and we weren't allowed to walk directly across it so to get from one side to the other meant a very long walk. By the end of the first

day we were all exhausted," Howett said.

Howett and the students (who donated their time) spent a day rigging for the event and only had one night to focus, plot and tech, "We were originally meant to have more time and more of a budget but as the event grew closer we had both severely cut back. We watched one run-through and then had time to set up some lighting states before the second run-through which became our only real technical run." Howett had originally planned to use moving lights in the rig to give some flexibility but as the budget grew slimmer he had to look at more economical options and ended up with a rig of parcans and ACLs, "I had thought about using some moving lights in the rig but artistically I thought they didn't really suit the reverent style of the event and financially we couldn't stretch to them."

The rig consisted of 10 x 4 bars of ACLs, 15 x 4 bars of VNSPs, 10 x 4 bars of NSPs and four Selecon Performer follow spots. It was driven by a Hog 250 and powered via Jands Touring Racks. Howett had originally intended to use a Jands Event to run the rig but at the last moment the splitter for the desk died and they had to make a mercy dash to pick up the Hog 250. Howett said he prefers using the Hog 250 if he has moving lights in the rig but finds the Event more suitable for controlling a generic rig.

The pre-show performance started with 1,000 veterans marching out onto the oval and ending up in an arc at one end with singer John Schuman performing the haunting song "I was only 19" from centre field. The army reserve then formed a series of combat influenced tableaux around the oval with the "POLAIR" police helicopter hovering above with its powerful searchlight sweeping over them. It was originally planned for the SAS to take part by flying in two helicopters which would hover over the ground with members of the SAS team rappelling down onto the pitch but unfortunately the Civil Aviation Authority banned the idea at the last moment as



MY FAVOURITE GEL COLOUR

CHRIS NEWMAN

currently designing John Farnham's new show



"I guess O22 because it's an amber with just enough red in it to sit over blues, lavenders and other reds. It also stands alone as an amber as it doesn't have too much yellow in it. My favourite group of colours are include 180 and 079, they work nicely together."



they feared the helicopters would have to fly too close to the oval's lighting towers.

Howett's design concept was based on achieving an early morning look to recreate a dawn service atmosphere. He used the VNSPs and the NSPs to sidelight the performers, picking out key incidents with the followspots which were situated at the base of the lighting towers where they had easy access to power and a clear view of the action. Howett used the ACL's to dress the pitch and created "rising sun" looks with them enhanced by smoke bombs which gave a misty, early morning feel. The rig was mainly open white at low levels to give a warm feel though Howett also patriotically used Lee 138 (green) and Lee 101 (gold) in the ACLs.

The ACL's were rigged on the roof of the grandstands and at ground level and were used to good effect with the soundtrack which consisted of gunfire and helicopter sounds, though Howett said some of the veterans were clearly distressed by this reminder and had to leave the pitch. There was difficulty trying to convince the greenkeepers that rigging parcans on H stands on the sidelines was not going to burn their sacred grass!

During the opening ceremony Howett was permitted to plunge the oval into a blackout except for some flouros which had to be left on in the seating areas for safety purposes and some scattered light behind the stands. The effect was quite startling especially as the eternal flame was carried across the oval and left to burn there throughout the game.

The pre-show ceremony finished with a group of sailors parading in with a large prop sail and anchor, team emblem of the Dockers representing their home-base; the port of Fre-

mantle. Howett was pleased to turn a construction site at the far end of the oval into a feature by lighting up the cranes with VNSFs to provide a "port" style backdrop to this part of the ceremony.

Overall Howett felt the event went well despite the budget cuts and the fact that the ceremony was completely reblocked at the very last moment, "It was great experience for the students, a real eye-opener for them, given the sheer scale of the event and the obstacles you encounter when working in a huge outdoor venue with a limited budget, but they coped well. The most stressful aspect of it all was trying to call show-cues over the noise of the spectators, at one point we literally couldn't hear a thing other than the roar of the crowd mixed in with the deafening noise of the helicopter."



Recommended Practice for Multi-Circuit Circular Pin Connectors Available Free from USITT Website

United States Institute for Theatre Technology's Standards Committee has announced the availability of *USITT Recommended Practice RP-4: Contact Function Assignments for Multi-Circuit Circular Pin Connectors Used for the Distribution of Multiple Lighting Circuits*.

A copy of this document is available as a free download from USITT's web site. Go to www.usitt.org and click on Publications Available, then Publications Available on the Web.

This Recommended Practice provides suggested contact function assignments for the 19-contact and 37-contact circular pin connectors used for distribution of multiple lighting circuits. The information is based on a consensus of the industry obtained under the USITT Procedure for Creating Standards.

USITT is the association of design, production, and technology professionals in the performing arts and entertainment industry. Its mission is, in part, to participate in the development of industry standards and to disseminate information about aesthetic and technological developments.

The Show Factory

Advanced Pyrotechnics & Special Effects

For Concert, Corporate, Film, Television and Theatre

**Display Fireworks, Indoor Pyrotechnics, Stage Flame Systems,
Air Launch Systems, Custom Special Effects Design & Direction**

**Tel; 61 3 9428 7710 Fax; 61 3 9428 0901 Email; pyrohead@onthe.net.au
Melbourne, Australia**

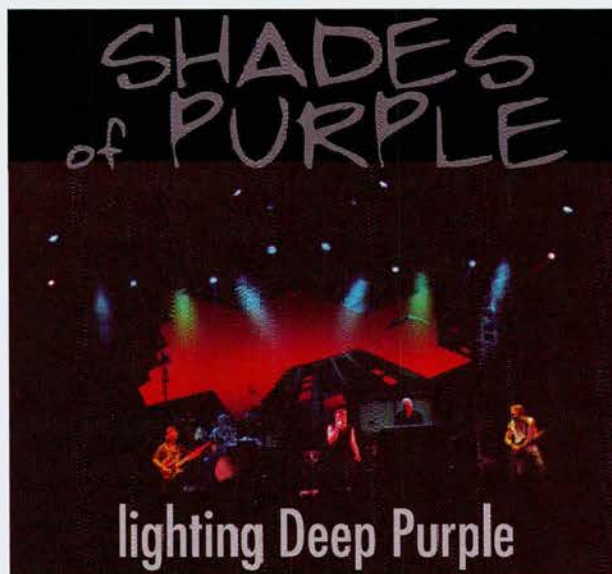
Louis Ball has been a concert LD for the last twenty-odd years touring with some of the biggest and heaviest bands in the world including Judas Priest, David Coverdale and Whitesnake, Black Sabbath, Ozzy Osborne, a regretful stint with Anthrax and on a somewhat lighter note, Wet Wet Wet. He has been Deep Purple's LD on and off since the band reformed in 1982 for the Perfect Strangers Tour.

Louis designed the current Deep Purple tour over twelve months ago at home in England. In order to accommodate so many different sized venues around the world he had to keep the design fairly simple settling on three trusses and a backdrop. The backdrop was a masterstroke. Designed by a friend of Louis' back in England, Alan Amann, the image on the backdrop is the claustrophobic effect of being surrounded by leaning skyscrapers. Painted onto scrim, Louis was able to use the backdrop as a cyc and a scrim, and by saturating it with colours it made a fantastic basis for the light show.

Louis' choice of intelligent fixtures was the Light and Sound Design™ Icons and WashLights. For this design, Louis used 20 of each, and referred to them as his 'babies'.

"They're my favourites. I've used Vari*lights a lot, but what sold me about the Icons was the front end - the desk. It enables me to put everything onto one desk and run everything myself so I don't need another operator. That's the way I prefer it.

"The fixtures themselves are big but I like them. They're great for



rock and roll. They do everything I want them to do - they wash and change gobos. I supplement them with the WashLights and they serve their purpose as fillers.

"The Icons travel well, I use them worldwide and I've never had a problem with them. So the design is nice, it's quick, it goes up easily and at the end of the day it produces the results that I require. And the beauty of it is I just back it up on the laptop computer and bring that with me and that's the show...one hopes!

Bytecraft Theatrical supplied all the lighting equipment as well as staff to rig at each venue.

Louis ran everything of the Icon console, however he used an LSC Axiom to run the colour scrollers for the 8-lites.

Louis' rig was symmetrical with the Icons and Washlights spread around the three trusses and on floorstands on stage. Four 8-lites hung above the stage for audience lighting, and key light was supplemented by four followspots from FOH. There is very little open white light throughout the show, with Louis using a rich palette of saturated colours.

"I use all colours of the rainbow. On the up stuff and the rock numbers obviously it's the bright reds, ambers and all the hot looks, and on the subtler songs there's nice magentas, greens and blues. Throughout the spectrum, I like to use a diversity of colours. I'm certainly not going to restrict myself to any sort of colour scheme. There's a good mixture of 31 Congo Blue in there because.....it's deep purple isn't it!

"I try to get a different look for each song because every song is so different. The older stuff like *Smoke on the Water* is what it is. It's sort of restrictive. But there are some real subtleties with *Screaming, Watching the Sky* and others where there are some nice dynamics. It's not just 'in your face' like heavy metal where it's full on from start to finish and it's not till the end you get to take a breather. The show breaks up nicely and I think the set list as it is at the moment makes it run really well.

"There are lots of cues in the show so it's quite busy. And also I've got to be careful because they don't always go by the script. Gillan can at any time divert to anything he chooses from an old song or a little ditty, and you've got to go with it. So you've got to be on your toes all the time."

Including Louis, there were three on the lighting crew, but they have been known to pick up stragglers...with multi-meters.

"Today as you've seen there are lots of local guys who want to see the show and have turned up with multi-meters pretending they're coming to fix things. I've got no problem



BROWN'S

PRECISION WELDING PTY LTD

ALLOY TRI TRUSS • BOX TRUSS • CIRCULAR TRUSS
18 YEARS EXPERIENCE • AUSTRALIAN MADE
ENGINEER APPROVED

Quality assured competitive prices

56 Mologa Road, West Heidelberg VIC 3031

Ph (03) 94552899 Fax (03) 94575044



CDA al fresco



What better way to show the capabilities of the latest technology in weatherproof outdoor archtainment lighting than to choose two cold and wet winter evenings down on the harbour.

Just one week after the massive hail storm Coemar De Sisti Australia set up an extensive display of fixtures at the National Maritime Museum in Darling Harbour. By careful planning (or just bringing Melbourne's weather with them in the truck) it poured with rain from start to finish of the demonstration.



A large cross section of the industry braved the weather to look at the new fixtures. The highlight was the Space Cannon IREOS 7000. This is a Xenon lamped fixture with full Pan and Tilt control via DMX which can shoot a narrow beam of light up to 5km through the air. The unit is unique in offering not just Pan and Tilt control, but also full infinite colour mix using a patented CMY system. The unit being used to easily lit the Harbour Bridge, AMP tower, and other Sydney buildings from the location at the Maritime Museum.

The other fixture creating a lot of interest was the Coemar NAT TM4000 in a weatherproof enclosure. This fixture has been available for some time, but Coemar DeSisti Australia have just released a range of locally made enclosures offering various

IP rating for installations and hire. By offering a range of enclosures with different IP ratings the cost for many installations is greatly reduced, as only the required level of weatherproofing is paid for.

The NAT TM4000 was fitted with the new 5 lens. This gives the unit the ability to project gobos over distances of up to 1km. This was shown with a city skyline gobo being projected onto many city buildings including the IBM tower, Telecom building and the IMAX cinema. By using the 360 moving head on the fixture the unit was able to shoot it's light almost anywhere requested.

The front the National Maritime Museum was lit by a number of Coemar CF1200 Spots, and a single Space Cannon FOCUS fixture was used to light the lighthouse. A custom made lens was used to give exactly the right beam shaping and coverage required for this unusual shaped building.

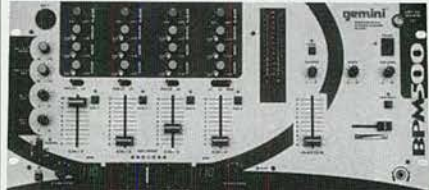
Once safely inside the shelter of YOTS restaurant at the museum a few other products were on display. The most notable of these was Coler Kinetics, a new range of fixtures using colour changing LED technology that provides infinite colour mixing with almost no heat and 100,000 hours of lamp life (that's over 11 year of 24 hours a day continual usage). The units range from a tiny MR16 unit up to a waterproof, submersible fixture ideal for pools and fountains. All of the fixtures have an internal microprocessor with a range of inbuilt effects or can be remotely controlled via DMX512 or computer interface.

Coemar De Sisti Australia run these demonstration events of regular occasions all over the country. If you would like to attend then please contact Richie Mickan or Simon Pictor on (03) 9457 3666 or email them at cdaust@eisa.net.au

with that, if they enjoy the show then they're welcome. No worries! See, I've learnt some Australian, 'No Worries'. They tell me 'Nothing works but no worries'. I love it!"

When Louis isn't touring he designs lighting for corporate events. His next major corporate job is a large Rover launch in Birmingham later in the year.

"I get tagged with this heavy metal tag but there are a lot of subtleties to me. The corporate stuff is great because it's big and it's different. And of course financially it is very rewarding. But I need something to keep me interested. I haven't ventured into theatre because it's too laid back, I'd be asleep at the desk."



BPM-500 MIXER -
dual LED heat display
-Digital BPM display
-Balanced Master Outputs
-Japanese made E-Z crossfader



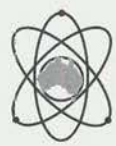
PDM-10 MIXER -
4 stereo channels
-3 Phono/Line convertible
-Tone Controls for Mic
-Master Treble and Bass Controls



XPM-1200 AMPLIFIER -
530 watts RMS per channel, 4 ohms
-Mosfet Output Stage
-Front to Rear Air Flow with Two Speed Dual Fan Control
-Comprehensive Protection.



www.discoworld.com.au
email: info@discoworld.com.au



Disc World pty. Ltd.

SHOWROOM

Factory 20, Cave Hill Road
Lilydale Victoria 3140

Ph 03 9735 0588
Fax 03 9739 5441

NEW ZEALAND OFFICE
Ph (Mob.) 025 723 243

Write in Reader Service Number: 173

What Temperature is a Colour?

White light comes in a wide variety of shades, from warm, golden candle light to harsh, blue Antarctic day light. Colour Temperature is a means of identifying, measuring and comparing all of these shades of white. The central concept of colour temperature is the well-observed phenomenon that when materials are heated-up, as long as they don't melt, vaporize or burn - they glow. The amount of glowing and the colour of the glow are related to how far the material has been heated.

White light is really quite a slippery idea to grasp, in that the description really applies to almost any light from any source, so long as it contains enough bits of the colour spectrum to convince our brains that we can see most colours. Some "white" light, notably the output of some discharge sources, has big chunks of the spectrum missing and can cause all kinds of havoc with our ability to see colours accurately. It's always fun to watch a scenic artist struggling to match a colour at night under Mercury

vapour worklights: as most of the red part of the spectrum is missing from Mercury vapour light, the scenic artist has almost no means of knowing whether they have added the right amount of red to the mix. The white light from other discharge sources such as HMI, MSR and CSI may contain the whole of the spectrum, but in different proportions from the light that we are accustomed to seeing from incandescent sources such as candles, the sun or a filament lamp. We will look at incandescent sources for now and tackle the peculiarities of discharge light sources in another Tech Talk.

We have all observed the process of progressively heating a piece of metal, whether it was a poker in a fire, the hot-plate on an over-stoked barbecue or the little piece of Tungsten wire that is the filament of an incandescent lamp. At first the metal gets too hot to touch but not hot enough to glow: there is heat (infra-red radiation) being emitted but as yet no visible light. Next the metal starts to glow a deep red colour: the metal has more energy and is now starting to emit visible light at the lowest energy end of the spectrum¹. As the temperature of the metal increases further, the energy of the emitted light also increases, progressively adding the other colours of the spectrum and changing the colour of the metal from orange, through yellow, to increasingly cooler-coloured (bluer) white light. If we were to continue heating the metal we would be able to measure Ultra Violet energy being emitted; sufficient energy that some low-voltage Tungsten Halogen desk lamps have been associated with increases in UV-related skin cancers.

The colour of the light is clearly related to the temperature of the source, but different materials will glow at different temperatures and all materials will change in some way if we heat them up sufficiently. In order to create a meaningful comparison of the light emitted by different glowing bodies Colour Temperature refers to the properties of the Black Body Radiator: an imaginary object with a totally non-reflective, matt-black surface, which can be heated to any temperature without melting, boiling or incinerating. The Colour Temperature of a light source is the temperature, in Kelvin² degrees, which the mythical black body would have to be heated to in order to produce light of a matching colour³. As colour temperature is a measure of the comparative colour of a light source, not its actual temperature, measurements are stated in Kelvin

(K) not degrees. Eg. a film/TV studio light source is identified as being 3,200K, indicating that its light matches that of the black body at 3,200 degrees Kelvin, not that the filament is at that temperature.

The approximate colour temperatures of some common light sources are: candle 1,900K, domestic Tungsten filament lamp 2,700K, PAR64 120v 2,000hr life (standard Parcan lamp) 2,850K, stage Tungsten-Halogen lamp 3,000K, Film/TV studio Tungsten-Halogen lamp 3,200K, PAR64 240v 750hr life 3,200K, sunlight 5,600K, overcast sky 7,000K, clear blue sky (no direct sun) 16,000K. Colour temperature correction filters are designed to change the balance of colours from a light source of one colour temperature to match another colour temperature. Everybody's favourite cool blue, Lee 201 or Cinegel 3202 (otherwise known as Full CTB -Colour Temperature Blue) is designed to remove the red and orange parts of the spectrum from a Studio (3,200K) lamp so that it will match daylight from the sun (5700K). Full CTO (Colour Temperature Orange), Lee 205 or Cinegel 3401 is designed to perform the opposite task, that of converting daylight (5,700K) to match studio Tungsten Halogen (3,200K).

Perhaps the most confusing aspect of colour temperature has to do with language and terminology. We have been taught the terminology of the artist's colour wheel, when we describe the nature of colours, we talk of orange as a WARM colour and blue as a COLD colour, yet the bluer a light source the HOTTER its colour temperature.

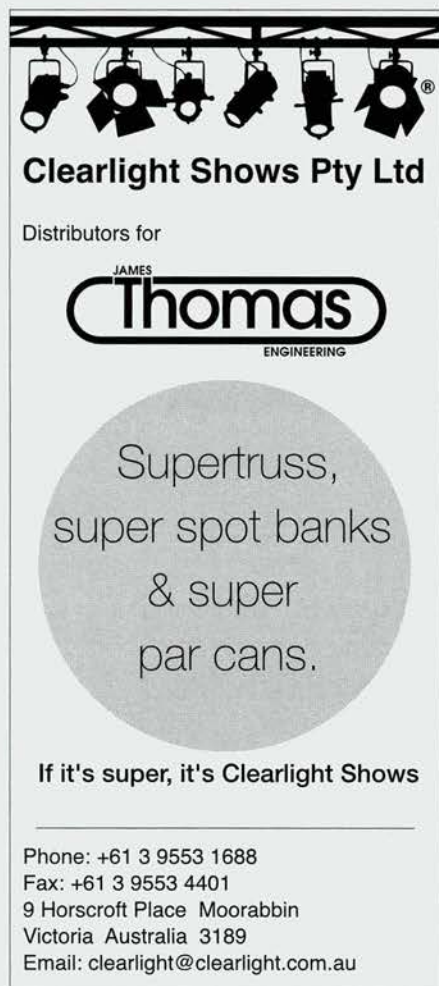
1 For those whose memory doesn't readily (or willingly) reach back to their high school science days, the light spectrum, in increasing order of energy is: (Infra-Red,) Red, Orange, Yellow, Green, Blue, Indigo, Violet, (Ultra-Violet). Does the name Roy G Biv ring any bells?

2 The Kelvin scale uses Celsius degrees but has a starting point of Absolute Zero (-273°C), the (as yet unattained) theoretical minimum temperature to which matter may be cooled. A room temperature of 20°C is 296°K.

3 As discharge light sources don't involve a material being heated up until it glows they cannot actually have a colour temperature, although if they produce the entire colour spectrum they may be assigned a Correlated Colour Temperature.

4 Rosco's range of colour temperature filters and diffusion materials.

Responses, suggestions or personal abuse to TechTalk@kilowatt.com.au



Clearlight Shows Pty Ltd

Distributors for

Thomas
ENGINEERING

Supertruss,
super spot banks
& super
par cans.

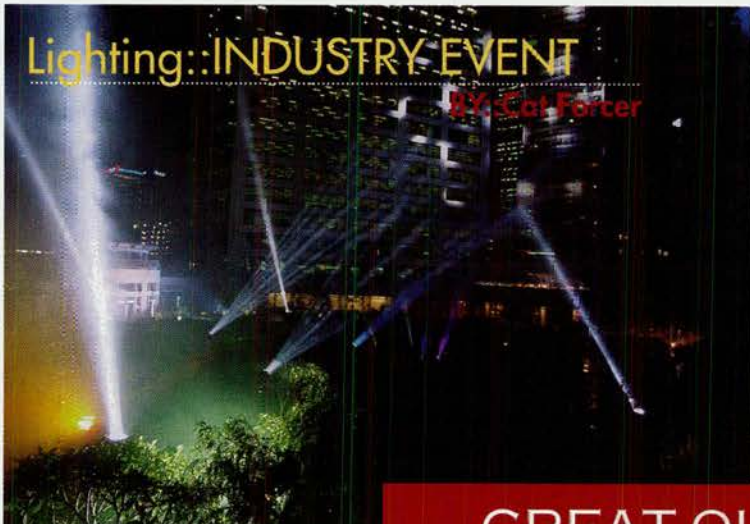
If it's super, it's Clearlight Shows

Phone: +61 3 9553 1688
Fax: +61 3 9553 4401
9 Horscroft Place Moorabbin
Victoria Australia 3189
Email: clearlight@clearlight.com.au

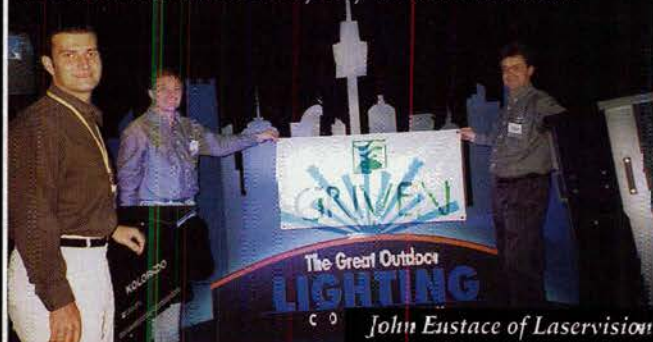
Write in Reader Service Number: 156

Lighting: INDUSTRY EVENT

BY Cat Forster



Con Biviano of ULA with the Directors of GOLC Roger Hind and Colin Baldwin at the Sydney On Sale Exhibition



John Eustace of Laservision

GREAT OUTDOOR LIGHTING COMPANY LAUNCH

The Great Outdoor Lighting Company introduced its collective of specialised outdoor luminaires to international Meetings, Incentives, Conventions and Exhibitions industry professionals at its premiere performance at 'Sydney on Sale'.

The Great Outdoor Lighting Company's production and technical team included Showcorp Production Services, Laservision MacroMedia, and Howard & Sons Pyrotechnics. The Electric Canvas is also part of the production team but no large-scale projections were required on this particular night.

Products used in the display included Space Cannon's automated 7K Xexon 'Ireos' Search lights; Griven 1.8K 'Kolorado' Wash Lights; Griven 4K Xexon 'Imperial' Search Lights; Griven 4K 'Tracer' Search Lights; and some MAC500's. A Martin Case Controller was used to program the new fixtures with new drivers developed for the them. The equipment landed only a week prior to the event and new DMX channels had to be swiftly configured to run through the Case Controller. This proved a bit daunting with the Ireos 7K as its protocol was very different. Fortunately, Martin's Case Controller Software developer was in the country for the Martin Conferences and he helped solve the problem.

Once finished, the program was downloaded to the Sinodial pump - this was the first Australia production to incorporate new 'Sinodial-Series' show control technology developed for macro-media performance integration by Laservision. The Sinodial-Series digitally controls all Sky Production aspects, simultaneously delivering DMX-512, RS232/422/485, SMPTE time code, digital audio playback, Laser scanner commands and Pyro synchronisation to choreograph each performance.

Additional macro-media display elements can be incorporated within Sky Productions to add further dimension, including film, video and large format slide projection.

Laservision's Macro-Media 'Excelsior' high power (10W) dual head Argon laser projector was also used in the display as were pyrotechnics. Air-cooled laser to display sponsor logos.

All the outdoor lighting fixtures were fully weatherproofed which was just as well as it was a wet night.

Peter Kemp of CDA with Con Biviano of ULA.



OUTDOOR EVENT LIGHTING

for hire & sale

-Call for a quote

Chameleon Touring Systems Pty Limited

Unit 7/41-45 Bourke Rd (PO Box 206), Alexandria, NSW 2015

Tel: (02) 9310 5222 Fax: (02) 9310 5511

www.chameleon-touring.com.au



Write in Reader Service Number: 199

PROFILE, PC SPOTS

FIXED BEAM PROFILE SPOT

COEMAR

Coemar De Sisti Australia (03) 9467 8666
Centro Beam spread: 250. Size(mm): (LWH) 390 x 195 x 260. Wattage: 300/500W GY9.5 Working Distance: 3m -12m. Complete with Framing Shutters. Options include: Iris, Deflecting Mirror, Gobo Holder, Coloured Glass. \$455.

ETC

Jands (02) 9582 0909

Source Four High efficiency 575W HPL Lamp, more output than most 1200w profiles. Fixed beam angle, Interchangeable lenses, 19°, 26°, 36°, 50°. \$897.

Source Four 10 degree High efficiency 575W HPL Lamp, more output than most 1200w profiles. Fixed beam angle, Interchangeable lenses, 10°. \$1,307.

Source Four 5 degree High efficiency 575W HPL Lamp, more output than most 1200w profiles. Fixed beam angle, Interchangeable lenses, 5°. \$1,635.

Source Four Jr High efficiency 575w HPL Lamp. Compact design fixed beam angel 26°, 36°, 50°. \$635.

SELECON

Aust wide dealer network

Selecon Pacific 20°, 30°, 40°, 50° and Super Wide 90° World's first base down axial profile, cool beam and cool operating controls with Selecon's active heat management system. Choice of 600 & 1000w TH, 575w MSR, 150w CDM lamps 600w lamp provides similar light output to traditional 1200w Zoomspot. Beam field adjustable from flat to peak field using Selecon's unique planetary



Selecon Pacific

gear adjustment. 360 degree rotatable lens tube; two pattern mounting slots; auto mains power disconnect, exceeds European safety requirements. 8.5kg. \$650.

STRAND LIGHTING

Bytecraft, (03) 9587 2555, (02) 95503955

SL Series - NEW! Latest 600W coolbeam spotlight using the GKV 600W lamp. With excellent light output, superb distribution and the smoothest soft edge while maintaining beam size. Sharp gobo, edge and shutter focus with 360° body rotation. Common lamp house with easily interchangeable lens tubes. Available as 5°, 10°, 19°, 26°, 36°, or 50°. \$700.

ZOOM PROFILE SPOT

COEMAR

Coemar De Sisti Australia (03) 9467 8666
Zenith 15-41°. Size(mm): (LWH) 500 x 365 x 380. Wattage: 500/650W GY9.5 Working Distance: 3m -12m. Complete with Framing Shutters & Colour Frame. Options include: Motorised Colour Wheel, Iris, Gobo Holder, UV Glass. \$700.

Focus High powered discharge lamp range of zoom profiles aimed at the display & projection markets. Utilise long life 1800°V CMD and 2500W HTI lamps. Options include: Iris, Gobo Holder, Dichroic Glass Filters, & Dimmers. From \$6,800.

ETC

Jands (02) 9582 0909

Source Four Zoom High efficiency 575w HPL Lamp, 15° - 30°, 25° - 50°, Patented single hand zoom & focus mechanism. \$1,895.

Source Four Jr Zoom High efficiency 575w HPL Lamp, Compact Design, Zoom 25° - 50°. \$635.

PULSAR

Show Technology Australia (02) 9898 1111

Fresnel 650W adjustable beam from 68 to 8.50°, making it possible to flood or spot virtually any area. It also features an interchangeable lens and system to convert the unit to a pebble convex lantern plus integral safety bracket, locking cup, matching lock off and focus control knobs for smooth accurate positioning and focusing. \$217.22.

Fresnel Pebble Convex 650W Fitted with the same housing as a 650W Fresnel but features a polished pebble convex lens to provide a harder edged spot. The advantage this gives is that a tighter focus can be obtained down to 6 deg. \$233.61.

Profile Spot 650W produces a fully focusable hard or soft edged beam along with the usual features of a profile

spot. The gate is fitted with four stainless steel beam-shaping shutters together with runners to accept an optional gobo holder or iris, giving full control of the light beam. \$434.43.

SELECON

Aust wide dealer network

Selecon Pacific 12° to 28°, 23° - 50° Zoom systems World's first base down axial profile, cool beam and cool operating controls with Selecon's active heat management system. Choice of 600 & 1000w TH, 575w MSR, 150w CDM lamps 600w lamp provides similar light output to traditional 1200w Zoomspot. Beam field adjustable from flat to peak field using Selecon's unique planetary gear adjustment. 360° rotatable lens tube; two pattern mounting slots; auto mains power disconnect, exceeds European safety requirements. 8.5kg. \$720.

Acclaim Zoomspot Std (18° - 34°) and Wide (24° - 44°) 300 - 650w. Industry std 240v "T" class lamps (av. life 500 - 600hrs). Ellipsoidal reflector. Interchangeable lens trays. Wide range of shutter masking angles. Rotatable pattern holder. Auto mains power disconnect, exceeds European safety requirements. 5.4kg. \$435.

Acclaim Condensor Std (18° - 32°) and Wide (24° - 44°) 300 - 650w. Industry std 240v "T" class lamps (av. life 500 - 900hrs). Dual condensor optics, ideal pattern projector. Interchangeable lens trays. Wide range of shutter masking angles. Rotatable pattern holder. Auto mains power disconnect, exceeds European safety requirements. Wgt 5.4 kg. \$540.

Selecon Zoomspot 1200, Medium 18° - 34°, Wide 24° - 40° 1.0/1.2kw. Industry std 240v "T" class lamps (av. life 500 - 900hrs). Ellipsoidal reflector. Interchangeable lens trays. Dual rotatable shutter system. Rotatable pattern holder. Auto mains disconnect, exceeds European safety requirements. \$835.

Also available - **Selecon 1200 Condensors and Arena Zoomspots**.

SPOTLIGHT

Ashton Admor (08) 9478 3800

F1122S 24°-50° zoom or 13°-35° zoom, 1200w, die cast aluminium, 2m cable, safety micro switch. \$1096.

STRAND LIGHTING

Bytecraft, (03) 9587 2555, (02) 95503955

SL 15/32° NEW! 600W coolbeam spotlight, exceptional light output with clean distribution; unique full 360° body rotation allows rapid and accurate focussing for any shutter or gobo position; bayonet action lamp changing, compact size and off-centre pivot point for close hanging; Also available as 23/50°. \$1150.

Quartet 22/40 650W compact economical twin lens zoom profile with beam angle and focus control in addition to peak/flat beam distribution adjustment. Uses T26 lamp, ideal for theatres, school stages, museums and display lighting. \$630.

Cantata 1200W professional theatre spot for theatre, concert halls and touring. Include rotatable gate assembly, easy access for lens cleaning, adjustment between peaky and flat. Uses T19 lamp. Available as 11/26, 18/32 or 26/44 beam spread. \$1244.

Optique 8/17 1200W variable angle condenser optic zoom profile with a smooth flat field ideal for gobo projection, standard rotatable gate assembly, uses CP90 lamp. Also available as 15/42 version. \$1396.

TAS

Coemar De Sisti Australia (03) 9467 8666

Profile 22/40 Beam spread: 22/40°. Size(mm): 740 x 355 x 408. Wattage: 650/1K/1.2K GX9.5 Working Dis-



Altman 360Q



Clearlight Shows Pty Ltd

Distributors for

Mastercut
AUSTRALIA

Great gobos.
Great range.
Great service.
Great price.

If it's great, it's Clearlight Shows

Phone: +61 3 9553 1688
 Fax: +61 3 9553 4401
 9 Horscroft Place Moorabbin
 Victoria Australia 3189
 Email: clearlight@clearlight.com.au

Write in Reader Service Number: 154

tance: 4m -11m. Complete with Framing Shutters & Colour Frame. Options include: Iris, Safety Wire Guard, Gobo Holder. \$1350.

Profile 15/28 Beam spread: 15/28°. Size(mm): 740 x 355 x 408. Wattage: 650/1K/1.2K GX9.5 Working Distance: 6m -17m. Complete with Framing Shutters & Colour Frame. Options include: Iris, Safety Wire Guard, Gobo Holder. \$1350.

TEATRO

Lightmoves Technologies (02) 9560 0000

Onda 15/41 unique beam angle range for one 650w profile spot. 15°-41° elegantly styled, CE approved, easy to adjust, uses lamps at 650/500/300 watts. \$545.

Punto Pc 500w/650w biplane lamp, 8°-50°, 1/2 peak, 130-540 field angles, safety disconnection, four-leaf rotatable barndoor. \$305.



ETC Source Four

SELECON

Aust wide dealer network

Acclaim P.C. 300 - 650w. Industry std "T" class lamps (av life 500 - 600hrs). Adjustable beam - 4 - 64°. Auto mains disconnect. Rear grab handle. Captive focus movement system. Adjustable yoke position Barndoor accessory to shape beam available. 2.8 kg. \$230.

Selecon High Performance PC 1200 1.0/1.2kw. Industry std "T" class lamps (av life 500 - 900hrs). Adjustable beam 4.5 to 62°. Unique 175mm (7") lens. "World leader in beam quality" - Francis Reid. Auto mains disconnect. Captive focus movement. Barndoor accessory to shape beam. 6.1kg. \$560.

Selecon Compact P.C. 1.0/1.2 kw. Industry std "T" class lamps (av. life 500 -900 hrs). Adjustable beam 5 - 60°. 150mm industry std lens. Auto mains power disconnect. Adjustable yoke position. Captive focus movement. Barndoor accessory to shape beam. 5.4 kg. \$445.

Arena P.C. 2.0/2.5kw. Choice of GY16 (CP72) or G22 (CP91, CP92) lamp base. Adjustable beam - 4.5 to 60°. Adjustable position yoke. Auto mains disconnect, exceeds European safety requirements. Barndoor accessory to shape beam. 10.2kg. \$520.

SPOTLIGHT

Ashton Admor (08) 9478 3800

F105ZW 6500w, die cast aluminium, relamping door, 2m tail safety micro switch. \$628.

Com05PC Pebble convex, combi 6500w, GY9.5. \$291.

Com12PC Pebble convex, 1000-1200w, GY9.5. \$395.

STRAND LIGHTING

Bytecraft, (03) 9587 2555, (02) 95503955

Quartet PC 650W compact economical spot with a Prism-Convex lens giving a tighter beam and wider range of beam angles from 7.5° to 55.5°. Uses T26 lamp, Ideal for theatres, school stages, museums and display lighting. \$375.

Cantata PC 1200W powerful theatre spot with a Prism-Convex lens giving a tighter beam and wider range of beam angles than a fresnel. Screw action focus adjustment varies the beam angle from 4.5° to 52.7°. Uses T19 lamp. \$673.

Alto PC 2000W high power high specification spotlight giving an intense beam of light with a less diffused edge than a fresnel. Front and rear screw action focus provides a variable beam between 4° and 58°. Uses CP92 lamp. Optional barndoors. \$1325.

TAS

Coemar De Sisti Australia (03) 9467 8666

Spot 300/500 PC Eco Approx. Beam spread: 8°-50°. Approx. Size(mm): (LWH) 225 x 204 x 245. Wattage: 300/500W GY9.5 Working Distance: 3m -10m. Complete with Colour Frame. Options include: Fixed & Rotating Barndoors. \$236.

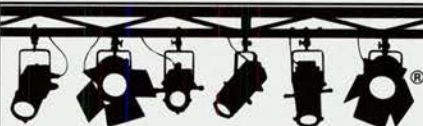
Spot 650/1K/1.2K PC Eco Approx. Beam spread: 7°-60°. Approx. Size(mm): (LWH) 400 x 250 x 300. Wattage: 650W/1K/1.2K GX9.5 Working Distance: 4m -16m. Complete with Colour Frame. Options include: Fixed & Rotating Barndoors. \$313.

Spot 650/1K/1.2K PC Beam spread: 7°-60°. Size(mm): (LWH) 409 x 254 x 300. Wattage: 650W/1K/1.2K GX9.5 Working Distance: 4m - 16m. Complete with Colour Frame. Options include: Fixed & Rotating Barndoors, Safety Wire Guard. \$514.

next month::

LIGHTING CONTROL

email: catriona@conpub.com.au



Clearlight Shows Pty Ltd

SELECON

You don't need
to be in a hot spot.
Call us about a
Pacific cool light.

If it's cool, it's Clearlight Shows

Phone: +61 3 9553 1688

Fax: +61 3 9553 4401

9 Horscroft Place Moorabbin

Victoria Australia 3189

Email: clearlight@clearlight.com.au

Write in Reader Service Number: 155

NEWS

SELECON NEWS

Sydney's Lots of Watts are supplying Pacifics and a kit of other Selecon luminaires to West Sydney Uni for their new Performing Arts venue. At the opposite geographic extreme the Academe Pushkin in St Petersburg, Russia have re-equipped with 90 Selecon Pacifics Zooms along with Selecon Arena PC's and Aurora Cyc lights. Following on from their debut showing at LDI recent USITT Show Selecon are delighted to announce the establishment of a North American sales network. This comprises the Barbizon network of ten sales offices covering the US and a number of independent lighting resellers in Canada and on the West Coast of the States. Selecon's MD Jeremy Collins comments "It is very exciting to have achieved a 'finger nail entry' into the US market. It is a great vote of confidence that Barbizon who are the second largest sales company in the US entertainment lighting market approached us to take on our product range. It is a great challenge for an Australasian company to enter into the US market. The fact that Selecon is in a position to take this on is due in no small part to the support and encouragement we receive from the Australian entertainment lighting industry. Thanks!"

fogfor495*



The new Rosco Alpha 900 is the lowest priced of all Rosco's fog machines, and carries the Rosco assurance of high quality. The Alpha 900 fog machine is ideal for discos, church halls and schools. Simple on/off remote control, the Alpha 900 is economical and powerful enough for amateur theatres and all those on a limited budget. Made for Rosco to exacting specifications, the 900 is compatible with all Rosco fog fluids. *\$495.00 plus sales tax from your Rosco dealer.

For your nearest **ROSCO** dealer
Ph (02) 9906626

Write in Reader Service Number: 133

Advertising Index

Active Lighting	80
Amber Technology	21
AON Risk Services	55
ARX	45
Audio Telex	26
Australian Audio Supplies	47,49
AWA	10
Big City Productions	52
Birkart Concert Cargo	63
Brown's Precision Welding	84
Bytecraft	68
Chameleon Touring Systems	87
Clearlight Shows	86,88,89
CMC	41
CMI	33,39
Connections Trader	65,66,67
dB Sound	55
Disco World	85
EAW	17
Epson	29
EVI Audio	4,5,35
Group Technologies	45
GUET	43,31
Infocomm Asia	30
Jands	2,47,61,77
Kayye Consulting	40
Kodak	43
Lots Of Watts	37
Magna	51
Martin Prof. Lighting Aust.	71
Meyer Sound Australia	7
Nightshift Ent Services	79
NSCA	31
Penn Fabrication	53
Production Audio Services	23
Richardson & Devine	6
Rosco	89
School of Audio Engineering	19
SGM	75
Show Lighting Australia	92
Sony Australia	25
Soundcorp	33
Stage & Screen Travel	14
Syncrotech Systems Design	43
Technical Audio Group	8
The Show Factory	83
T-PAC	57
TRC	50,57
Universal Lighting & Audio	91
University of Sydney	50
Yamaha	15

THE P.A. PAGE

KNOW YOUR CONSOLE: Episode 1; The Phantom Menace

By Michael Orland-Lucas

I can remember a time, *not too far back*, when only more expensive consoles gave you the option to supply phantom power to condenser microphones and D.I. boxes. A whole generation of small P.A. system owners with cheaper desks passed through the ranks with only one condenser for high hats and one active D.I. for bass guitar in their mic kits.

The mic was usually something Japanese like an Ibanez that required a "AA" sized battery. I had somewhat more exotic condensers at the time which required special batteries usually only available from camera shops. What a hass trying to park the truck in shopping centers on the way to gigs because I suddenly remembered I needed batteries!

The D.I. would be something like a Jands SM1 D.I. that chewed up 2 x 9 volt batteries at a time. Other D.I.s in the kit, for line level stuff like keyboards, drum machines, whatever, would be passive (requiring no power to make them work) usually containing nothing more mysterious than an isolating transformer with an earth lift switch. Big boys used BSS D.I.s which also required batteries, although a rather expensive modification became available for a phantom powered version.

Expensive studio type condenser microphones came with their own external power supplies. Gradually, phantom power became more commonplace. This entailed applying a DC voltage to the mic cable which would power the mic/DI's electronics. This voltage, as with any spurious interference induced on the way, would then be canceled out at the mixer's balanced inputs. Meaning whoo-hoo! No more * & ^ % batteries!

Peavey, one of the few companies that always prided themselves on their ability to supply absolutely everything within a sound system, originally opted for a system of phantom power based on 24 volts. Many mics became available that would operate successfully on a wide range of voltages (10-50), but many others suffered compatibility

problems. Eventually, a universal standard of 48 volts became the norm.

These days, even cheap, tiny mixers feature phantom power, as the advantages of condenser mics in various applications become obvious. Better equipped consoles feature the option of switching it on or off for each of the mic channels. Budget desks either switch phantom power to groups of channels at a time, such as in many Yamaha consoles, or have what they term "global" phantom, meaning power is switched to all channels no matter how many or few require it. This is not usually a problem.

But sometimes it is.

Only last week, I set up a smaller system for one of our regular clients at a five star hotel. Wired and tuned the vocal mics for foldback, controlled from FOH. Then finished the mic up. Walked out front, muted the system to avoid the phantom power-up bang, and switched on the global phantom. Then went to dinner.

Just before the band went on, I gave the vocal mics a quick check. Great! The lead vocal mic now sounds thin and tiny! Obviously, it's not the mic (a Shure Beta 58A) that's faulty because 1: it was new; 2: it cost a lot (*Regular readers should be twigging to the validity of this logic by now*)

So: change the mic lead, satellite channel, multicore channel, desk channel; band getting anxious, me getting annoyed.

Of course, every time I unplug and replug, BANG goes the system. Eventually I turn the global phantom off to stop annoying everyone - - - and the mic comes good!

Turns out there was a short on the mic's transformer.

While I'm in gig story mode, a few years back, we supplied a sound system for an annual outdoor custom car and bike show. We've actually supplied the system for it every year since, but first time 'round were totally unprepared for what was happening. Cars, bikes, cars with trailers carrying bikes, running over our multicores all day. And

me stressing big time, screaming at organisers, drivers, even packs of bikies, at a time. We tried setting up barricades to block vehicle access, but that didn't stop them, it only slowed them down, as they stopped, moved the barricades and drove through.

As it was an annual event, it was worthwhile for the organisers to arrange a buried dual sewer pipe sized conduit system with a pull through loop of rope for subsequent years. But at the time, I was sure my multicores were being damaged, and it turned out I was right.

Interestingly enough, my new mic multicore, which was the common braid/shield type, was fine until phantom power was applied to any line. There would then be faint crackling until someone stepped on or kicked the cable, which caused loud crackling. Eventually, there was nothing for it but to cut the cable up and use it for monitor split lengths. I could get away with this because we never applied phantom power from our monitor consoles, only our FOH ones.

As with multicores, when using phantom power your mic leads must be in perfect condition. Including untarnished connectors. And you should never use unbalanced leads. You may occasionally get away with jack to XLRs with pins 1+2 or 1+3 connected, but they must never be used with global phantom power.

Most manuals that come with monitor consoles warn against the dangers of supplying phantom power to the same line from two separate sources. Being the type of guy who prefers to leave nothing to chance, I have always disabled the phantom power supply from all our monitor consoles as soon as they go into our hire stock. Interesting to note that if you do this, and your monitor console has a light to indicate phantom is on, it will usually light up any time phantom is applied from the FOH console. Normal.

• Michael runs TPAC, dial +61 2 9799-7219.

Next Month : The Matrix

THE NIGHT IS HIDDEN WITH LIGHT FROM GRIVEN!



IMPERIAL Xenon 4000W Lamp

Powerful single beam outdoor effect. Manual adjustment of beam rotation speed and pan/tilt movement. 0/10V or DMX standard control. 6 pre-set sequences. Fully weatherproofed.



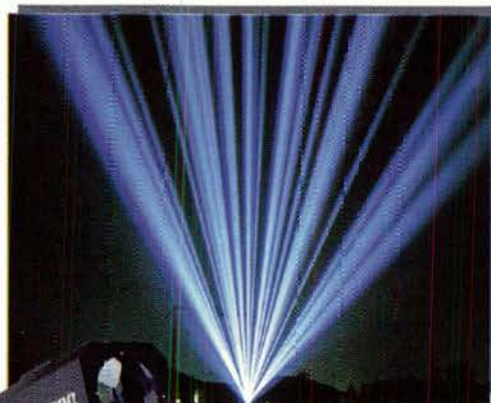
KOLORADO MHD 1800W Lamp

Architectura: colour chaser which combines a wide angle high power floodlight with a CYM colour mixing. New planar mirrors optical system. DMX control, strobe, dimmer, black-out. Automatic function through pre-programmed colour sequences. Fully weatherproofed.



OUTLINER & COLORLINER Xenon 4000W Lamp

Single beam outdoor projector for architectural lighting. Motorised beam angle adjustment. Fitted with frost and black-out COLOLINER allows an outstanding range of 21 colours through dichroic filters. All functions are manually or DMX controllable. Fully weatherproofed.



TRACER HMI 4000W Lamp

Outdoor effect which projects fifteen beams, rotating for 360° and scanning for 210°. Speed and beam angle amplitude adjustment. Strobe and black-out function. Automatic or 0/1CV control. Fully weatherproofed.

GRIVEN



Distributed in Australia by Universal Lighting & Audio
26 Commercial Drive, Southport, Q. 4215 Australia
Tel: 61 7 5532 9922
Sales Hotline: 1 800 548 111
Fax: 61 7 5532 4155
Email: ula@ula.com.au Web: www.ula.com.au

ULA Preferred Outlets

Hire SE QLD
CWM Production Hire
Tel: (07) 3200 5529 Fax: (07) 3200 5529
Scars' Concert Lighting
Tel: (07) 5576 839 Fax: (07) 5520 311

Hire & Sales NSW
The Great Outdoor Lighting Company
Tel: (02) 9966 9888 Fax: (02) 9966 9444

Power and Technology. From 300 to 1200.



New chromed model.

Stage Line: made for You.

Now available for rental from Show Lighting Production Partners:

ACTIVE LIGHTING

1-7 Queens Avenue - Hawthorn, VIC 3122
Ph: (03) 9819 6912 - Fax: (03) 9819 6008
activeit@activelighting.com.au

AVLA

19 Regal Place - East Perth, WA 6004
Ph: (08) 9221 1888 - Fax: (08) 9221 1444
frank@avla.com.au

AVSOUND PRODUCTIONS

Unit 15 28-34 Roseberry St - Balgowlah, NSW 2093
Ph: (02) 9949 9000 - Fax: (02) 9949 9444
info@avsound.com.au

CHAMELEON TOURING SYSTEMS

2A Huntley St - Alexandria, NSW 2015
Ph: (02) 9310 5222 - Fax: (02) 9310 5511
mike@chameleon-touring.com.au

RESOLUTION X

24 Gilman St - Hawthorn East, VIC 3123
Ph: (03) 9813 4686 - Fax: (03) 9813 2466
tim@resolutionx.com.au

LOTS OF WATTS

1 Mary Parade - Rydalmere, NSW 2116
Ph: (02) 9638 0302 - Fax: (02) 9638 0331
admin@lotsofwatts.com.au

OSMOND ELECTRONICS

142/150 Gray St - Adelaide, SA 5000
Ph: (08) 8410 1111 - Fax: (08) 8410 3322
info@osmondelectronics.com

SKYPAK LIGHTING PRODUCTIONS

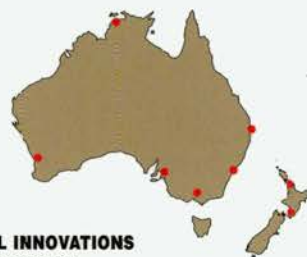
20 Austin St - Newstead, QLD 4006
Ph: (07) 3852 2757 - Fax: (07) 3252 8910
tmb@rainbow.net.au

32 HUNDRED LIGHTING

FO Box 1045 - Bondi Junction, NSW 2022
Ph: (02) 9693 1777 - Fax: (02) 9693 5980
3200LX@s054.aone.net.au

VISUAL INNOVATIONS

4/100 Holmead Rd
Eight Mile Plains, QLD 4133
Ph: (07) 3219 0500 - Fax: (07) 3219 0511
visualinn@universal.net.au



SHOW



Distributor:

SHOW LIGHTING AUSTRALIA Pty Ltd

Adm. Office: 13-15 Bridge Street - Rydalmere NSW 2116
PO Box 480 Rydalmere NSW 1701
Tel. +61 (0) 29898 1666 - Fax +61 (0) 29898 1222
E-mail: claypaky@showtech.com.au

CLAY PAKY S.p.A.

Via Pascoli, 1 - 24066 Pedrengo (BG) Italy
Tel. +39-035-654311 - Fax +39-035-665976
Internet: www.claypaky.it



PROFESSIONAL SHOW LIGHTING