



Australia's biggest risk

CX sees how the Outback Spectacular stacks up

June 1 2007 - July 15 2007. A\$5.50 • NZ\$5.50
AUSTRALIA & NEW ZEALAND

PLEASE NOTE: COVER PRICE INCREASE THIS ISSUE NOW \$5.50 OZ & NZ!

TATTOO FLOPS

Inside a disaster with bad deja vu

LOUD WEDGES

Lotsa choices

STOP IT!

Moving light madness

HOW TO:

Drive a semi!
Manage a business

WIRELESS DILEMMA

Industry lobbies against frequency selloff

AV WARS

This time it's personal, as Hackett draws blood

NEWS! ...and blues, issues and ideas from the darkened control room and the operating position at a venue near you. The community magazine for those who run shows and make things look and sound great! Come inside ...

CUE03 | Entertainment Training Resource

17 NON-STOP YEARS
SINCE 1990 WITH CHANNELS AND CONNECTIONS



More Bandwidth.
More Systems.
More Control.

WINNER of the
ARIA's "URBAN" &
"INDEPENDENT"
categories 2006

Hilltop Hoods



UHF-R™. Premier Wireless Technology.
Redefining wireless for the largest, most demanding applications. Robust, reliable RF performance and flexibility. 6MHz bandwidth with Track Tuning filter technology. Advanced automatic setup features. Intuitive menu-driven system operation. Unparalleled Shure sound. **UHF-R™ is wireless on a whole new scale.**

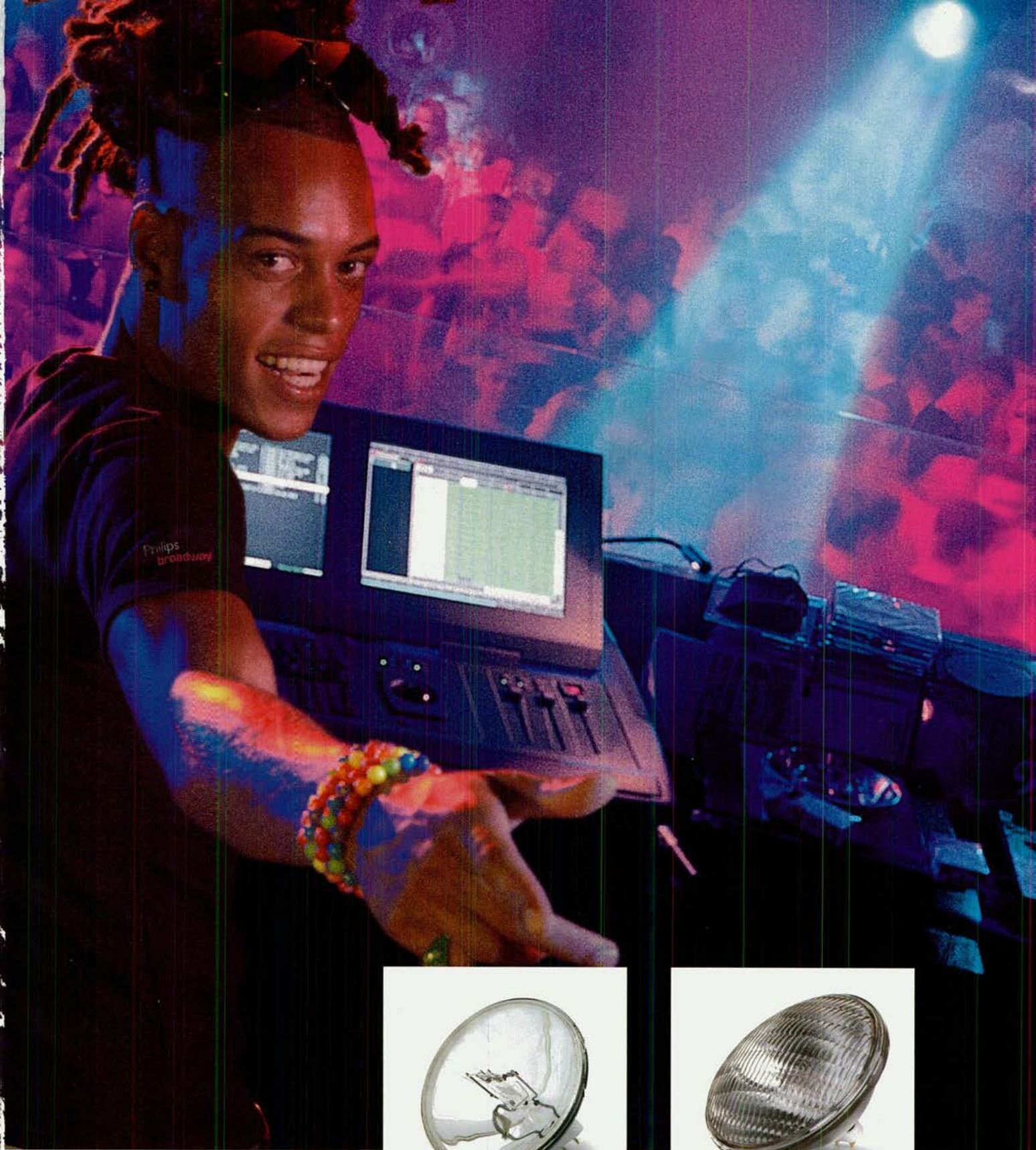
SHURE[®]
LEGENDARY
PERFORMANCE™

Distributed by

JANDS

20 Kent Rd. Mascot NSW 2020 • Ph: (02) 9582 0909 • Fax: (02) 9582 0999 • www.jands.com.au





Simplicity is a range of lamps for every event.

Philips PAR lamps now complete the range of quality event lighting from Philips.

An efficient lighting package with high quality Philips' components, all optically aligned and sealed into a robust lamp. In line with the renowned Philips Entertainment Lighting standards, Philips PAR lamps offer the very best quality, reliability and lowest cost of ownership available today. So when you need a lamp that really performs, choose the PAR lamps from Philips.

www.philips.com/broadway

PHILIPS
sense and simplicity

INSIDE THIS ISSUE

NEWS

10

10 TATTOO TOUR FAILS

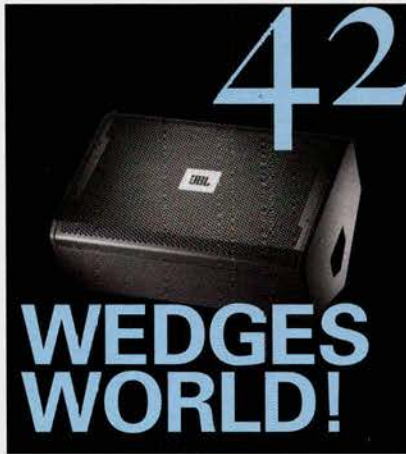
- 10 Crashed and Burned
- 12 Wireless Crunch as Government Plans Spectrum Selloff
- 12 AV Partners are courting
- 18 Staging acquires Boyd AV
- 21 Helping the third world
- 22 One minute with Anna Robb
- 24 Fee Help may arrest backstage staff shortage
- 25 Hilltop Hoods rapped with Shure
- 25 DMX myth busted
- 26 Sony's PCM-D1 Recorder
- 26 Pacific Media identify "New Era" Front Projectors
- 26 Metallica Upgrades to Meyer Sound MJF-212A Monitors and M'elodie
- 28 New e 912 S boundary microphone: more versatile
- 28 AKG intro female mic
- 28 TOA introduces new wireless system
- 30 Profile: industry Dude Peter Zahar
- 30 Roland Digital Snake at Enmore
- 31 EAW Helps DJW Meet Club Challenges
- 31 Yamaha PM5D Version 2

FEATURES



32

WANNA GO TO THE FOOTIE?



42 WEDGES WORLD!



56

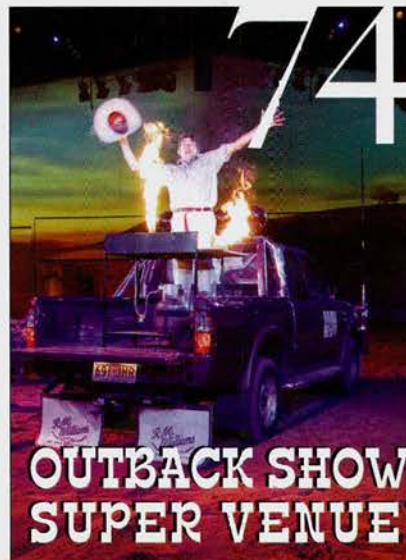
AUSTRALIAN WIRELESS AUDIO GROUP

INDUSTRY BRIEFING



66 WHICH KIND OF TECHNICAL PERSON ARE YOU?

BIG VENUE



74 OUTBACK SHOW SUPER VENUE

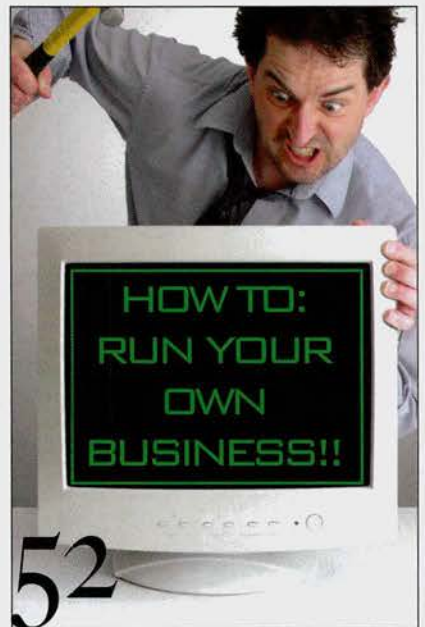
REGULARS

- 40 Duncan Fry - Royalties
- 79 Subscriptions page
- 86 Classifieds

- 35 Production & Event Manager Association of Australasia established
- 60 History - Walking down memory lane

HOW TO

HOW TO: DRIVE A SEMI-TRAILER

52 HOW TO: RUN YOUR OWN BUSINESS!!

52

LITES



70 NO CRACK PROBLEM HERE FOR MASTER ELECTRICIANS

- 66 To move or not to move - The Designer's dilemma

Welcome to the iLive era



Welcome to the era when digital consoles became 'analogue'

With its intuitively laid-out surface, instant access rotary super channel, clear visual feedback on colour screens and superb audio quality, you'll be feeling right at home behind Allen & Heath's iLive concert mixing console.

- Up to 128ins/32mix outs
- Full processing on all ins/outs
- 2-6 stereo effects engines
- Inputs on stagebox or on console
- Low latency Ethersound
- 28, 36, or 44 fader control surfaces
- From: \$40,000



Go 'analogue!'

ALLEN & HEATH

Find out more at iLive-Digital.com or call TAG for a demo. Ph. (02) 9519 0900 e. iive@tag.com.au





ISSN 1448-2010

CX Magazine is published every six weeks

by Julius Publishing Pty Ltd

ACN 117 748 777

Mail: Locked Bag 30, Epping
NSW 1710 Australia.

Call: 1800 462 739

NEW EMAIL: cx.mag@mac.com

Web www.juliusmedia.com

Editor, publisher Julius Grafton

NEW EMAIL: cx.mag@mac.com

call +61 2 9638-5955

Technical Advisors: Andy Mackenzie;

Richard Neville; Rob Zimola

Sales Steve James

NEW EMAIL: cx.mag@mac.com

direct +61 2 9638 5955

Newsagent distributor: NDD

Publishers PA Amalia Portelli

Subs Manager Amy Wilcox

Web by ThinkFirst

Print by Superfine

Design by Bite Communications

JuliusPublish INC

CUE03

Entertainment Training Resource

This magazine contains much information which is a direct resource for anyone studying from the new Entertainment Training Package, named CUE03. From 2006 we will start to map certain articles direct against the relevant Unit of Competency within the package. This makes CX magazine a very cost effective resource for schools, colleges, and universities. Note that we offer a copyright release where articles in CX Magazine may be photocopied and distributed to students within an accredited course.

(GUEST) EDITORIAL

by Buck Freeman

HOLA!

Welcome to the Guest Editorial, so caused by the leadership running away to get married. Must be something in the water. Steve James and Julius are both off getting married just now. Not to each other. That would freak me out. Weird moment: their previous wife was the same person. Go figure! Obviously their new wives are different, so congrats to Selina James and Karen Grafton who inherit two slightly bent guys. Enjoy deadline week, girls!

BUCKING

I've been in and out – mainly out – of these pages since I married an Aussie (Amanda) and learned a whole new set of values more than a decade ago. Working in Australia gave me new appreciation for my Detroit industry training and I had to lift my game since specializing in stage monitors was nowhere near enough. Everyone around me knew about other things, and now I do to. Last bunch of years we've been in Thailand, but I come back d'unda for projects. I talk like a yank but hope that I think like an Aussie. Amanda will always straighten me out.

THE VIBE

I'm pumped to be back as a guest writer for CX, and have every issue going back to Channels at home. Very occasionally the mag has slightly missed the point but mostly it is bang-on the money. The thing I like is the sense of community and the focus on news and industry development. Hey - we can proudly say we work in entertainment now! I think the mag has generally avoided some of the peculiar negative Aussie traits of flippancy and apathy. It stands for something, while other mags just stand for advertising and money. The fact CX does real well in those departments as well says that people enjoy it. 17

years says something must be good. Try some of the north world mags that supposedly cater to our biz. They'll make you hurl then put you to sleep.

BETTER LAWS

You are lucky not to have USA laws here. I just saw a Las Vegas website advertising tickets to see Prince at the 3124 club, built for him in the Rio Grand Casino. For US \$125 you could buy a ticket for a Saturday nite. Only problem is, the Purple one is in London that week. Not saying the Rio people are at fault, since it wasn't their website, but the Australian consumer laws are so much better. Another Broadway website offers show tickets and defaults the number as 10 tickets. So you blink twice and you've paid US \$990 instead of \$99 for one ticket. They do it because they can. I almost bought a car in Sydney and the sales guy put the wrong color on the contract. They couldn't deliver my color and didn't hold me to the wrong (other) color even though I signed the contract by mistake. They refunded my deposit – in the USA, I'd be driving the wrong color.

ON WITH IT

Check the Tattoo story, they bought it in from Fairfax 'cos the lawyers there signed off on it. CX is brave but since the great Noel Crabbe Supreme Court saga that came up about the time I started with Connections, they've been slightly defamation adverse here. Personally I never got the bagpipes thing. Anything I can't mic I don't trust.

*Rock on! -
Buck*

Make the Switch to MPS



MPS is easily set up and controlled from the front panel, or choose from a full line of touchpanels and keypads or the stylish new APADB with Nav Wheel control.

Crestron MPS System integrates a 2-Series Control System, Multimedia Matrix Switcher, Amplifier, Mic Mixer, Audio Processor, and QuickMedia™ distribution center all into a single rackmount package. MPS brings a complete presentation control and signal routing solution to boardrooms, classrooms and auditoriums. MPS works right out-of-the-box; no separate control system, fast programming, and no laptop required for initial configuration.

- >> Out-of-the-box switching and audio control
- >> Discrete program, speech, and record outputs
- >> Dedicated touchpanel preview output
- >> True native HD and high resolution RGBHV signal outputs
- >> Gated mic inputs and mic mixing
- >> Balanced audio inputs and outputs
- >> 12-band parametric equalization and delay
- >> Seamless plug-and-play connectivity
- >> Easy setup with MediaManager Wizard
- >> Compatible with RoomView® Remote Asset Management
- >> QuickMedia™ connectivity



2-Series Control System
Features a built-in Crestron 2-Series Ethernet control system with e-Control® Web server, RS-232, IR, digital input and relay control ports for integration with third-party equipment.



System Switcher
MPS provides high performance switching of video and RGB computer sources. Active matrix switching provides discrete and simultaneous RGB, composite, S-Video, and component video outputs.



Amplifier
Models are available with a choice of 40 watt stereo, 100V amplifier built-in to support screen-oriented or distributed ceiling speaker systems.



2-Channel Mic Mixer
2 gated microphone/line inputs are included on MPS-200. Features 4-band EQ per mic.



Professional Audio
8 stereo inputs accept balanced or unbalanced line-level signals. Discrete PROGRAM, SPEECH and RECORD outputs feature matrix-mixing, 12-band parametric/graphic EQ and speech delay.



QuickMedia™
In addition to conventional video and computer signals, MPS also routes Crestron QuickMedia or balanced video to the second output for display send (requires QMRX) or easy preview.

Some features listed not available on all models. Visit our website for complete product specs on the amazing new MPS-100 and MPS-200.

www.crestron.com/MPS
www.crestron.com.au



HEAD OFFICE Phone: (02) 9737 8200 Fax: (02) 9748 2557 Email: hq@crestron.com.au
NSW Phone: (02) 9737 8203 Fax: (02) 9648 3698 Email: nsw@crestron.com.au
VIC Phone: (03) 9890 8510 Fax: (03) 9890 8512 Email: vic@crestron.com.au
QLD Phone: (07) 3252 4377 Fax: (07) 3252 0677 Email: qld@crestron.com.au

WA Phone: (08) 9234 0200 Fax: (08) 9244 3783 Email: wa@crestron.com.au
SA Phone: (08) 8352 4444 Fax: (08) 8352 4483 Email: sa@crestron.com.au
NZ Phone: (09) 415 9426 Fax: (09) 415 9864 Email: sales@crestron.co.nz



incorporating



In High Performance Installations ...it's the sound that matters



The C-Series from Lab.gruppen

Built on the engineering know-how behind the proven IP Series touring amplifier range, Lab.gruppen C-Series provides the perfect solution for high performance installations. C-Series offers both 4 and 8 channel models with practical power increments from 125w to 1700w per channel. C-Series also offers configurable low impedance or 70V/100V outputs, remote power sequencing and networked monitoring and control – all neatly tucked into just 2RU.

Choose from eight models, each with power/channel density and efficiency that not only reduces initial costs for racks and installation labour, but also reduces hidden long-term costs such as thermal management and mains energy bills.

C-Series – bringing Lab.gruppen's legendary sound quality and reliability to installations – whatever the scale.

Model	4 Ohm	70V	100V
C 68:4	4 x 1700w	4 x 1600w	4 x 1600w
C 48:4	4 x 1200w	4 x 900w	4 x 900w
C 28:4	4 x 700w	4 x 700w	4 x 700w
C 16:4	4 x 300w	4 x 400w	4 x 400w
C 20:8X	8 x 250w	8 x 250w	4 x 500w*
C 10:8X	8 x 125w	8 x 125w	4 x 250w*
C 10:4X	4 x 250w	4 x 250w	2 x 500w*
C 5:4X	4 x 125w	4 x 125w	2 x 250w*

*Requires bridged channel-pairs

Integrated **NomadLink**® ports permit optional monitoring and control of over 3,000 amp channels. Amplifiers communicate with the NomadLinkBridge NLB 60E via CAT-5 cabling in a reliable daisy-chain topology. The NLB 60E provides the bridge between the amplifier and a TCP/IP Ethernet network.

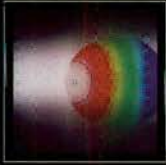
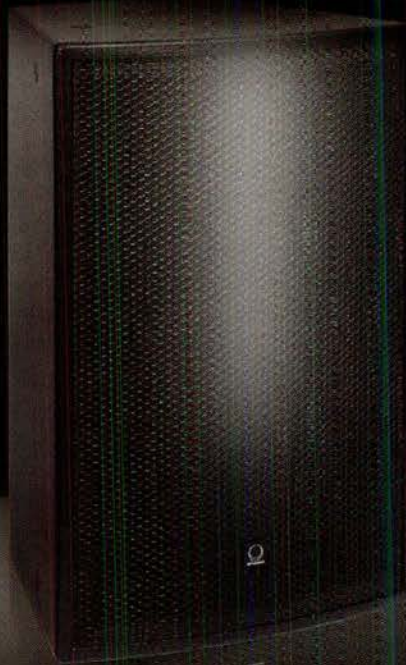


LAB.GRUPPEN
INNOVATIVE POWER SOLUTIONS
www.labgruppen.com



Distributed by Audio Telex Communications Pty Ltd. 1 Clyde Street Silverwater NSW 2128 Australia
 NSW Tel: (02) 9647 1411 VIC Tel: (03) 9890 7477 QLD Tel: (07) 3852 1312
 WA Tel: (08) 9204 0200 SA Tel: (08) 8352 4444 NZ Tel: (09) 415 9426

TCS COMPACT INSTALLATION SERIES



EASE 4.1 data helps to simplify your project planning



Black, white or raw plywood finish or custom colour to RAL specification



Rigging points on five sides for eyebolt fixing



Optional IP54 Weather resistance



Line transformer options for 100v and 70v line systems



Legendary Turbosound premium audio quality



13-ply rugged birch construction



Multiple bracket options & OmniMount™ compatibility



Speaker/barrier strip or gland on IP version



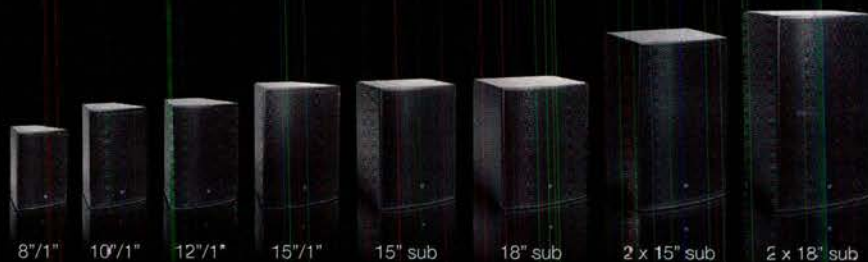
HF protection reduces risk of driver damage

The new TCS Compact series of installation loudspeakers from Turbosound covers all the bases. Choose from the widest range of options – two-way systems, bass cabinets, custom colours, multiple rigging points, 70v/100v line transformers and IP54 weather-resistant rating. Add high quality birch construction, a choice of Turbosound proprietary horn options including Converging Elliptical Waveguides™, and a range of wall and ceiling brackets plus OmniMount™ compatibility for a truly contractor-friendly range. TCS Compact gives you the freedom to match the speaker system to your project.

Download industry-standard EASE 4.1 data from www.turbosound.com to help you specify and present your project as quickly and easily as possible. And Turbosound's legendary sound quality and high frequency protection systems ensure that your next installation will sound great and be trouble-free.

TCS Compact series loudspeakers: Whatever you want them to be.

www.turbosound.com



8"/1"

10"/1"

12"/1"

15"/1"

15" sub

18" sub

2 x 15" sub

2 x 18" sub

Turbosound



Distributed by Audio Telex Communications Pty Ltd, 1 Clyde Street Silverwater NSW 2128 Australia
 NSW Tel: (02) 9647 1411 VIC Tel: (03) 9890 7477 QLD Tel: (07) 3852 1312
 WA Tel: (08) 9204 0200 SA Tel: (08) 8352 4444 NZ Tel: (09) 415 9426

NEWS

DEVICES, PEOPLE AND CONCEPTS

TATTOO TOUR FAILS

Philbie Lewis hasn't had a tour like it, and doesn't want another one. He was one of two production managers for the Tattoo Spectacular 2007 which ended early because the money dried up and shows were cancelled.

Before the Perth dates it was apparent that cash flow was an issue, and this was aggravated by many suppliers wanting payment in advance. It appears that the production community decided to keep short accounts for this tour. The first Perth show ran to a half house, and the second was full. It appeared that things were kind of OK, except that at least one supplier was not paid and had arranged a guarantee from the box office in Perth before the show. That guarantee became worthless when a financier took legal action to freeze the funds.

Trucks left Perth and headed east, and the build up was into its first day at Acer Arena in Sydney when some crew downed tools. "I'd never heard of that happening before, but I don't blame them", said Philbie, who had become the middle man between Mr. Jewel and his suppliers, including TDC, Chameleon, System Sound,

ATS Logistics and Norwest Productions.

Philbie would get news from Kerry Jewel, then call the production suppliers who would be less than happy to be hearing things second or third hand. Mr Jewel was not making those calls.

Sydney started to look dubious when an entire afternoon passed with no work done, and who can blame anyone other than the producer? He was busy blaming the financier, and all this was conveyed through the hapless Philbie Lewis to the production suppliers.

Eventually the entire tour stopped cold, and the equipment went home. The performers were ejected from their accommodation when payments stopped and the Tongan Royal Corps of Musicians were reduced to being billeted with the Tongan Community.

The list of people not paid stretches down the page and they include Philbie who is down two weeks wages plus costs. "It's fair to say it was a bad week", he added.

Red Ink Tattoos: Kerry Jewel is an entertainment theatrical entrepreneur with a string of misses to his name, according to Paul Bibby.



CRASHED & BURNED





An entire LED wall was written off when the truck ran off the road returning system to Bytecraft from NSW. Lucky escape for driver and also for tours since the accident was a positioning trip. Less lucky for Crusty Demons in WA where a truck bullbar dropped and resulting sparks set off the fuel tank.

DELTA: The best moving head LED colour changer in its category



The Lighting Company



-  Full colour LED technology
-  370 lux / 5m: the brightest colour changer in its class
-  3 interchangeable lenses
-  3-axis movement
-  Linear control of colour temperature
-  No colour separation effects
-  IP65 protection
-  Programmable automated playback
-  Master / Slave



lighthouse
distribution

Exclusive distributor of DTS

Sydney (02) 9741 4377 Melbourne (03) 9897 3205 Brisbane (07) 3252 1259 Perth (08) 9204 0200 Adelaide (08) 8352 4444

www.lighthousedistribution.com.au



incorporating



WIRELESS CRUNCH AS GOVERNMENT PLANS SPECTRUM SELLOFF

POSSIBLE END OF WIRELESS MICROPHONES IN 2012 IF NOTHING DONE

The audio industry is in a growing state of alarm as the deadline for the end of the analogue TV network approaches and with it the probability that the frequencies will be sold off. The so-called 'Digital Dividend' happens once the TV networks are forced to switch off current analogue transmitters and in the UK this required Government assistance for consumers to acquire set top boxes.

In Australia the deadline is currently 2009 but no one expects that to happen since there are countless ordinary TV sets in use. But a date will arrive, mooted as 2012 and from then use of wireless microphones and in-ear systems will be severely

constrained. These units may currently be operated with the frequencies interleaved amongst the analogue TV spectrum. Entertainment use is currently legal via a class license.

An alliance of importers has been established under the umbrella of the Australian Music Association (AMA), whose members rely on wireless technology. The Australian Wireless Audio Group (AWAG for short) has commenced discussions with government and allied user groups such as SMPTE.

AWAG have the full support of the AMA who have been successful at lobbying governments in the past.

They have been incorporated for 30 years and are a truly representative industry peak body.

Audio importers such as Syntec, Jands, Technical Audio Group and others are very concerned, and with due reason – the use of wireless for audio is widespread across the community, particularly in churches and schools. They estimate around 30,000 wireless systems are sold each year, and that there are more than 100,000 systems in use.

AWAG are presenting a cautious and measured argument, and are keen to emphasize the loss of amenity across the community any such shutdown will produce. CX

CX says that wireless users will continue to operate their equipment after analogue TV is switched off, mainly ignorant of any changes to legislation. This would present a problem to a Government who sell spectrum with possibly 100,000 users polluting the airwaves. With a possible outcome involving billions of dollars, how would a buyer like a telco respond to innocent but renegade users across the country? We suggest that once the Government becomes aware of the issue, they will have a duty of care to advise any prospective buyer of the spectrum that no one can guarantee clear use. It is possible that so far, the Government is unaware of the issue

AV PARTNERS ARE COURTING

THE LATEST CHAPTER IN THE AV WARS HAS GOT IT ALL, SAYS JULIUS GRAFTON

Gary Hackett's final day at Staging Connections passed quietly in 2006. Last to leave the Lillyfield HQ of the now international audio visual conglomerate, he cut up his company creditcard and activated the alarm system. He didn't say goodbye, because he wasn't allowed to. He drove quietly home to Wahroonga in Sydney's north, well compensated from his earlier sellout of equity in the market leading company.

Now the co-founder of Staging Connections is back in business after a one year non compete clause in his contract expired.

These days Staging Connections is a public company in its own right, having been part of AAV. It is aggressively acquiring businesses such as Bytecraft (\$42.5 million) and ETF who operate trade shows including ENTECH. Staging Connections Group Limited is currently raising further funds on the share market for more acquisitions, possibly offshore. They are driven by growth through acquisition, and the

share market is responding by pushing the share price towards \$2 – double of that a year ago.

Staging have brought in some fresh talent in the form of well respected industry guru Paul Kenny, and appointed former ETF CEO Ben Ashton as Chief Operating Officer. Ashton comes with good credentials, having satisfied PBL who were the previous owners of ETF.

So why is Gary Hackett re-entering the industry? He drove away with many millions of dollars – as much as \$12 million - and doesn't really need to work.

It appears personal. In his last months at Staging Connections, Hackett was isolated or sent to exile and banned from communicating with staff. He did indeed fall out with some on the board; and they certainly did assist him to leave. He isn't talking about those days, and after a relaxing year where he took up bike riding and built a house, he is back doing what he says he loves.

AV Partners is his new vehicle and it

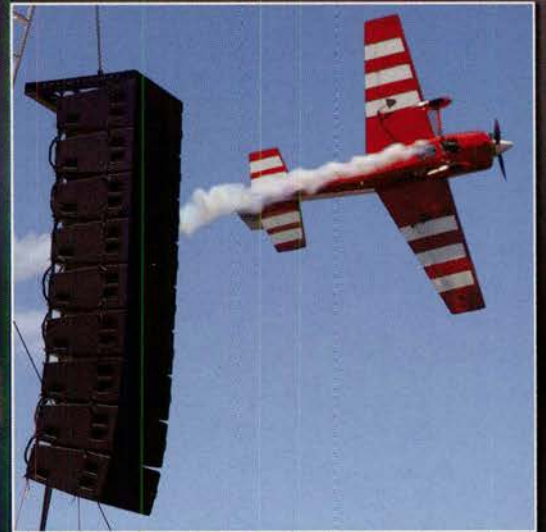
is aimed directly at Staging Connections' heartland, the five star hotels. Its first move was to join with the new operator of audio visual on Hamilton Island, Phil Delangen. Hamilton awarded the lucrative contract to Delangen who formerly worked for Staging Connections at the island. The Staging crew packed up, emptied their rooms and drove their vans onto the barge and off the island, as the new operation started.

(continued on page 16)



Gary Hackett.

KUDO KNOCK OUT!



KUDO FLYS HIGH - RED BULL AIR RACE 2006

- WORLD DEBUT IN 2005. OVER 2000 KUDO NOW IN THE RING.
- 1000 ROUNDS WON ACROSS ALL CATEGORIES FROM LIGHT TO HEAVYWEIGHT.
- WANT SOME UNBEATABLE PUNCH FOR YOUR NEXT SHOW?

KUDO - ULTRA POWERFUL PACKAGED DESIGN, ULTIMATE FLEXIBILITY AND **DOSC** HERITAGE.
PREPARE TO BE KNOCKED OUT - VISIT THE **KUDO** EXPERIENCE AT WWW.L-ACOUSTICS.COM.



WWW.L-ACOUSTICS.COM

DISTRIBUTED IN AUSTRALIA & NEW ZEALAND BY RANDOM AUDIO PTY LIMITED
WWW.RANDOMAUDIO.COM.AU • TEL +61 2 9667 3411

nuQ systems

Turbosound

Choose powered or non-powered options: the result is the same



Flexible portable corporate systems made easy with effective array hardware

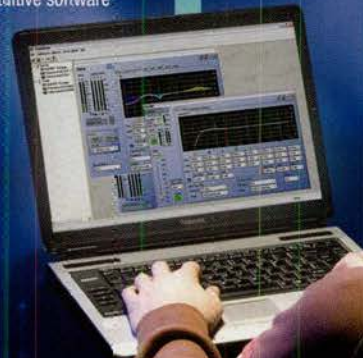


Symmetrical shape enables mirror-image floor monitor use



System control and amplification either built-in or external

Control and monitor all networked devices with a PC and Turbosound's intuitive software



YOU'RE IN CONTROL

NuQ systems are fully integrated networkable sound reinforcement packages designed for portable professional audio applications. They are offered either as digitally self-powered units or as discrete loudspeakers used in conjunction with Turbosound loudspeaker management systems and Lab.gruppen power amplifiers. Whichever format you choose, performance is consistently superb.

TurboDrive™ software gives reliable real time, intuitive control and monitoring either of individual devices or all of the controllers and powered speakers on a BVNet network.



NuQ 15
15"/1.4" F0H or foldback, passive/bi-amp or self powered



NuQ 12
12"/1.4" F0H or foldback, passive/bi-amp or self powered



NuQ 10
10"/1" F0H or foldback, passive or self powered



NuQ 8
8"/1" F0H or foldback, passive or self powered



B15
15" front loaded subwoofer, passive or self powered



B18
18" bandpass subwoofer, passive or self powered

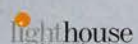
Turbosound www.turbosound.com



Distributed by Audio Telex Communications Pty Ltd. 1 Cyde Street Silverwater NSW 2128 Australia
NSW Tel: (02) 9647 1411 VIC Tel: (03) 9890 7477 QLD Tel: (07) 3852 1312
WA Tel: (08) 9204 0200 SA Tel: (08) 8352 4444 NZ Tel: (09) 415 9426



incorporating



AV PARTNERS (from page 12)

When Hackett announced he had partnered with Delangen, AV Partners drew first blood against Staging Connections.

Now Hackett is busy visiting his former clients and renewing acquaintances. He's been seen at Crown Casino, one of Staging's flagship accounts. With no external network or office overheads he is arguing that he can equip and staff an onsite audio visual operation within any venue and presumably deliver either greater margin to the venue, or (less likely) lower costs to the venue's clients. Whether he can back it all up and support it is another question.

Gary Hackett is razor sharp smart and aloof. He appeared more interested in corporate machinations and deal making in his Staging

Connections days, and his return to audio visual is either his true nature revealing itself or a surgical strike against the board of Staging Connections Group. In either case, he will win some accounts and they will be former Staging Connections sites.

Within the industry there is a view that this is a bit rude. Hackett was well rewarded for his efforts, and willingly took a fair price for this business. He is good at running a vendetta – indeed this magazine was banned from Staging Connections in his latter years. Emails to and from our domain were blocked on the Staging Connections server.

Meantime former Staging executives Peter Kolevas and Ian Whitworth are continuing to build their new business, Scene Change. Unlike Hackett they never had equity in Staging, and can be considered fair



Rob Armstrong.

competition. They have announced a new Adelaide operation headed by Rob Armstrong, a seasoned AV battlefield commander. A lifelong Adelaide local, Rob was until recently Venue Services Manager at Staging Connections, in charge of their in-house hotel operations.

Scene Change says there's nobody in a management position who didn't start out loading roadcases from a Hi-Ace into hotels at dawn. They have also opened in Hobart and Wollongong and are positioning as full service providers with premises and inventory.

While Staging is under open assault from its former management, the rest of the field is expanding at a great rate. Everyone wants corporate AV work, because it pays well.

Staging Connections Group is very strong, dominates the market, and is moving in new directions with large screen work, courtesy of Bytecraft. Their recent acquisition in Dubai positions a lot of compatible inventory in a growth market. The same screen modules can be shipped from Australia or Dubai, into growth markets across Asia.

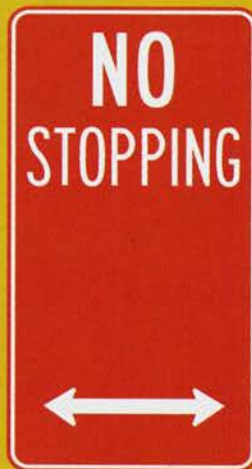
After some questionable decisions taken by former management, Staging have settled down and are building strong morale and synergies with their new Bytecraft cousins.

One of the more fascinating spectacles of our time is sure to happen next February, when Staging's ENTECH runs in Sydney. Exhibitors are rushing the trade show, mindful that they want Staging Connections to buy their goods. Or mindful that Staging already do, and by missing the show they send the wrong message. In the history of trade shows, we know of no similar set of circumstances.

www.avpartners.com



9am
Wednesday
June 13th



9pm
Thursday
June 14th

At Lots of Watts there'll be 'No Stopping' for 36 hours.

Yes, it's that time again when Lots of Watts' Rydalmere store holds their huge 36 Hour Sale.

From 9am Wednesday June 13th, right through to 9pm Thursday June 14th, come and grab a bargain on ex-demo stock, ex-hire equipment, and traded equipment.

And while they're in the spirit of things, they'll even have some new stock on sale!

The Lots of Watts 36 Hour Sale. From 9am June 13th to 9pm June 14th.

AUDIO • VIDEO • LIGHTING

2 Bridge Street, Rydalmere NSW 2116 Tel: 02 9638 0302 Fax: 02 9638 0331
Unit 3/6 Dell Road, Gosford West 2250 Tel: 02 4325 0055 Fax: 02 4325 0800
sales@lotsofwatts.com.au hire@lotsofwatts.com.au www.lotsofwatts.com.au

Lots
of
Watts



• PM5D • M7CL • LS9

DIGITAL MIXING CONSOLES



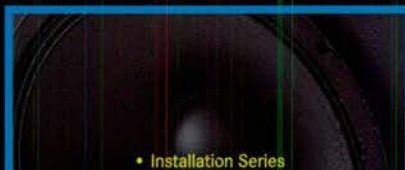
• DSP5D • DME Series • SP2060 • SPX2000

DIGITAL SIGNAL PROCESSORS



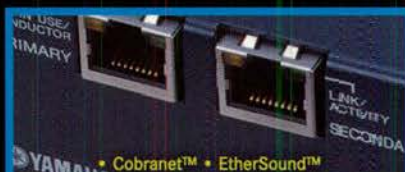
• Tn Series • PC-1N Series • P Series

POWER AMPLIFIERS



• Installation Series

LOUDSPEAKERS



• Cobranet™ • EtherSound™

NETWORKING

Yamaha Digital Mixing Consoles and Commercial Audio equipment are available now exclusively through certified Yamaha Commercial Audio Agents:

NEW SOUTH WALES

- A1 Audio & Lighting (02) 4957 8288
- Coda Audio (02) 9693 5650
- Forefront Productions (02) 9475 0456
- IJS Concert Sound & Lighting (02) 9933 6603
- Lots of Watts (02) 9633 0302
- Lots of Watts (Central Coast) (02) 4325 0055
- The P.A. People (02) 8755 8700
- Rutledge Engineering (02) 8596 5800
- Soundcorp (02) 8596 5855
- Sound on Stage (02) 9281 0077

QUEENSLAND

- Brisbane Sound (07) 3257 1040
- Dominica Sound (07) 5593 8193
- IJS Concert Sound & Lighting (07) 3852 2646
- Musiclab (07) 3332 8188
- Rutledge Engineering (07) 3620 8000
- Stage & Audio (07) 4922 8833

SOUTH AUSTRALIA

- Rutledge Engineering (08) 8121 1593

TASMANIA

- Production Works (03) 6231 1505
- The Sound Company (03) 6330 1477

VICTORIA

- Entertainment Warehouse (03) 9315 1255
- Monaco Sound (03) 9850 2099
- Rutledge Engineering (03) 9488 1500
- Soundcorp (03) 5694 2600
- Warehouse Sound Systems (03) 5417 4866

WESTERN AUSTRALIA

- Kosmic Sound (08) 9204 7577
- Rutledge Engineering (08) 9208 4300

We want to quote you.

From digital mixing consoles and processors to power amplifiers and loudspeakers, Yamaha Commercial Audio manufactures and distributes every major component you need for a successful installation. That means all your installation needs are in a single package direct from one manufacturer and configured by our exclusive agents at the most competitive price.

For your next installation,
don't look elsewhere.

Call Yamaha now. (03) 9693 5272



YAMAHA

commercial audio

For more details on Yamaha's complete Commercial Audio solutions, go to:
<http://www.yamahamusic.com.au/products/commaudio>

Yamaha Music Australia, Commercial Audio Division
P.O. Box 268, South Melbourne VIC 3205

CARRIAGEWORKS IS QUIETLY OPENED

\$49 million so far and Arts NSW hope the Premier doesn't notice

Arts NSW is the state department for all things of a creative nature that are funded, and also the custodians of Carriageworks, a major investment in performing arts infrastructure. It comprises several renovated railway sheds in Everleigh, an inner city location that is accessed via quiet residential streets.

The finished project opened in January with a season for the Festival of Sydney and not much was heard since. CX heard of it through mainstream media who in turn gave the project a cursory look. We went to see for ourselves, it took many weeks to get an appointment with one of the 7 staff.

It is impressive in finish, and once inside has nice ambiance. The main performance space is a box with sound treatment, a flexible seating system for 800 and not much more. Noise and vibration treatments hold it isolated from the nearby major rail corridor.

A second space for around 300 makes up the performing areas, and there are several rehearsal spaces with dance floors, and a really neat theatre workshop out the back.

Management say that there is funding for operation into the near future, but after that an adjoining railway shed needs to be developed and commercially leased to produce whatever operating subsidy Carriageworks needs. That renovation in turn needs to be funded and there is talk of a developer – but whether it can



work remains to be seen.

As with some government projects, this one has smoke and mirrors. The word around the industry is that Arts NSW are shy about Carriageworks because the Government in NSW has less considerably commitment to the performing arts since the latest premier was appointed. The Arts industry buzz is that he is more interested in meat pies and football than the former NSW premier who was pro-arts. The \$49 million spent so far at the behest of the former premier now needs to be propped up with ongoing subsidies.

There is complexity with the precinct under the guidance of a thing called the Redfern and Waterloo Authority.

To date the complex has one ongoing partner, which is Performance Works.

Subsidies for performing arts complexes are a fact of life, and it's known that the harder a complex works the greater the subsidy. This cruel paradox sometimes results in terrific facilities being hard to book, and



at the present time that would be a shame if it applied to Carriageworks.

Those familiar with Sydney will recognize that Carriageworks is located on the other side of the main rail line from the Australian Technology Park. ATP is the location of a new studio for Network 7, and has a 98% lease rate for its commercial spaces. The convention centre located there is less successful, but it well regarded.

Carriageworks and the ATP will eventually be joined with a pedestrian bridge, until then Carriageworks is very hard to find, and on street parking is non-existent. CX

CX says that Carriageworks is a poor way to add new performing arts infrastructure. It is expensive to noise isolate a large space within a heritage building. It has very poor public access. This is tax money badly spent. Contrast this project with Sydney Theatre - an icon venue that cost less to build.

STAGING ACQUIRES BOYD AV

Staging Connections Group Limited has agreed to acquire the rental and staging division of Boyd Audio Visuals in New Zealand from Boyd Reynolds Group Limited (Boyd) for A\$0.9 million. Boyd is a long established audio visual and staging services company in New Zealand.

Chief Executive Officer, Michael Gardner, said the acquisition of Boyd, which has operations in Auckland, Christchurch and Wellington, would enable Staging Connections to expand its footprint in New Zealand and position itself as a national audio visual and event staging services provider.

The acquisition is expected to generate an additional \$1m in annual

revenues for Staging Connections' New Zealand operations, and to deliver a number of synergies in New Zealand, as well as operational and infrastructure efficiencies.

The acquisition is also in line with Staging Connections' strategy of focusing on transactions that strengthen the company's service offering, market penetration and geographic reach, Mr Gardner said.

"Boyd has a solid client base in the events industry as well as in the corporate, education and government sectors and we look forward to offering those clients and sectors an expanded range of integrated end-to-end event services," Mr Gardner said.

- Patrick Doyle has been appointed General Manager of Staging Connections Victoria. Patrick's twenty year career in event

management and production includes producing the opening and closing ceremonies for the 12th FINA World Championships – the global swimming event which was recently delivered innovatively within an entertainment stadium – as well as all of the special events related to the championships.

- Frazer Watkins returned to Staging Connections earlier this year as Sales Manager in Victoria. Frazer who was most recently National Business Manager – Exhibitions at ExpoHire, has 15 years experience in events in event sales, business and account management. Frazer's experience and focus is on working closely with clients to create partnerships and delivering best practice in event planning, resourcing and delivery. CX



NOW AVAILABLE NEW TAPCO THUMP ACTIVE SPEAKER RRP\$899

High-Performance Audio Without the High Price Tag

Designed by the same team that produced Mackie's best-selling compact active loudspeakers, the THUMP TH-15A Active Loudspeaker provides amazingly accurate response from 20kHz all the way down to 40Hz, giving it just the right amount of punch. All-new Class D circuitry drives its custom, high-precision 15-inch woofer to greater volumes with less heat than is possible with competing designs. On-board electronics include full system protection packed into a durable polypropylene enclosure, making TH-15A the most lightweight powerhouse in its class. Check out the new Tapco Thump at your local Tapco Dealer today.

- 2-way, bi-amplified, optimized active loudspeaker system
- Ported, bass reflex design for enhanced bass performance
- Frequency Response (40Hz -20kHz)
- 24dB/octave crossover at 3kHz
- 15" high-precision LF driver
- Low-frequency over-excursion protection
- 1" compression driver
- 180W LF amp / 60W HF amp
- XLR Mic/Line input and pass thru
- 3-Band EQ with Sweepable Mid for clarity (with bypass)
- High SPL Output/Low Distortion
- Ideal for pole-mounting or stage monitor position
- Tough, impact-resistant polypropylene enclosure
- High-density adiabatic fiberfill absorbs internal reflections
- Convenient integrated handles in both sides and top
- Lightest, most portable Active Loudspeaker in its class



Distributed by Australian Audio Supplies Freecall 1800 50 20 15 or visit www.ausaudio.com.au
www.tapcoworld.com



incorporating



LIGHTER & LOUDER

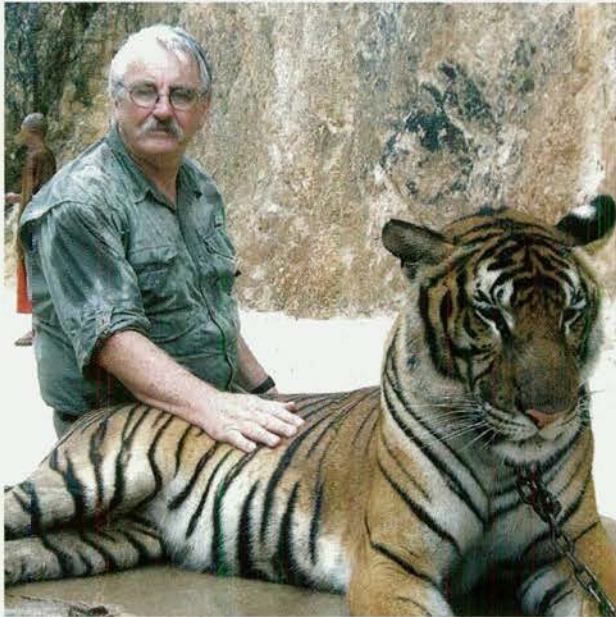


Introducing the **522A.**

With almost twice the power packed into a lighter box, the **NEW 522A** and 525A make a formidable addition to the **ART Series**.

Model	Drivers	LF Amp	HF Amp	Max SPL	Weight	Dimensions (mm)
ART 310 A	10" + 1"	300W	50W	127dB	12.4kg	537H 337W 315D
ART 312 A	12" + 1"	300W	50W	127dB	19kg	680H 405W 345D
ART 315 A	15" + 1"	300W	50W	128dB	20kg	680H 405W 345D
ART 322 A	12" + 2"	350W	50W	128dB	23kg	680H 405W 345D
ART 325 A	15" + 2"	350W	50W	129dB	24kg	680H 405W 345D
ART 522 A	12" + 2"	500W	250W	130dB	18kg	680H 405W 345D *NEW
ART 525 A	15" + 2"	500W	250W	131dB	18.5kg	680H 405W 345D *NEW
ART 700 AS	15"	800W	TBC	130dB	37kg	590H 435W 600D

**All power specifications measured in continuous RMS power power*



HELPING THE THIRD WORLD A Sydney theatre identity gets things moving

It's a long way from the stage at Riverside Theatre to the Democratic Republic of Congo, but that's where Riverside Operations Manager Col Peet went recently. He decided to do what he could to assist in rebuilding the shattered country which was consumed by a natural disaster several years ago when a volcano swamped the district of Goma in lava.

"There's been no government there for 20 years, along with conflict", he said. Water supplies and rain around Goma are contaminated with sulphur from the volcano, so the United Nations has portable purification plants for a million or more people. The neighboring country of Rwanda had genocide where one million people were killed in one hundred days. Everything in Africa suffers from deep and complex problems.

Col went to help people, and will return for a long project later next year when he retires from Riverside. So what can a theatre guy do there?

"I taught some guys how to build from wood", he said, "and left tools with them at the end. One guy, a hospital carpenter, was milling his own wood from logs with a saw, adze and plane. That's all he had. I also met a builder who had built a two story building without ever seeing a spirit level. He made do with a string level and a 2-3-4 triangle."

As part of a larger group, Col saw simple skills like craft were all useful and everyone who went left behind something of value to the locals.

Like many people, we at CX would like support children and communities in Africa but are unsure where to start. Unlike Col, we don't have the time at this stage to actually go and do things.

Col suggests starting with Compassion Australia and Partners International, two aid organizations that are doing things he has seen with his own eyes. He says they will take small donations or let you sponsor a kid, a food program or a community – and you can go on an aid trip as well. You don't need to be religious to go on a mission trip, Col says.

Meantime aside from the ravages of Aids, war and malnutrition the really big single thing that the western world can do to help all Africans is to build roads. With roads assistance can arrive. Help our next national leaders to understand that if you get a chance.



ENTeCH

PRO AUDIO AUDIO VISUAL BROADCAST LIGHTING

Industry Exhibition & Conference

11th – 13th February 2008

Sydney Convention & Exhibition Centre

www.entech-tradeshow.com

Australia's unique showcase of new products, systems and services for the professional entertainment technology industry

Exhibitions and Trade Fairs Pty Ltd (Sydney)

Tel: +61 2 9556 7999

Fax: +61 2 9556 7979



DVA

Digital Vertical Array



DVA T4 Array

Active 3-Way Line-Array

- 1 x 8" (RCF) Neodymium Woofer, 64mm Voice-Coil, Bass reflex configuration
- 1 x (RCF) 6.5" Mid-Driver, horn loaded with Phase-Plug
- 2 x 1" driver with constant directivity horn
- digital Class-T 3-Way Amplifier. 420 Watt/RMS
- integrated DSP, 24-Bit/48KHz
- State of the Art 24 Bit AD converter
- digital Power management
- 100°x15° covering angle (single speaker)
- SPL peak 128dB
- frequency response 80-19,000 Hz
- rigid PP housing with integrated Flyware
- weight 13.2Kg/31Lb
- Dimensions 580x240x327 inc. Flyware.

DVA Subwoofers



S-10
Active 18" Sub-Woofer



S-20
Active 2 x 18"
High Power Sub-Woofer

For more information:
www.cmi.com.au



ONE MINUTE WITH ANNA ROBB

What do you do?

I am a stage manager for Cirque du Soleil at the Mirage Hotel in Las Vegas.

The show is called LOVE and it is all to the music of the Beatles.

What's the best/worst part of your job?

The best part of the job is calling the show. Definitely the most high risk calling I have ever done. With all the automation and acrobatics, if you call something at the wrong time you can do a lot of damage to the machine or potentially injure an artist onstage. It keeps you on your toes. Worst part is hearing the American accent all the time.....

Favourite tool you can't do without?

It's stupid, but I need to have a pencil in my hand when I call the show. I feel lost if I don't have it in my hand. And my cow bell, which I like to play before the show to the sound guys. It was my prize for guessing the humidity correctly 6 times in a row.

Best gig ever?

One of my favourites was a show that I did with Urban Theatre Projects in a warehouse in Granville. It was called The Longest Night. It had no script. I was the stage manager and lighting op.

What do you do after work?

Well it is 1am by the time I get home so not much. Usually have a beer and jump in the pool. It is hot living in the desert so it is swimming weather even in the middle of the night. But on weekends here in Nevada, I go camping, canoeing down the Colorado river or rock climbing at Red Rock National Park. I go nowhere near the Vegas strip unless it is for work.

If you could go back what path would you take? Would you be a sound/Lighting/video guy? A plumber?

My job has taken me to many different places and experiences. I am not sure I would want to take a different path.

How did you get started / big break?

I met a production manager from Sydney named Ian when I was working in Wagga Wagga, completing my uni degree. He was the one who gave me my first job in Sydney and it went from there. It was at Sidetrack Theatre, Marrickville.

How many hours a week do you work?

A blissful 45 hours a week. Makes a nice change from the ridiculous hours I did in Australia.

Worst gig?

The last one I did before I left Australia. Don't really want to mention the name as people who organised it probably read the mag. But if you ask Bill Ainley or Billy Robinson at TDC, (if they are still there) they could probably tell you all about it.

Best personal work trait / value / skill?

My constant desire to challenge myself.

Person you most respect / admire in the industry (and why)?

Lighting identity Paul Collison- because he taught me a lot, not just about the industry, but how to be a good person to work with. He also never made me feel stupid when I didn't know things.

Biggest issue / problem in the industry?

Everyone working too damn hard. Take a break y'all.



MIX WITH THE BEST.



The Yamaha M7CL digital mixing console has an interface allowing you to perform any mixing application faster and more intuitively. Visit our showroom for a demo today. Mix with the best at Soundcorp – Best Products, Best Service and Best Price.



32-Channel M7CL: \$24,000

48-Channel M7CL: \$30,000

Including optional MBM7CL Meter Bridge (as pictured). Soundcorp also stocks a huge range of input/output Mini-YGDAI expansion cards. Call us for your requirements.

M7CL Digital Mixing Console

The time to go digital is now...

If you're planning to build or upgrade a mid-size sound system – installed or portable – now's the time to move up to a top-performance, easy-operation digital system based on the M7CL. This is one digital mixing console that lets you concentrate on sound without being overwhelmed by the technology.

If you've been delaying a move to digital because of interface or operational issues, the wait is over. The Yamaha M7CL Digital Mixing Console offers professional digital console performance and features for live sound in a 32- or 48-channel system that can actually be easier to use than a conventional analogue console. It sounds great, too.



Yamaha Centralogic™

Yamaha's Centralogic interface takes the most direct approach to giving you maximum operational ease and efficiency in a digital console. Rather than trying to simulate the feel and workflow of an analogue mixer, Centralogic goes straight to the heart of the matter, simplifying digital operation to the point where it is actually as intuitive as analogue.



Find The Sweet Spot at Soundcorp

Visit our new Melbourne showroom and compare a wide range of monitors, PA speakers, and the latest Yamaha mixing consoles. The Sweet Spot is Soundcorp's purpose-built audio listening room.

SOUNDCORP

New showroom & The Sweet Spot located:
570 City Road South Melbourne 3205
phone. 03 9694 2600 fax. 03 9694 2626
email: sales@soundcorp.com.au

Sydney Branch Office:
phone. 02 8596 5855 fax. 02 8596 5850



www.soundcorp.com.au

FEE HELP MAY ARREST BACKSTAGE STAFF SHORTAGE

Australia follows the U.K. as having a looming shortage of technical and backstage crew, driven by the high cost of quality training and lack of career publicity. The Stage newspaper reports that the UK could be 30,000 crew short over the next decade. The existing technical workforce there is estimated at 40,000.

While the U.K. is rushing to launch a national qualification framework for entertainment, Australia has had one since 1997, but with very low takeup. Government funded TAFE and University places are scarce, and the few private registered colleges in this sector have struggled to enrol self funded students who have been stung by the difference in fees between the government funded courses and the colleges. A college must charge fees close to those charged by a private school to be viable, despite private schools also attracting a government subsidy not open to colleges.

This may change due to the Australian Government's decision to

allow Fee Help for some college courses from next year. Fee Help replaces HECS and allows students to borrow course fees from the Government, repayable from future taxed earnings. Fee Help is currently available for certain University degrees. There has been no equivalent scheme for vocational courses – until now.

The other Australian Government funding initiative for entertainment technical training is a traineeship under the New Apprenticeships Scheme, and this program has fallen dramatically short of its take-up targets since introduction. Julius Events College, a company associated with this publication, has trained around 12 new entrant Certificate Three trainees so far in 2007 against a generous government allowance of 600.

Fee Help availability is unlikely to result in new colleges, as the barriers to entry are high and rising with additional new standards coming into play this July. These include accreditation red tape, where trainers must carry at least two qualifications but need not have any actual industry experience. An absurd situation exists

where colleges may hire a graduate to deliver training.

Colleges of any size must adhere to rigid standards that require complex administrative and quality systems that often exceed those deployed in universities with thousands of students.

The other significant barrier to establishing a college is the investment in facilities and equipment, which can't be justified with less than 400 students – a number which would then saturate a local market on graduation. The college associated with this magazine relies on the magazine for subsidies and equipment sponsorships. To date, the college has accumulated more than \$1 million in deficits.

Fee Help may well be the saving grace for some colleges, while better industry co-ordination is needed to convince new entrants that entertainment is in fact a 3 billion dollar industry that can produce a highly satisfying career.

The Government say that they will implement Fee Help legislation in the current term of Parliament, which should enable the loans for the 2008 college year.

CX



Norwest Productions



Now with over 60 channels of Shure UHF-R radio mics complete with antenna distribution systems that can solve any RF issue.

AUDIO PRODUCTION AND RENTAL

AUSTRALIA'S MOST VERSATILE RENTAL INVENTORY

Accurate turnkey audio for important shows of any size, anywhere. Olympic Games, Commonwealth Games, Major Events, Corporate, Festivals, Concerts, Theatre and Broadcast.

BRISBANE

Ph: +617 3854 1000
Graeme Whitehouse
SYDNEY

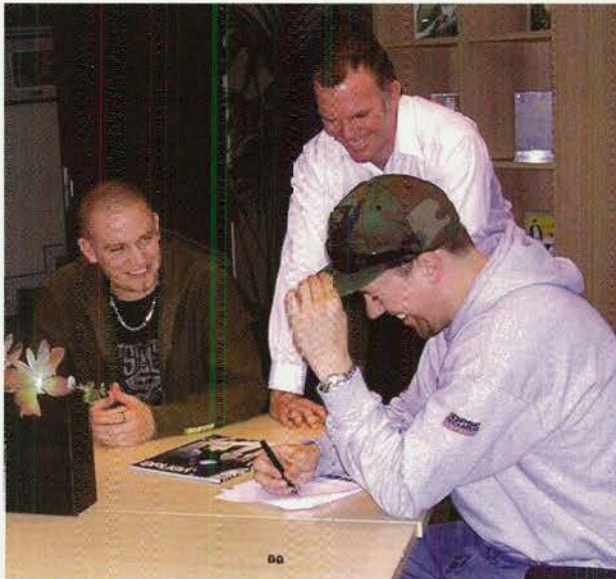
Ph: +612 9737 8522

Dave Rennie

MELBOURNE

Ph: +613 9555 4468
Tim Millikan


- L'Acoustics KUDO (118 cabinets)
- EAW KF760/761 Line Array
- Funktion Resolution Concert System
- EAW KF750, KF730, KF850
- EAW SB1000, BH760 subs
- Acoustic Technologies Blackbird Line Array
- Adamson Y10 Concert System
- Dolby Lake Processor
- Lake Contour, MESA
- XTA DP428, DP226, DP224
- Optocore Digital Network
- LabGruppen fp6400
- Camco Vortex 6
- Crown Macrotech VZ5002
- Yamaha PM1D, PM5d
- Yamaha M7CL, DM2000
- Yamaha O1V/96 (40 consoles)
- Digico D5 112/EX
- Midas XL4, XL3
- Midas Heritage 3000, 1000
- Midas Verona, Venice



HILLTOP HOODS RAPPED WITH SHURE

Iconic Australian hip-hop group The Hilltop Hoods have re-signed with Shure for another two years. The Hilltop Hoods have been raving about their Shure U Series systems for the last three years, and have now upgraded their wireless kit to the new Shure UHF-R Series.

"The new Shure EETA 58 UHF-R microphones & receivers have made a massive improvement to the intelligibility of our vocal sound on stage & in the crowd" commented DJ Debris from the group. "We've received numerous positive comments from punters telling us that that can hear every word clear as a bell!"

DJ Debris also continues to use the Shure Phono Cartridge and DJ Needle citing it as the recognised worldwide leader in high-performance cartridges. 

DMX MYTH BUSTED

UK-based wireless specialists dAFTdATA, Belgium-based Luminex, manufacturers of Art-Net products, leading UK rental company Essential Lighting and French equipment distributor Sonoss, all joined forces to send the first "DMX" wireless DMX signals across the Channel from France to England.

The link up took place between Cap Gris Nez, west of Calais in France, and the famous White Cliffs of Dover in the UK. The distance covered was, according to GPS, 20.82 miles/33.49 Kilometres – believed to be the worlds longest ever wireless DMX signal transmission to date. 



D5 VOCALLS



Debuting the new D5 vocal microphone, establishing new performance standards for live performance microphones. The D5 features an attractive and robust new industrial design with the highest quality and durability standards, along with excellent sound and unmatched feedback resistance for professional musicians.



audioproducts
Group

Call 1300 13 44 00 or visit
www.audioproducts.com.au



SONY'S PCM-D1 RECORDER

Sony's new PCM-D1 portable recorder is designed to produce digital stereo recordings that are completely faithful to the original audio source, including live music and theatrical performances, capturing sound effects and for journalists in the field.

It has built-in condenser microphones in an X - Y configuration with low self-noise and high sensitivity with close to 30 kHz frequency response and WAV recording file format capability. It is powered by four x AA nickel metal hydride rechargeable batteries and charger with battery life at 96 kHz of approximately four hours.

Around \$2,990 inc GST.



PACIFIC MEDIA IDENTIFY "NEW ERA" FRONT PROJECTORS

Pacific Media Associates, the global market information experts on large-screen displays, have defined an emerging class of front projectors that are different in both their technology and their target buyers. The focus is on the broadening variety of new-technology sub-500 lumen models

During the past two years, the front projector market has seen numerous developments of components that are quantitatively and/or qualitatively different from the classic ("Old Era") models. Enabled by advances in lasers, LEDs, imager chips, and other technological changes, these "New Era" models are typically considerably smaller, dimmer, lower-powered, and less expensive than most Old Era models.

As with any early-stage development, this segment is marked by considerable confusion and a broad range of technological combinations. For example, most of the smallest models that incorporate LEDs or lasers are

battery-powered, but at least one (relatively bright) model requires wall power. The only characteristic that all seem to have in common currently is that they all offer less than 500 lumens of brightness.

Pacific Media aims to identify, classify, and quantify the markets for products such as the following types:

- Stand-alone mini-projectors (also known as pocket projectors)
- Snap-on or embedded mini-projector modules for mobile host devices
- Embedded mini-projector modules for "big" host devices
- Lower-end "toy" projectors
- Higher-end gaming projectors
- Personal projectors

Pacific Media specializes in global display market information, with a family of publications like detailed worldwide quarterly updates newsletters on new products and other key industry developments, monthly advertised price tracking, ad hoc analyses, and annual Web surveys of North American end users (including organizations and individual consumers) and both North American and EMEA resellers/retailers.

www.pacificmediaassociates.com

METALLICA UPGRADES TO MEYER SOUND MJF-212A MONITORS AND M'ÉLODIE

"For some reason, we like it loud!"

Legendary metal band Metallica recently upgraded their Northern California rehearsal studio, replacing their old monitors with Meyer Sound's new MJF-212A self-powered stage monitors. The band also brought in six M'elodie ultracompact high-power curvilinear array loudspeakers and a 600-HP compact high-power subwoofer.

"As we started pre-production for the new album we needed PA and monitor upgrades. The speed and ease of set up of the Meyer gear is unbelievable. We truly took the monitors out of the box and plugged them in and we were done. That never happens," says Metallica's equipment manager, Zach Harmon. "Over the years sound companies have struggled to keep Metallica happy. Meyer has managed to meet and exceed the band members' expectations."

Vocalist and guitarist James Hetfield uses a pair of MJF-212A monitors, while lead guitarist Kirk Hammett and bassist Rob Trujillo each use a single MJF-212A.



"The MJF-212A stage monitors are able to cut through and still sound full. I can hear and feel my voice above the wall of Tallica," says Hetfield. "For some reason we like it loud!"

The band's two stacks of three M'elodie cabinets per side serves the whole band well. "The M'elodies are great" says Mike Gilles, the band's studio engineer. "They're loud, clean and transparent, with lots of headroom and excellent dynamics. And they sound very natural, even without any EQ."

"Meyer's self-powered setup really answers the needs of a smaller rehearsal space," adds Gilles. "Setup is easy and flexible, and it's nice to ditch the fan noise and the amp racks, too. Meyer Sound is the obvious choice for any professional. It's great

to have equipment that adapts to the room, instead of the room having to accommodate the equipment."

The band used Meyer Sound's MILO high-power curvilinear array loudspeakers and MICA compact high-power curvilinear array loudspeakers during their 2006 "Escape from the Studio Tour" dates in Estonia and Holland, and were reportedly impressed enough to check out the smaller M'elodie arrays for their rehearsal space. "Metallica demands the best," Gilles concludes. "Meyer Sound comes through with maximum output, clarity, and headroom, whether it's a mega-venue or a personal rehearsal space."

On July 1, Metallica will be out on their "Sick of the Studio 07" tour in Europe with Meyer Sound equipment.

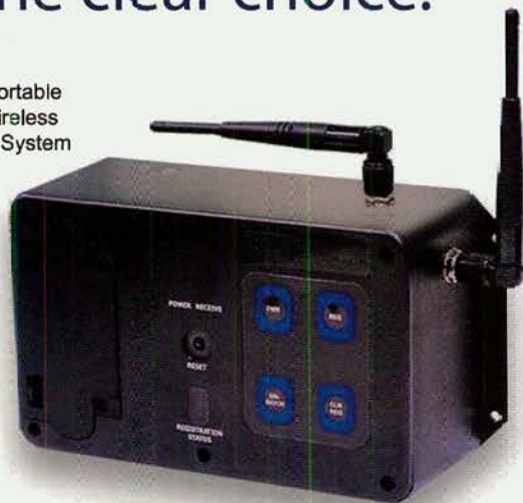
HME

Digital Wireless Intercoms

Many applications: One clear choice.



DX100 Portable
Digital Wireless
Intercom System



Now you can access a high performance wireless intercom system that won't upset your communications budget! The new, digital DX200 Wireless Intercom System from HME provides crystal-clear, secure, and interference free communications.

With its digital encryption and frequency hopping technologies, you'll never have to worry about unauthorized users. Diversity antennas and dual-slot diversity technology maximize performance to ensure the strongest possible signal.

SIMPLE. INNOVATIVE. EXPANDABLE.

The DX200 system is supplied complete with light-weight, rugged belt packs featuring voice prompts, rechargeable batteries and a 4 port battery charger for reliable and cost-effective operation.

Whether it's used at professional sports events, military operations, churches, performing arts or other venues, the DX200's superior digital design and ease of operation make it the **ONLY** choice in wireless intercom systems.

BP200
Belt Pack



DX200 Wireless
Intercom System

WH200
All-in-one
Headset

HME



Murray Tregonning Sales Pty Ltd.
Melbourne (03) 9819 6455

www.mtasales.com.au
Sydney (02) 9310 2799

LISTEN TO THE STAGE MANAGER AND GET ONSTAGE WHEN THEY TELL YOU TO. NO ONE HAS THE TIME FOR YOUR ROCK STAR BULLSHIT. NONE OF THE TECHS JACKSTAGE CARE IF YOU'RE DAVID BOWIE OR THE MILKMAN.

WHEN YOU ACT LIKE A JERK, THEY ARE COMPLETELY UNIMPRESSED WITH THE INFANTILE DISPLAY THAT YOU MIGHT THINK COMES WITH YOUR DUBIOUS STATUS.

THEY WERE THERE HOURS BEFORE YOU BUILDING THE STAGE, AND THEY WILL BE THERE HOURS AFTER YOU LEAVE TEARING IT DOWN.

THEY SHOULD GET YOUR SALARY, AND YOU SHOULD GET THEIRS"

HENRY ROLLINS



NEW E 912 S BOUNDARY MICROPHONE: MORE VERSATILE

Tiny switches have a big effect: audio specialist Sennheiser presents the e 912 S boundary microphone as a configurable version with two DIP switch banks. One switch bank provides four operational functions, while the second bank alters the microphone's frequency response.

The e 912 S boundary microphone is an unobtrusive miking solution for conference tables, altars and lecterns and has been optimized for recording speech at short distances. The prepolarized condenser microphone features a half-cardioid pick-up pattern and a frequency response of 20-20,000Hz. Two DIP switch banks turn the e 912 S into an extremely versatile tool: the user can program the microphone button and the frequency response curve according to requirements.

www.syntec.com.au



AKG INTRO FEMALE MIC

After extensive market research, AKG has designed a high-performance vocal microphone to answer the specific vocal characteristics and frequency patterns of women's voices.

Custom-designed for female performers, AKG announced the sleek new Elle C live performance vocal microphone optimized for the acoustic and ergonomic requirements of the female vocalist.

"In looking at the professional audio market in general and the microphone market specifically, we realized there are very few specialized instruments for female performers," explained Stefan Gubi, President of AKG. "We wanted to design a high-performance microphone fine-tuned for the needs of a female vocalist both in terms of sound quality and physical appearance. The result of a detailed market research project, the Elle C delivers a technologically-advanced microphone solution to a largely unaddressed, yet vast marketplace of female vocalists."

When researching the female vocalist marketplace, AKG addressed how women viewed the current live performance microphone offerings and inquired about the acoustic performance of her current microphone choice. Asking questions to get an accurate picture of her acoustic and aesthetic likes and dislikes about each of the models currently available, AKG was able to compile reliable data about what is important to the female performer and how to address her specific live performance needs.

The resulting Elle C microphone features a frequency range of 60 to



20,000 Hz and premium 24-carat gold plated transducer case for optimum conductivity. Not only is the sonic quality of the microphone aimed at complementing the female voice, so too is the aesthetic look of the Elle C. Offering a slender and elegant silhouette, the lightweight unit is available in a high-gloss metallic or white pearlescent finish to visually complement any performance.

www.audioproducts.com.au



TOA INTRODUCES NEW WIRELESS SYSTEM

TOA Electronics offer the new 5000 Series which operates in the 692-722 Mhz band with up to sixteen simultaneous systems. Transmitter options include the WM-5220 condenser handheld, WM-5320 lapel, WM-5320H vocal headset and WM-5320A aerobic headset. Each transmitter is powered by a single AA battery for ten hours of continuous operation. Receiver models include the WT-5800 true diversity 64-channel wireless tuner, WT-5805 space diversity 64-channel wireless tuner and the portable WT-5810 space diversity 16-channel wireless tuner. All 5000 Series receivers feature a frequency scanning function and transmitter battery status indicator.



The TOA 5000 Series is available from authorised TOA dealers now, starting from RRP \$488 inc (64 channel belt pack with lapel mic and 16 channel portable receiver).

www.audioproducts.com.au





thinking sound

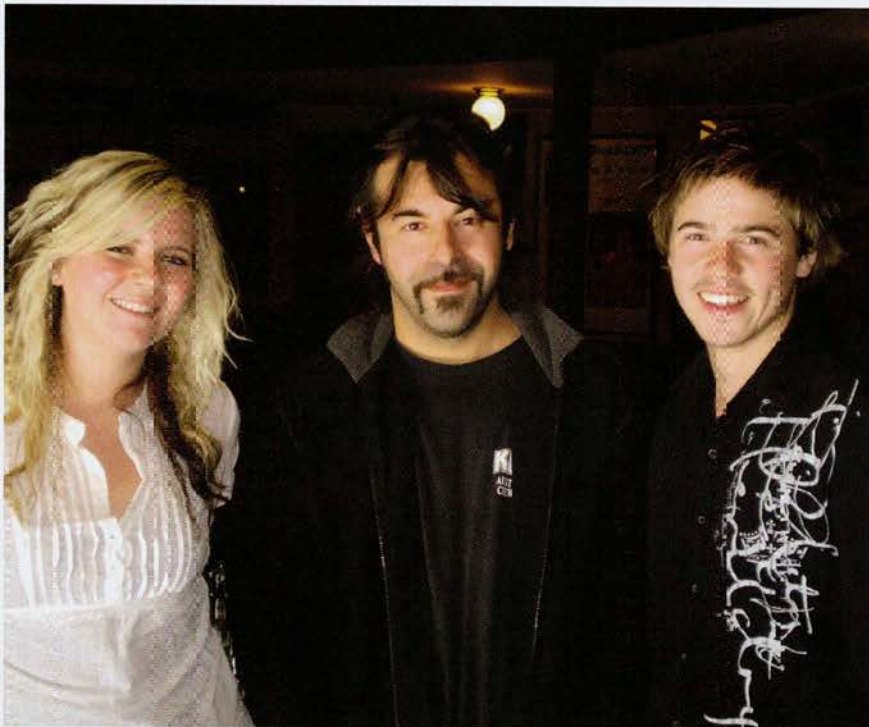
For Stability:

Set to 0dB @ 5MHz

Since song

Present a radical idea, and everyone's there to question it. But if it works, suddenly it's more than a good idea, it's an industry standard. Even before Meyer Sound was founded in 1979, the idea of self-powering was in John Meyer's mind. The HD-1 studio monitor realized his concept of incorporating amplification, processing, limiting and crossover into one cabinet, the MSL-4 brought it to sound reinforcement. At the time, there were skeptics, but now that we've been making self-powered sound reinforcement loudspeakers for more than 11 years, John Meyer's sound thinking is not in question. The real question is: what will he think of next?

genesis of the first meyer sound self-powered sound reinforcement loudspeaker: the MSL-4



Carly Jones, Peter Zahar and Josh Green at the Enmore. Carly and Josh are CX interns for 2007 and attend Julius Events College.

INDUSTRY DUDE PETER ZAHAR

Prof led by Carly Jones
and Josh Green

The Enmore theatre can proudly boast its iconic stature as possibly Sydney's greatest live venue. Many a band has passed through the Enmore's doors with some of the best plastered on its walls. It has managed to keep its early 1900's charm and keep its head above water for such a long period of time. This is due to the passion and commitment of its "family" team and this enthusiasm is clearly evident in its Technical Production Manager Peter Zahar.

Peter is the Technical Production manager for Total Show Productions which also runs another two venues under The Enmore's wing - consisting of The Metro (1200 seats) and their latest addition, The Factory (700 seats). Both the Enmore (2500 seats) and The Metro are on many bands' wish lists and are considered to be a landmark in the live music scene. It is Peter and his teams desire to produce a fantastic show that has helped create what these venues have become today. Peter is adamant that "at the end of the day it's not even about us it's about the band and it's about the show" and it's this love for his job that "keeps the passion arc drive burning".

Zahar has a lot of faith in The Enmore's ability to produce amazing performances and its character adds to this, "we have a unique situation here. There is no other building like this in Sydney. It's unique - you couldn't even replicate this".

The team has pulled off shows with some of the greatest acts in the world, with a personal favourite of Zahar's being Janes Addiction. But they have also had some mishaps including an incidence when lightning struck and the "lighting rig went out cause the thing that communicates between the dimmer and the desk copped a huge volt surge" but due to quick thinking and good incident planning the show went on. "We ran the show off 2 follow spots and some candle light". At another performance a blackout occurred in the area but thankfully the Enmore has two power feeds, "we lost audio but for us [we could] quickly transfer the things you need to keep going to the other power source, so that alone you know is a contingency plan in itself."

Peter believes that team work and cooperation play a major role in the success of any production "I think a lot of the people in this industry forget most were on the same team trying to put something forward and make a presentation everyone needs to cover each other". It's this kind

of attitude that has got the Enmore, The Metro and The Factory to where they are today and it is an ideal that is shared by all the members of this company. "If a band walks out of here or a punter walks out of here and says this was the best gig I've ever done then you know we've succeeded".

As the Production Manager, Peter has done Audio, Lighting and Stunt Rigging for many of the shows within all 3 of the venues. A large part of the Enmore's stability and appeal relates to its in house PA system cutting the stress of what could have been a possible 11 hour bump in to a more desirable 4 hours; the system never leaves the building.



ROLAND DIGITAL SNAKE AT ENMORE

The Lair is a new show on MTV that is filmed within The Metro; it is also the home of Zahar's new Roland Digital Snake, a 40-channel digital audio transmission system. Zahar has nothing but good things to say about this system as he has been using it since the beginning of the year specifically bought for producing shows for The Lair. "It's a good unit we've got 3 stages in that show, all running off it" The system mainly "gets used once a week for 12 hours a day and it has no issues, im using it because its simple it has 3 stages it even has 3 sections of where gear comes from, I like it. Roland has been a musician's friend from the beginning of time"

According to Zahar Roland's Digital Snake is multi purpose and doesn't have to be used in one specific venue "you take it to other places connect it to other cat 5's and away you go, ive bought it here [The Enmore], to the factory, it lives at the metro, ultimately I bought it for the MTV job, when the job finishes I will install it in one of the venues, its about the recycling thing for me, the power supply back up is almost 3 quarters of the price of the snake itself."

EAW HELPS DJW MEET CLUB CHALLENGES

Sydney based system provider DJ Warehouse (DJW) recently completed an extensive project at the Sobar nightclub of the Cremorne Hotel, utilizing a wide range of EAW loudspeakers.

Located on Sydney's Lower North shore, the hotel faced tough noise restrictions due to a high-rise apartment block directly on top of the planned nightclub. Some of the obstacles DJW confronted were structural vibration paths, thin ceilings and many escape routes for airborne vibrations. EAW loudspeakers chosen by DJW in overcoming these challenges include DSA250 (Digitally Steerable Arrays), KF730 compact line arrays and highly innovative CP621 concentric array ceiling loudspeakers.

Meanwhile, the majority of low-frequency energy is delivered by a custom-built concrete sub column containing six EAW SBX220 subwoofers. This unique design and configuration enabled the DJW tech team to tightly focus much of the sub signal onto the dance floor.

www.productionaudio.com



YAMAHA PM5D VERSION 2

Yamaha debut PM5D Version 2, a key software release with additional features for PM5D and PM5D-RH Digital Mixing Consoles. It also enables control of the DSP5D Digital Mixing System. The new software, which will be available as a free download, adds over 30 new features based on input from Yamaha's users.

The free firmware upgrade, downloadable from Yamaha's Pro Audio website, will bring any PM5D up to the PM5D V2 specification.

Among the new features incorporated into PM5D Version 2 is Virtual Soundcheck, which allows for an easy switch between live inputs and inputs from a multi-track recorder.

When using the PM5D V2 in conjunction with a multi-track recording system such as Steinberg's Nuendo DAW, engineers can use the Virtual Soundcheck function to temporarily patch a live recording made during a rehearsal or performance to a selection of the console's inputs for setup and adjustment when certain musicians or performers aren't available.

Version 2 fulfills another major request from PM5D users in the marketplace: system scalability. This is achieved by adding Yamaha DSP5D Digital Mixing System units, each of which deliver all the functionality of a PM5D-RH V2 in a rack-mountable unit that can be seamlessly controlled from a PM5D V2 console. Connection from the DSP5D to the PM5D can be made via a single Cat5 cable, making the DSP5D a remote stage box and digital multicore solution.

Up to two DSP5D units can be used with a single PM5D V2 console.

www.yamahamusic.com.au



WWW.CASES.COM.AU
Wholesale Enquiry New Welcome



1400+ CASES ONLINE
37 new cases in April & May



New! 20 Rack \$139 rrp



New! 20u Spring Coil Suspension \$1099 rrp on wheels!



New! TILT n ROLL RACKS 15es ready made from \$429 rrp



New! 20u "Ea Casy Suspension Rack in rack, outer case \$1099 rrp on wheels!



New! Floatation Mixer-Racks from \$648 rrp with wheels



Packing Cases ready made from \$299 rrp



Plasma & LCD Cases from \$299 rrp



Heavy Duty Briefs 6 ready made under \$200 rrp



Mixer Cases most under \$500

NEW! PACE CASE with pick'n'pluck foam



\$29-\$129 rrp



7 ready lined packers ALL way way under \$900 rrp



3 Lidded Mixer racks fr \$349



tilt & rolls custom cut



17 Suspension Racks from \$299



4 drawers \$675

073889-7755

design@roadcase.com.au
(just 1 hr response for design-quote)

delivery to your door in Oz, NZ & Singapore

SAVE 20-60% by using
www.CASES.com.au*

* typically 20-60% lower prices than Syd, Adel, Bris, & Perth based case companies



WANNA GO TO THE FOOTY?

Andy Mackenzie orders a pie and sauce at the game they play in Sydney

When Manly Sea Eagles hosted their first Monday night football game at Brookvale Oval, it was obvious that a bit of pre-game entertainment was in order. Unfortunately the PA for ground announcements isn't really up to the task. The call for help was answered by long established northern beaches (Sydney) production company Lightfoot Sound.

The brief seems reasonably straightforward at first glance. The system needs to be suitable to provide even coverage of the crowd for the pre show entertainment, consisting of the Sea Eagles cheerleaders and a group of 16 student performers from Manly Vocal Arts Centre led by Margie Cohen – and while we're at it, we need to use it for the national anthem and the ground announcements as well.

But there are a couple of minor complications. The grounds staff are concerned about the playing surface, so no vehicles or trolleys on the ground pre-match. The crowd, expected to be around 15,000, will be spread along the hill on two sides of the ground and in the three-storey high grandstand on the other two. The sponsors don't like the idea of any of their signage being obscured. The safety of the players requires a fair amount of clearance between the sidelines and any hardware. As always

in Sydney, there's a chance of rain and no cover available. And finally, the match is being broadcast live on Fox sports, so everything needs to run on time or you'll be chest deep in angry telly people – and make sure none of your gear gets in the way of the camera crews.

The Lightfoot solution was a distributed system of d&B audiotechnik Q-series. 32 Q1 boxes, 4 Q7s and 16 Q-sub's were used to construct a series of small arrays around the circumference of the ground. Much of this equipment was sourced from Lightfoot sound's own

hire inventory, while the remainder was supplied by IJS Logistics in Brookvale. Production manager and audio operator David Thomas told CX "The d&B system has a lot of advantages in situations like this. It ground stacks easily, and none of the components are too heavy to carry so we don't have issues with getting them into position. The arrays are small so they don't interfere with the sightlines for the cameras or block the signage. Most importantly, the sound only goes where you want it to. Over the years we've had consistent problems with noise complaints from the neighbours around the ground, but the d&B seems to have eliminated that problem."

The system was powered by 17 d&B D12 amplifiers placed at intervals around the perimeter fence. These guys have all the system processing for the different boxes on-board, along with delay, attenuation and limiting. This meant the entire stadium PA



An Array - only about waist high. A Q7 doing fill over the fence. Also microwave RF link antennas for mobile TV cameras

rss
by Roland



Serious about this?

Then you really should be serious about this...



- **Pristine audio delivered digitally**
- **A single ethernet cable**
- **Limitless and lossless splits**
- **Now also available in an affordable 24 channel system**

Digital Snake
Multi Channel Digital Audio Transfer System



No Hire. No Musical Instruments. Australia's Favourite Professional Audio Supplier to the trade.
75-85 York Street, South Melbourne, VIC 3205 | n:1800 816 244 | t: (03) 9690 8344 | f: (03) 9690 7077

www.factorysound.com

The new face of Theatrelight



THEATRELIGHT NZ

E-mail: info@theatrelight.co.nz
6 Rowe St., Onehunga, Auckland, New Zealand
Tel: 64-9-622 1187, Fax: 64-9-636 5803
Web: www.theatrelight.co.nz



could be fed by one long line-level loop going to all 17 amplifiers. This was again an attractive proposition as it reduced the complexity of the system and the time spent on tedious cable jerking.

With the exception of the two CD players required to provide the backing for the cheerleaders and the Manly Vocal Arts Centre group, all the inputs to the system were wireless – 8 handheld Shure ULX wireless mics, used for the singers and the national anthem, and two links from the grandstand control room, one for the ground announcements and Grant Goldman's commentary, the other for the soundtrack to the ads played on the big screen.

The mixer selected to control all of this was an inexpensive digital unit – David's explanation is that "you use a digital mixer so you get all your processing on-board – compressors and limiters on every input, but you use a cheap one so getting rained on doesn't have to break your heart." The only outboard processing used was a dBX 2231 graphic equalizer for foldback, simply for the convenience of having the foldback EQ immediately accessible.

The foldback for the vocal group was straightforward – two FBT Maxx 4s driven by a Labgruppen fp6400. It may seem like overkill in the amplifier department, but 40m of speaker cable soaks up a fair bit of power before it gets near a speaker. The foldback generated one of the few rushed moments in the whole show. David: "Basically, once the act finished, we had two minutes to clear the playing field before the broadcast started. So as soon as they finished, the guys bolted out and grabbed a box each then ran back to the fence dragging the cable in behind them. The critical thing was to get it out of the way – tidying it up could wait a few minutes." The 'guys' in question were the Dowling brothers, Joe and Sam, who made up the other two thirds of the Lightfoot crew.

The day started at 9AM, with the Lightfoot crew supplemented by some hired muscle from Live crewing, and worked towards an early system check at 12:30. Maybe the system checks could have been done later, but no-one really wanted to take the chance so the crew got a long lunch before the vocal group's soundcheck at 3:00 and the final tests of the control room feeds at 4. Everything needed to be nailed up before the gates opened at 5:00 as the club wanted no sound until the warm-up game started at 6:00. A short flurry of activity around the pre-match show, cheerleaders and anthem between 6:40 and 7:00 got them to the start of the game, and then it was a leisurely run to the finish.

The system was shut down at 9:30 and was all in the truck on the way up Warringah Road by about 11:45 – as is usually the case, the grounds staff were a little less frantic about the playing surface after the game so the bumpout was rather less physically demanding than the bumpin.

The crowd had fun, the home team won, nobody got rained on. What's not to like?

CX

PRODUCTION & EVENT MANAGER ASSOCIATION OF AUSTRALASIA ESTABLISHED

In the last six years, the Music and Events Industry has come under some scrutiny from Government and other authorities. This Association has been formed to represent its members and be a voice in the industry. It must be said, that PEMAA has not been set up as a 'union', nor is its purpose to be aggressive inside this industry.

The issues that we see as relevant for an organisation like PEMAA are

1. Public Liability Insurance

With our membership being as strong as it is, we have a couple of insurers who are interested in offering discounted premiums to PEMAA members.

2. Code of Conduct

It is vital as we move toward regulation that we adopt a code of conduct. This will link back to our insurance also. Within this issue we must clearly define job descriptions. Important for insurance coverage, it is also important for our employers to understand what our roles are.

3. Industry Issues

There are many 'issues' that need addressing in this industry, and PEMAA intends on getting involved in as many of these as it sees a need to. Not to 'strong arm' for a result but to be a measured and experienced voice to affect change for the good of all in the industry.

4. The Guide

If we are seen to be 'getting our house in order' then we will be supported by Governments and Workcover authorities.

The issues of Insurance, Code of Conduct, and The Guide are all linked.

It is important that we are careful of whom we allow to join PEMAA. Each application will be considered by the committee and it may be that some will not be accepted, in the current format of the association. The future will see the addition of further levels of membership, so we can be involved in the solid growth of careers in our industry. It may be that technical levels will be added at a later time also. At present, there are three levels of membership:-

Private a self employed production or event manager (tour manager, promoter rep, site coordinator also), with more than five years experience in the events/music industry

Corporate a corporation who supports the industry (lighting, staging, sound, video, and others) and, as a corporation would agree to follow the code of conduct and be a player in the regulator debate.

Associate an educational, government, or similar institution who would consider being a part of PEMAA an important way of keeping abreast of changes in the industry.

Only private members have voting rights at this stage. The inaugural committee is:

Jeff Gray	Ord member
Haydn Johnston	Ord member
Iain Morrison	Ord member
Ray Maguire	Treasurer
Kate Stewart	Secretary
Denis Sheahan	Vice President
Matt Doherty	President

If you consider that you are suitably qualified to be a member of PEMAA and would like to be part of the 'voice for change', then email us at pemaa@mac.com for an application form



enhanced

*ease of use & performance,
wider range of applications*

Wireless Mic System



The **NEW 5000 Series wireless microphone systems** are ideal for houses of worship, schools, fitness clubs and many other applications.

The new 5000 Series operates with up to sixteen simultaneous systems.

Transmitter options include:

WM-5220 Condenser handheld

WM-5320 'lapel'

WM-5320H 'vocal headset'

WM-5320A 'aerobic headset'

'Belt pack included'



Each transmitter is powered by a single AA battery, for up to ten hours of continuous operation.

Receiver models include:

WT-5800 true diversity 64-channel wireless receiver

WT-5805 space diversity 64-channel wireless receiver

WT-5810 portable space diversity 15-channel wireless receiver

All 5000 Series receivers feature a frequency scanning function and transmitter battery status indicator.



audioproducts
Group

Australia:
Call 1300 13 44 00 or visit
www.audioproducts.com.au

New Zealand:
Call 0800 111 450 or visit
www.audioproducts.co.nz

HOW TO: DRIVE A SEMI-TRAILER

By ANDY MACKENZIE AND JOHNBOY TAYLOR*



When you first hop into the cab you'll notice some familiar stuff which should help you feel more at home. The accelerator, the brake, the steering wheel, the speedo...all our old friends are there – but they've brought a whole lot of new friends!

Let's start with the familiar things. The accelerator and the steering wheel do exactly what you expect. The brake pedal does mostly what

you expect, but with rather greater enthusiasm. Most semis, and indeed most heavy vehicles, use air brakes and air brakes behave slightly differently from the hydraulic brakes you're used to. Where hydraulic brakes respond to how hard you push the pedal, air brakes respond to how far you push it and the pedal provides a lot less resistance. Add to this the fact that the brakes are set up to cope with a fully laden trailer and

you'll understand that the brakes can be just the tiniest bit touchy, especially with little or no load on.

Moving up to the instrument panel, we are greeted by our old friends speedo and tachometer. The speedo tells you how fast you're going and the tacho tells you how fast the engine's turning over. There's one big difference here – your little car might be happy spinning up to 8500rpm, but big diesels are a bit more sedate and the redline is usually somewhere around 2100. Speaking of big diesels, there's a fuel gauge up there too which tells you how full your tanks are. It doesn't tell you how big they are though – it's not unusual for a highway hauler to swallow more than 1000 litres of diesel at a fill. Anyone out there been complaining about petrol prices?

Also front and centre you're likely to find a few other gauges commonly seen in the dashboards of car enthusiasts – oil pressure, coolant temperature and battery voltage – because truck drivers also like to know what's going on in their engines. There are plenty of other useful gauges hanging around as well, most of which you probably don't need to worry about too much at this point. As a general guide, the needles on most of the gauges should be sitting somewhere near the centre of the scale, and you don't want anything measuring temperature going too high or anything measuring pressure to go too low. Do keep an eye on the pressure in the air tanks – you rely on air pressure for all kinds of stuff including brakes and suspension.

The steering column also plays host to a load of extra sticks and levers you might not find in your car.

Why do Hillsong Church and Sydney Convention and Exhibition Centre buy Yamaha Digital Consoles from The P.A. People?

From the economical yet highly featured LS9 (including on board mp3 replay and recording functions) through to the industry standard M7CL to the market leading PM1D and PM5D consoles, The P.A. People have both the experience and technical knowledge to advise which console is the most appropriate for your application, and to provide you with service and support for years to come.

The P.A. People - An authorized Yamaha commercial audio dealer.



DIGITAL MIXING CONSOLE **LS9-32**
\$14,000 inc.



DIGITAL MIXING CONSOLE **LS9-16**
\$8,000 inc.



M7CL/32
\$24,000 inc.

M7CL/48
\$30,000 inc.

DIGITAL MIXING CONSOLE **M7CL**





As well as the indicators, wipers and other standards, there are controls for cruise control, trailer brakes and engine brakes. The trailer brake control allows you to operate the trailer brakes independently of the prime mover's brakes – which can be handy on those embarrassing

occasions when the trailer tries to pass the truck. The engine brake control activates a switch which partially closes the exhaust valves in the motor, making compression braking much more effective. Finally we come to the gearshift. The gearbox in a truck is one of the

most feared and misunderstood devices in the history of technology, but there is nothing about it that need frighten a skilled driver. A whole bunch of gearboxes are available in prime movers including automatics (that's right kids – just like the family wagon), synchromesh manuals and the straight-cut (or crash) boxes including the Road Ranger and the perplexing Mack Quad box, with its two shift levers.

The autos are pretty straightforward. There are auto-shifting synchromesh boxes, like those in many Japanese trucks that require no clutch pedal at all. Then there are the auto-shifting straight-cut boxes like those built by Eaton-Fuller, which still require a clutch pedal for taking off and stopping. Synchromesh boxes drive in much the same way as any other synchro gearbox, but with more gears.

The straight-cut boxes typically use multiple ranges to provide additional gearing. A fifteen speed Road Ranger, for example, uses five gears in each of three ranges. The lowest range, deep reduction, pulls the ratios way down and is really only used for

FingerWorks™ PC

TELESTRATOR FOR POWERPOINT™

www.FingerWorksPC.com

Getting tired of your PowerPoint™ presentations?
just imagine how your audience feels!

Since its launch in 1999, FingerWorks™ software has been used by TV production crews Worldwide. Designed primarily for major league sports events to enhance instant replays and commentaries, it wasn't long before the FingerWorks™ Telestrator was being used for multiple applications from international medical seminars, news reports to TV game shows.

Now you can use the same program to enhance your PowerPoint™ presentations.

Have you ever wished that you had added something extra into your slide show?
 Have you ever wanted to emphasize something in your presentation live?

FingerWorks™ PC has solved these problems for you.

With FingerWorks™ PC you can draw live in real time over your slides and create great visual effects to increase the professional look and impact of your PowerPoint™ presentations. Use tools just like you see on TV including; moving highlights, stretchy arrow, circles squares, and freehand drawing. Give yourself some flexibility by dropping in graphics and slides when the timing is right.

Wake up your audience! Visit www.FingerWorksPC.com NOW!

Quote Coupon No: FING-78BE-WKPC for your discounted purchase offer.



Want A TEST DRIVE?

Visit our website to download a 30 day, fully functioning trial of the FingerWorks PC™ Software.
www.FingerWorksPC.com

www.FingerWorksPC.com

poor terrain, steep hills, really heavy loads and other tough applications. Under most circumstances you could get away with running through the five gears in low range then changing the range to high and the gear to first before making your way through the gears again.

The tricky bit in driving these gearboxes is that they don't put up with just being shoved into gear like a synchro box – you need to shift to neutral, let the clutch out, match the engine rotation speed to the gearbox, put the clutch in, select the new gear and finally let the clutch out again (double declutching). The manufacturers of the gearboxes recommend that you actually use the clutch for this process, but most drivers find that if you're doing it right the clutch doesn't make much difference except for taking off and stopping.

So there it is. As long as you can cope with a vehicle that weighs twenty times what your car does, is five times as long and half again as wide and has a gearbox that appears at first glance to make no sense, you might be ready to learn to drive a semi-trailer.

**Johnboy is a Technical Production student at Julius Events College. He previously drove road trains loaded with explosives. He understands risk management. CX*



TANNOY

POWER V



DIGITAL POWER - ULTIMATE PERFORMANCE



Power V Series

- Class D Amplification
- User Selectable Full Range/High Pass Modes
- Dual Concentric™ Technology

Distributed by

Syntec International (Australia)
Phone 1800 648 628
Email sales@syntec.com.au
Web www.syntec.com.au

Syntec International (New Zealand)
Phone (09) 263 9885
Email prosales@syntec.com.au
Web www.syntec.co.nz

DUAL™
CONCENTRIC
THE ORIGINAL POINT SOURCE

tannoy.com.au

ROYALTIES

Where's Mah Mooney?



By **DUNCAN FRY**



Let's start with an old joke. What does a professional musician say when he gets to work? "Do you want fries with that?" Hey, don't laugh too hard – by the end of this article that burger-flipping wage is going to start looking pretty good!

What are royalties? There are many types, but put simply, they are payments to you from someone else for the right to use (and therefore make money from) something you've created. You do it once, and then receive a percentage of the price of every copy of it sold from then onwards. And in the context of the music biz, you record a song, and then regularly get money paid to you from a grateful record company.

Sounds like a license to print money, doesn't it? Which it is, but rarely for you. Thanks to very creative accounting practices, not only is it very likely that you'll receive that well known amount 'three fifths of sweet F A', but also there's a high risk you'll end up owing money instead of getting it.

Creative accounting originated a few hundred years ago with book publishers, then refined over subsequent years and finally polished to a high gloss by the entertainment biz – record and movie companies. Up

against this wealth of knowledge come you and your mates' band, with stars in your eyes and fame in your hearts. Plus the dream that the money from your hit songs will keep you in limos and chicks and country estates until your old age.

Well, dream on, baby. The truth is that the music biz doesn't work that way.

Look at casinos, those glittering monuments to debt and bad taste. Losers, not winners, pay for casinos, so they jiggle the odds against you to ensure that there is much more chance of you being the former and not the latter. And if you do start winning a lot they will arbitrarily change the rules and kick you out anyway!

The same goes for the music business (many of whom are large shareholders in casinos, oddly enough), and make no mistake, it is a business, run by hard nosed, hard boiled executives who have little taste for music but a large, voracious taste for money. And they don't make money by paying you, so they have teams of lawyers and accountants on staff whose sole job it is to make sure that you're kept on the drip and owing them and therefore keeping on creating.

For example, when your hit CD sells well but doesn't sell enough to pay back the costs, you'll be encouraged (i.e. forced) to make a new one, so that the money you owe can be deducted from the royalties payable on the new album. And so on. This is technically known as 'cross-collateralization' or colloquially as 'bleeding you to death'!

Where does the money go? What comes out of your royalties (known as 'recoupables') before you and the boys see them? Here are just a few:

1. Advance money paid to the band
2. Recording costs – studio time, producers
3. CD production and packaging
4. Doing the video
5. Marketing and advertising
6. Warehousing and shipping
7. Songwriter royalties

These are the big ones but in reality they're the tip of the iceberg. However, if you add them together, they could all be classified as legitimate business costs.

What other business can you think of that doesn't pay for any of the costs involved in producing its product? A business that, if you believe what they say, loses money on 95% of the product they release? Such a sloppy success rate in any other business would be totally unacceptable and it would go broke overnight, and yet they still make immense profits.

When you ask where the money is after your CD has topped the charts all around the country, you'll be shown enough paperwork to choke a dozen donkeys. And the bottom line will be that all that money has gone on costs, this and that, and also that and this, and just fancy that, you owe the record company fifty grand (or much more).

"We heard it on the radio all the time everywhere we went". It may come as a bit of a surprise that performers don't earn anything from airplay of their hit songs. Unless (very rarely) negotiated otherwise, this money traditionally goes to the record

“Get the very best legal advice you possibly can. This advice must be from a specialist entertainment lawyer, not the guy who did your family’s house conveyancing.”

company. Surprise surprise!

But let’s go back to the list of recoupables above. Who’s musical and on the list? That’s right, the songwriter. Top of the food chain for royalties are the songwriters. Well, without them there wouldn’t be anything for the performers to perform, would there? They’re also closely associated with the music publisher, a business with plenty of clout that the record company is keen to get along with, so they’ll get paid well before the musicians.

So, let’s write our own songs. Well, it’s a start, although the royalty rate the songwriter gets will be 25% less if he/they perform it themselves. But 75% of something is a lot better than 100% of nothing, so if you can put together a good song and perform it, at least someone in the band will be earning!

If you don’t sign up with Engulf and Devour (thanks Mel Brooks) then what are the alternatives? Well, you could sign with an independent company, who often give the impression that they are more on the artists’ side than the majors, and in truth it may often be the case. Until you have a really big hit and they go under, taking with them all your royalties and songs, to be auctioned off as company assets without you having any say in it at all.

The late Kirsty MacColl signed up with Stiff records, a seemingly successful independent company in the 80’s, had a few big hits but never saw a cent when they went bankrupt and she lost the rights to all her recordings. Likewise John Fogerty and Fantasy Records; it’s a long, sad list.

So what’s old Dunk’s advice in all this?

Firstly, accept that you’ll never get everything you’re entitled to. It’s just not going to happen, so unfortunately you’ll have to get used to it.

Secondly, don’t sign ANYTHING - no notes, no scribbled ideas from the R & D guy, no nothing, until you’ve done number three, which is:

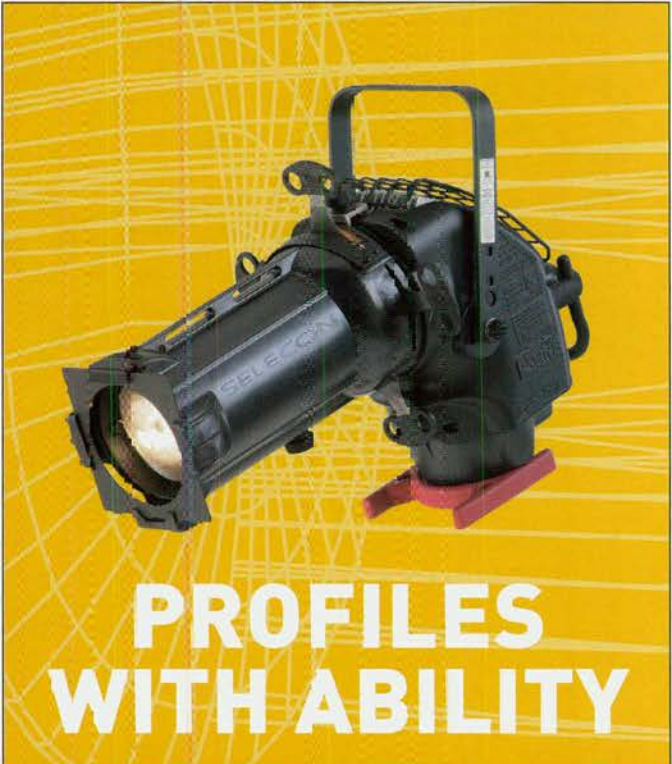
Get the very best legal advice you possibly can. This advice must be from a specialist entertainment lawyer, not the guy who did your family’s house conveyancing. Someone who knows a mechanical royalty from a hole in the ground.

Lastly, once you’ve got this advice, don’t listen to anyone else, no matter how expert they appear to be. It’s such a complicated business that the technical side of it should be left to the real experts; otherwise that burger-flipping joke at the start won’t seem funny at all!

A few years ago I was listening to Johnny Young reminiscing on the radio about his early years in a band, and he said the music business had changed and wasn’t the same now that lawyers were involved. So I rang up to give him my 5 cents worth.

“That’s absolute bullshit,” I said. “There have always been lawyers involved – it’s just that now the musicians have them too!”

Legal disclaimer: All of the above is advice of a general nature only and should not be considered as anything like the truth. So there.



PROFILES WITH ABILITY

FLEXIBILITY, USABILITY, AFFORDABILITY, ZOOMABILITY, PROJECTABILITY, CAPABILITY

PACIFIC ZOOMSPOT

TWIST AND SLIDE for 5.5°–13°, 12°–28°, 14°–35°, 23°–50°, 45°–75° and everywhere in between. The modular design enables quick lens tube changes, with no tools required.

HIGH DEFINITION OPTICS come standard with all Pacific Zoomspots. Go to WWW.SELECONLIGHT.COM/PACIFICDEF to learn more.



The Pacific’s active heat management system provides a gate temperature low enough for **PLASTIC IMAGE PROJECTION**, with high definition pattern projection a standard feature.

With the lamp socket and cabling out of the heat exhaust, maintenance and downtime are slashed. An industry-leading **THREE-YEAR WARRANTY** is standard for all theatrical applications.

“The wide zoom range allowed us to tailor the beam spread for each shot. It made a great contribution to our show.”

JULES FISHER AND PEGGY EISENHAEUER:
‘OH!TA RIVEFA, THE DANCER’S LIFE’

SAMPLE PACIFIC PROJECTS: Ipswich Civic Centre, QLD; Curtain Theatre, WA; Esso EHP Billton Wellington Entertainment Centre, VIC; The Carriaga Works Contemporary Arts Centre Sydney; Queensland Performing Arts Centre; Newcastle Civic Theatre, NSW; NIDA, Sydney; Sydney Theatre at Walsh Bay; WA Academy of Performing Arts; Queen’s Park Theatre, WA...

Contact your state Selecon dealer WWW.SELECONLIGHT.COM/DISTRIBUTORS, or Peter McKenzie Selecon Australia: 0419 133 342

GET A PROFESSIONAL FOLDBACK WEDGE!

By **JIMMY D**

Were Apollo 440 singing about their stage monitors?

Apparently the proliferation of in ear monitor (IEM) technology, has not made monitor boxes any less relevant to the audio trade. If anything, monitors have improved and now provide higher power handling and require less equalisation. There are also some interesting designs out now which are giving traditional models a run for their money (if not their weight).

Following is some info on some current series foldback speakers – especially prevalent now has become the “multiple smaller drivers” configuration.

Now the disclaimer! In the course of researching this info, it became abundantly apparent that while most manufacturers are happy to provide specs, they do not always provide the same information as each other. In addition some manufacturers list the info in conjunction with conditions under which the measurement was derived or calculated. If in doubt, check the manufacturer’s website for these conditions. Also, some manufacturers make boxes which serve as FOH or foldback cabinets. If they make dedicated foldback boxes I’ve tended to focus on those. It’s also worth noting that this is by no means a definitive list of what’s available – absence from the list indicates absolutely nothing other than it’s not a box I included! Subjective thoughts on boxes in the list are my own thoughts only – what works for me might not work for you!

Let’s start!

RADIAN MICROWEDGE

The Microwedge is available in three flavours – small, smaller, and very small. It’s a composite cabinet with a front-loaded bass driver and a horn-loaded compression driver. Inputs and loop-throughs are NL-4 connectors, mounted

inside the port so the can be concealed from view of cameras. The trapezoidal shape was chosen to allow better coupling of the drivers when multiple units are used. I haven’t used these so can’t really offer any subjective thoughts on them. The smallest of the three has better high-end response, which is logical enough since 1” is less driver mass to move than 2”. The larger cabinets are better at low frequencies

for similarly obvious reasons.

NEXT UP THE NEXO PS SERIES.

The PS series are composite cabinets, with a front loaded bass driver and horn loaded compression driver. The boxes have a rotatable horn flare to switch from FOH to foldback mode, and NL4 connectors with loop-throughs. These speakers require either a PS

*Radian Microwedge -1108
(2367 x 2119)*



RADIAN MICROWEDGE www.gtaust.com

	Microwedge 8"	Microwedge 12"	Microwedge 15"
Retail Price	\$2,640	\$4,395	\$4,895
Power Handling	200W RMS	500W RMS	500W RMS
Sensitivity	95db @ 1W/1m	96db @ 1W/1m	97db @ 1W/1m
Freq Response	100Hz - 20KHz	85Hz - 15KHz	55Hz - 18KHz
Dispersion	90° conical	90° conical	90° conical
Weight	9.6kg	27.3kg	30kg
Box Config	8" LF, 1" coaxially mounted compression driver	12" LF, 2" coaxially mounted compression driver	15" LF, 2" coaxially mounted compression driver
Drive Config	Bi-amp or passive crossover switch	Bi-amp or passive crossover switch	Bi-amp or passive crossover switch

eos

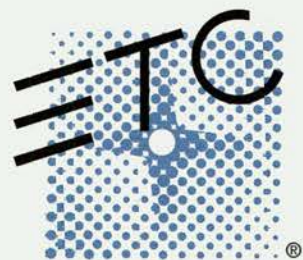


COMPLETE CONTROL™

A new day dawns...

Contact Jands for a demonstration of the new Eos™ lighting control system.

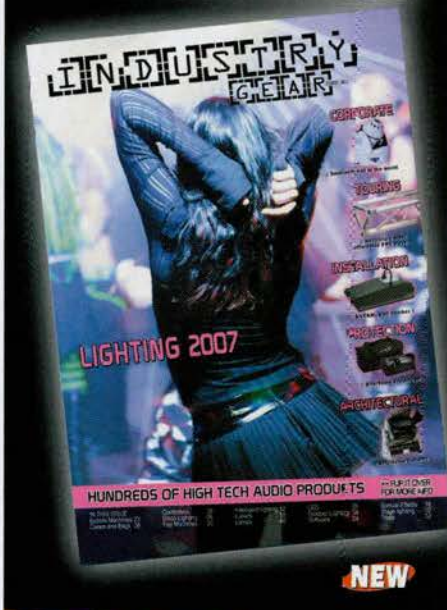
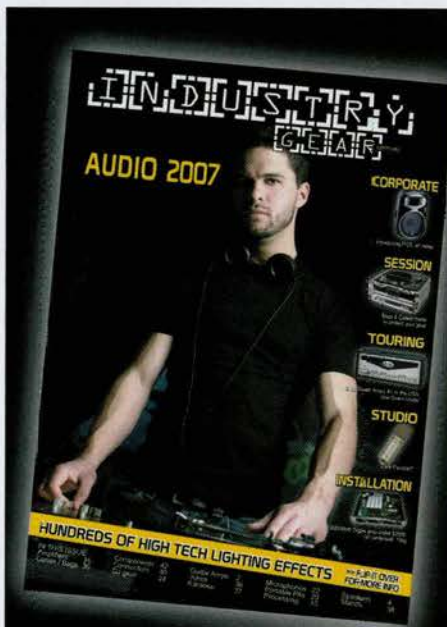
www.etconnect.com



Distributed by

JANDS

40 Kent Rd. Mascot NSW 2020 • Ph:(02) 9582 0909 • Fax:(02) 9582 0999 • www.jands.com.au



**CATALOGUE
OUT NOW**
CALL NOW FOR A FREE COPY

Look out for this sign
in your local area:

**INDUSTRY
AUTHORISED DEALER GEAR**

**"If your local dealer
doesn't sell Industry
Gear, ask why not?"**

Distributed by LSW
Ph: (02) 9718 4900
sales@lswonline.com.au
www.lsw.com.au



NEXO PS SERIES www.gtaust.com

	PS8	PS10	PS15
Retail Price	\$2,195	\$3,295	\$5,995
Recommended Amplifier Power	200W – 500W RMS into 8W	200W – 500W RMS into 8W	550W – 1200W RMS into 8W
Sensitivity	96db @ 1W/1m nominal	98db @ 1W/1m nominal	102db @ 1W/1m nominal
Freq Response	69Hz – 19KHz \pm 3db	65Hz – 20KHz \pm 3db	47Hz – 18KHz \pm 3db
Dispersion	55-100° horizontal, 55° vertical	55-100° horizontal, 55° vertical	55-100° horizontal, 55° vertical
Weight	7.5kg	15kg	29kg
Box Config	8" LF, 1" compression driver	12" LF, 1" compression driver	15" LF, 3" compression driver with 2" throat
Drive Config	Passive only	Passive only	Passive or Biamp switchable



Radian wedges close up

CLAIR BROS 12AM

Frequency Range	65 Hz to 18 kHz
LF Transducer	12" Cone
HF Transducer	2" Compression Driver
Power Handling	LF: 300 watts EIA, 1200 watts peak HF: 150 watts Continuous Program
Transducer Sensitivity (1 w @ 1 M)	LF: 98 dB HF: 111 dB
Enclosure Weight	74 lb (33.5kg)

	M2	M4	MAX	MAX12
Retail Price	\$9,699	\$6,999	\$4,799	\$4,399
Recommended Amplifier Power	d&b proprietary	d&b proprietary	d&b or 3rd party up to 500W into 8Ω	d&b or 3rd party up to 500W into 8Ω
Max SPL (1m, free field)	143db (with D-12 amplification)	140db (with D-12 amplification)	136db (active mode)	134db (with D12 amplification)
Freq Response	50Hz – 17KHz ± 5db	55Hz – 17KHz ± 5db	55Hz – 18KHz ± 5db	80Hz – 18KHz ± 5db
Dispersion	45° horizontal, 60° vertical	50° horizontal, 70° vertical	60° conical	80° conical
Weight	38kg	20kg	26kg	26kg
Box Config	2x 12" LF, 1.4" compression driver	15" LF, 1.3" compression driver	15" LF, 2" coaxially mounted compression driver	12" LF, 2" coaxially mounted compression driver
Drive Config	Passive crossover	Passive crossover or bi-amp	Passive crossover or bi-amp	Passive crossover or bi-amp

amplifier, or a PS or NX241/242 controller if used with third party amplifiers. From experience, the boxes won't shy away from the additional headroom afforded by a bigger amp. The PS10s and PS15s can be flown with suitable hardware, and matching subs are available for all models to allow better low frequency extension when used as FOH cabs.

CLAIR BROS 12AM

Not readily available for purchase in Australia, though widely used here regardless. This wedge is a composite box, with a front loaded 12" woofer and a compression driver with 2" throat & 4" diaphragm. Connectors are EP4, and the boxes require a CR-12LC dedicated processor.

Clair provide their specs a little differently to other manufacturers, so rather than provide a table I'll just quote directly from the product .PDF.

d&b AUDIOTECHNIK

d&b produce a range of monitors, I've listed a 15" and a double 12" model for comparison. The M2 requires d&b amplification in the form of either a D-12 or E-PAC amplifier with in-built processing, however the MAX series can be used with other amps provided a subsonic filter is used. The D-12 affords some additional processing options such as low and high cut, and also allows operation in active or passive mode. Connection to d&b cabinets is by way of EP-5 connectors, which allows the speaker to provide



d&b wedge

information back to the amplifier to avoid clipping and other such problems.

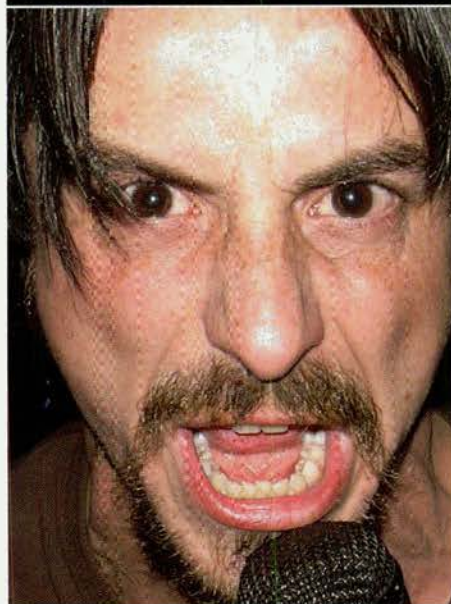
MARTIN AUDIO

Martin also produce a double 12" monitor, as well as a single 12", single 15" and a miniature 8" version. NL4 is the connector of choice for these boxes, and all these cabs seem equipped to deal with relatively high input power levels. Martin suggest using these cabinets with a suitable Martin processor such as the DX1. Specs on the LE2100 lead me to think it would be loud enough to wake the dead.

MEYERSOUND

While this article is primarily based around non-powered speakers, it seemed worth including a powered box since Meyer make one in the 2x 12" configuration. The MJF-212 is self powered, and has an RMS network option, which allows for remote system diagnostics using a computer. Audio input is via XLR connector with loop

Need to be Heard?



**what ever ...
when ever ...
for ever.**

Wharfedale have configured a system just right for your needs, whether an intimate function or the loudest pub gig.

Our consistent quality and design innovation will give you the confidence and the sound to achieve.



www.cmi.com.au

WEDGES

MEYERSOUND

www.meyersound.com.au

	MJF-212
Retail Price	\$9317.00
Internal Amplifier Power	2x 500W + 275W
Driver Power Handling	LF: 1200W AES, HF: 250W AES
Frequency Response	60Hz – 16KHz ± 4db
Dispersion	50° Symmetrical
Weight	49kg
Box Config	2x 12" LF, 4" Compression driver with 1.5" Horn

output, and to keep it all neat PowerCon connectors are used for supply voltage input.

EASTERN ACOUSTIC WORKS (EAW)

EAW have several wedges on offer, but probably the most interesting would be the SM84. This unit is loaded with 4x 8" drivers which surround a 40° horizontal 90° vertical horn flare. With that in mind 8" drivers are really punchy, and I do think this would be a pretty slamming vocal wedge. EAW recommend a roll-off between 50 and 60Hz on most of their monitors.

L'ACOUSTICS

While perhaps more widely known for large-scale FOH speakers, L'Acoustics make several monitor boxes. Of particular interest is the ARCS which is usable not only as FOH or in-fill, but also as a side-fill box on stage. I've seen pairs of ARCS stacked on subs to bring them up to ear height. Suitable processing data for these speakers is available for L'acoustics and other approved digital controllers.

WAYLOUD

Designed and made by Johnston Audio, the WLD-122 Wedges are impossibly hard to find data about on the web. Mercifully though they do sound good and with a couple of minor EQ tweaks are (much as the name implies) way loud (enough to be heard over lairy guitar amps).

MARTIN AUDIO www.tag.com.au

	LE2100	LE1200	LE1500	WM0.5
Retail Price	\$6,995	\$4,995	\$5,995	\$1,795
Rated Power	LF: 800W AES MF+HF: 250W AES	400W AES	600W AES	125W AES
Recommended Amplifier Power	800W – 2000W into 4W	500W – 700W RMS into 4W	800W – 1500W into 4W	300W – 400W RMS into 4W
Sensitivity	LF: 101db MF + HF: 102db	LF: 98db HF: 106db	LF: 99db HF: 106db	94db
Freq Response	56Hz – 18KHz ± 3db	64Hz – 18KHz ± 3db	56Hz – 18KHz ± 3db	70Hz – 18KHz m 3db
Dispersion	60-100° horizontal, 60° vertical	60-100° horizontal, 60° vertical	60-100° horizontal, 60° vertical	50° horizontal, 70° vertical
Weight	39.5kg	21kg	36kg	9kg
Box Config	2x 12" LF, 6.5" mid, 1.7" HF diaphragm with 1" throat	12" LF, 1.4" compression driver	15" LF, 1.4" compression driver	8" LF, 1" compression driver
Drive Config	Biamp only	Passive or Biamp switch	Passive or Biamp switch	Passive only

meyer MJF212A
Perspective



L'ACOUSTICS www.randomaudio

	115XT HiQ	ARCS
Retail Price	\$6,915	\$10,400
Power Handling	LF: 450W RMS, HF: 125W RMS	LF: 375W RMS, HF: 100W RMS
Sensitivity	LF: 100.8db, HF: 110.2db @ 2.83VRms	LF: 98db, HF: 109db @ 2.83VRms
Freq Response	65Hz – 18KHz ± 3db	63Hz – 18KHz ± 3db
Dispersion	Axi-symmetrical 50 (± 10)	22.5° horizontal, 20° down 40° up vertical
Weight	28.5kg	57kg
Box Config	15" LF, 1.4" neodymium compression driver mounted on conical waveguide	15" LF, 1.4" compression driver on V-DOSC waveguide & lens
Drive Config	Bi-amp only	Bi-amp only

100 RACK SPACES ON A 17-INCH DISPLAY

In today's demanding world of live sound mixing, you need every advantage you can get, especially when it comes to signal processing. With the VENUE live sound environment, the world's greatest effects rack is at your fingertips.

Choose from over 100 high-resolution TDM plug-ins from the names you know and trust — Crane Song, Drawmer, Eventide, Focusrite, Sony Oxford, TC Electronic and more — then access and operate them directly from the console. With VENUE, you can finally give your live mixes the attention to detail they deserve.

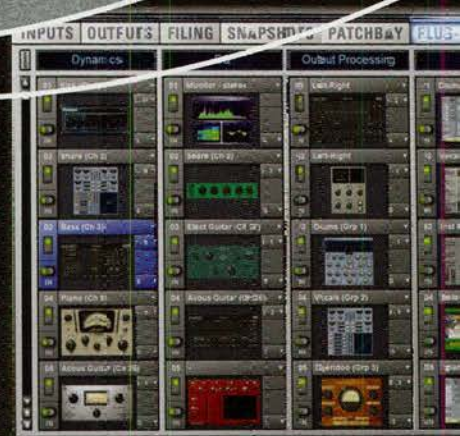
For more information on VENUE, and to learn more about the many plug-ins available, contact Madison Technologies.

DIGIDESIGN VENUE

 digidesign

WWW.MADISONTECH.COM

PH: 1300 4 VENUE



We make it happen

AVAILABLE EXCLUSIVELY FROM:

MADISON
TECHNOLOGIES

TANNOY

Whilst known more traditionally for smooth, warm low end response than sheer output level, Tannoy have come to "the loud party" with a several high powered versions of their V-series boxes. The boxes are available in passive, active, and active with network controllable amplifiers. Listed are below are two of the fairly extensive range.



tannoy

ELECTROVOICE (EV)

The T221M from EV seems to surface in lots of places so it seemed worth a mention. A rock solid box which is barky enough to cut through just about any on-stage sound. Better in pairs with a big amp behind them.



Electrovoice T221M

WAYLOUD www.johnstonaudioservices.com	
	WLA-122
Retail Price	\$2,750
Box Config	2x 12" LF, 1" HF compression driver
Drive Config	Available in Active or Passive models

EASTERN ACOUSTIC WORKS (EAW)

www.productionaudio.com.au

	SM84	SM15	SM200iH
Retail Price	\$6,295	\$5,295	\$4,495
Power Handling	LF: 1000W, HF: 200W Continuous	LF: 800W, HF: 200W Continuous	FR: 500W, LF: 500W, HF: 200W Continuous
Sensitivity	LF: 99db, HF: 110db @ 1W/1m	LF: 98db, HF: 110db @ 1W/1m	94db @ 1W/1m
Freq Response	60Hz – 17KHz ± 3db	75Hz – 17KHz ± 3db	75Hz – 18KHz ± 3db
Dispersion	40° horizontal, 90° vertical	40° horizontal, 60° vertical	90° conical
Weight	36.1kg	33.2kg	26.4kg
Box Config	4x 8" LF, 1.4 in/75mm Exit Neodymium HF	15" LF, 1.4 in/75mm Exit Neodymium HF	12" LF, 2" compression driver on wave guide
Drive Config	Bi-amp only	Bi-amp only	Bi-amp or Passive crossover



JBL 712m

TANNOY www.syntec.com.au		
	V12HP	VNET12HP
Retail Price	\$2,749	\$5,499
Power Handling	Average: 350W, Programme: 700W	Programme LF: 700W, HF: 700W (limited)
Freq Response	67Hz – 23KHz ± 3db	55Hz – 23KHz ± 2db
Sensitivity @ 2.83v/1m	99db (anechoic), 102db (half-space)	
Dispersion	75° conical	75° conical
Weight	28kg	29kg
Box Config	12" Dual Concentric	12" Dual Concentric
Drive Config	Passive Crossover	Self-powered with V-Net remote diagnostics and control



Eastern Acoustic Works

ELECTROVOICE (EV) www.apacaudio.com.au

	T221M
Retail Price	\$2899
Power Handling	Continuous: 400W, Programme: 800W
Freq Response	100Hz – 16KHz (half space @ 1W/1m, on-axis)
Sensitivity @ 2.83v/1m	101db (half-space)
Dispersion	80° vertical, 55° horizontal
Weight	22.3kg
Box Config	12" LF Driver, DH2T HF Driver
Drive Config	Bi-amp or Passive Crossover – jumper selectable

JBL www.jands.com.au

	VRX915M	SRX712M
Retail Price	\$3,945	\$2,695
Power Handling	800W Continuous, 1600W Program (2 hours)	800W Continuous, 1600W Program
Freq Response	70Hz – 20KHz	83Hz – 18KHz ± 3db
Sensitivity @ 1W/1m	98db SPL	96db (passive mode)
Dispersion	50° x 90° nominal	50° x 90° nominal
Weight	21kg	15kg
Box Config	15" LF, 4" voicecoil HF with 1.5" exit	12" LF, 3" voicecoil HF
Drive Config	Bi-amp or passive crossover	Bi-amp or passive crossover

JBL

JBL have monitors in most of their product lines, here we're focussing on the higher end of the range. Wedges to match up nicely with systems like the VRX... JBL factory tunings are available for download from the JBL website.

That's it for now – tell us what your favourite wedge is! Email cx.mag@mac.com



G2 wireless
audio **Setting standards**

evolution

G2 Series 300 & 500



The 300 and 500 series G2 expand the capabilities of evolution range still further.



The 300 series systems offer the use of nine channel banks with up to 8 switchable frequencies per channel.



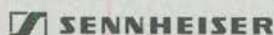
The 500 series (sold as components) offers up to 20 switchable frequencies in nine channel banks.

This allows for optimum flexibility in building a secure system for performance for all kinds of sizes of venue. It also guarantees that your performers will benefit from interference free sound.

Lapel, headset & camera systems also available.

Syntec Australia
1800 648 628
sales@syntec.com.au
www.syntec.com.au

Syntec New Zealand
(09) 263 9885
sales@syntec.co.nz
www.syntec.co.nz



www.sennheiser.com.au

BIRTH OF A ROADIE

By **JULIUS GRAFTON**

My monochromatic childhood was spent on the dirty streets of east Sydney with a brothel next door and a church on the other side. Today's trees were not yet planted and the streets were loaded with smoky trucks and rattling old busses. Dirt was default and no one wanted to live near the harbour because it stunk. Dogs and derelicts roamed free. American GIs on R & R from Vietnam staggered up and down the streets, loaded with bourbon and lysergic acid.

Our black and white TV arrived late since I was 12 before we could afford one, and it didn't reveal music to me. A crystal radio clipped to the water pipe opened my consciousness. My bohemian artist mum had hippy records like Pete Seger and Bob Dylan. I got slightly into Simon and Garfunkel until mum accidentally took me to the place where my rock dreams started.

Mum thought that the Arts Factory in Goulburn street was an acoustic venue where people sat on Persian carpets and nodded politely. They sat on the carpets all right, ripped amidst a hash haze as a band trashed away with a psychedelic lightshow playing out. She retreated but somehow I convinced her to let me, a 13-year-old boy, stay and walk home after.

Those were the times when parents

didn't know things, and the generation gap was as wide as the Grand Canyon.

SCHOOL

Before they expelled me, I hung in the hall to avoid lessons. I couldn't spell or add up. Bruce Jackson who is an audio legend around the world had been there before me, and he left a legacy in the form of a home made mixer, built into the top of a school desk, and based on valve technology. He was already a guru, and at the time he had just started Jands with Phil Story. J and S – get it? They started with lights as well, but fast started to build audio gear out of a shop front in Rose Bay.

But it all ended with the Vietnam Moratorium, where students marched in the streets against conscription. It was self-interest, since no one wanted to get drafted. I went on a poster raid with some senior guys, but it was me who got caught wallpaper pasting a poster over the headmaster's window at midnight.

Cast out of there, I did what any self-respecting 15 year old did – I ran away and worked with rock bands. Lights was my thing, and over the next five years I collected plenty of them.

BREAKS

At the time bands didn't tour with lights. The promoter hired a lightshow.

I was a lightshow. I trucked around with my lights, kind of like a film gaffer. It was cool because I got to meet lots of bands. I remember a real early Air Supply, and also Andy Gibb, deceased junior Bee Gee sibling. But I liked rock the best, and that stayed with me.

A big break: meeting Roger Barratt, who was a leading designer with a lot of equipment and contacts. A fun gig: lighting a party for Johnny O'Keefe who was larger than life. The big gigs: Festival Of Sydney outdoor rock concerts at the Sydney Opera House. I learned theatre lighting from a Richard Pilbrow book. I got to light a stage play, The Cake Man, and really enjoyed a couple of months with a company of actors who are household names today.

Roger taught me how to deal with corporate gigs – we were probably amongst the first to light a show that wasn't a public event, and even way back then we knew to charge a lot extra.

Somehow I ended up doing a lot of work for the number one radio station of the era in Sydney – 2SM. My lighting career faltered when I met a girl and got engaged. She wanted me at home, when I should have been out working. That's a story as old as time.

SOUND

Because lighting technology stalled after the Par can was invented, it got

CHAMELEON TOURING SYSTEMS

LIGHTING PRODUCTION & HIRE

- ✧ LUMINAIRES
- ✧ CONTROL SYSTEMS
- ✧ MOVING LIGHTS
- ✧ SEARCHLIGHTS
- ✧ POWER DISTRIBUTION & CABLING
- ✧ CHAIN MOTORS, TRUSSING & RIGGING

www.chameleon-touring.com.au

SYDNEY
Building 35A, 1A Coulson St
Erskineville NSW 2043
Production/Sales: 02 8596 7222
Rentals: 02 8596 7200 Fax: 02 9557 5445

BRISBANE
25 Helen Street Newstead QLD 4006
Tel: 07 3854 1511 Fax: 07 3854 1563
Email: cts@chameleon-touring.com.au

mundane. Sound was more interesting because the technology was moving forwards. Innovators like Lee Conlon and Wyn Morrow were building new PA systems, and the money was there.

Every band wanted a big PA, and my friend let me cross hire his band's system to other bands. I had a truck, and after a few weeks of finding easy work decided to invest everything in a PA. It cost me \$12,000, and within ten days I had it built up, racked and ready to rock.

My Ford F350 truck, single 3 way PA and Jands 12 channel desk hit the road, with 16 Par cans and 4 specials. I charged \$150 a night in 1980. Adding concert W bins to make a double 3 way PA with a 16 channel desk lifted my asking price to \$250. I had a crew of one, and required the band to supply loaders.

Pretty quick I reasoned that passing over gigs when I was booked was a shame, and turned it into an opportunity courtesy of my new wife Caroline, who I may add was not the fiancé who stole me from lighting. The wife started a production agency, where we co-opted other operators with trucks and production. There were literally dozens of guys doing the production hire thing in the early 1980's, and soon many were on our books.

Caroline was really book at bringing together the band booking and the production, and she charged a token fee to the production guy for giving him work. Of course we took the best work, and via this wonderful enterprise I ended up working 6 or 7 nights and a couple of lunchtimes a week. It was a time of plenty – buy gear, build up inventory, charge more.

MONEY

Getting finance was extremely difficult, and so most turnover went into new equipment. Some suppliers gave 30 or 60 days credit, and I rewarded them by using it. I ended up buying stuff that was second rate, like Altec and Etone speakers instead of JBL, because the JBL importer at the time was not prepared to give me an account.

I got a stack of Jands gear on account, and spent a small fortune with Neil Smith, the famous second hand dealer who was having a golden era buying and selling audio gear.

Right back then, in the formative days of what is now a big audio production industry, I encountered some shabby distributors with negligible after sales service. It's a situation that has played out again in recent years with some of the lighting distributors who are even today grappling with technical complexity and the need for better after sales service.

Back then, we were able to blow up gear easily, and replacements cost a significant amount.

WHY DO IT?

I was there for the music, and I still am. I love the roar of the greasepaint and the smell of the crowd. I love the adrenalin of a late set-up and absolutely believe that the show must go on. And on time. I love being able to pull solutions out of thin air.

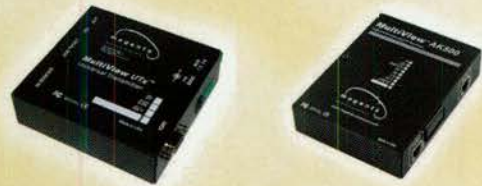
I love the camaraderie of a crew and cast, the talent, the enthusiasm of the fans, the way the air can be cut in a crowded gig or theatre. I love how no matter what, we all leave our problems behind and lose ourselves in the show when the lights go up.

Maybe I'm weird, but I liked the sense of community when the bar maids were washing the glasses after the gig, and the bouncers were telling us about the battles.

I'm a roadie, and I'm proud of it.



Cable Nightmare? Then Untangle Yourself



Are you moving and carrying more than you need to? Magenta's distribution solution is lighter, cheaper and saves space. With easy delivery and flexible distribution of audio, video and control signals over long distances, it gives industry leading performance in transmitting UXGA video up to 457 meters with no intermediary electronics.

Just do the 100 metre equation

Magenta: 1 x UTx, 1 x AK500, 1 x 100m Cat 5 cable
or all of this!

VGA cables: 5 x 20m RGBHV cable, 5 x RGBHV Line drivers, 5 x 20m power cables

Call IDT now and Untangle yourself

IDT - Technology Distributors
Phone 1300 666 099
www.idt.com.au



Disney CRUISE LINE

Is looking for experienced and motivated Entertainment Technicians for:

Theatre (including Wardrobe) Techs
Broadcast and General A/V Technicians

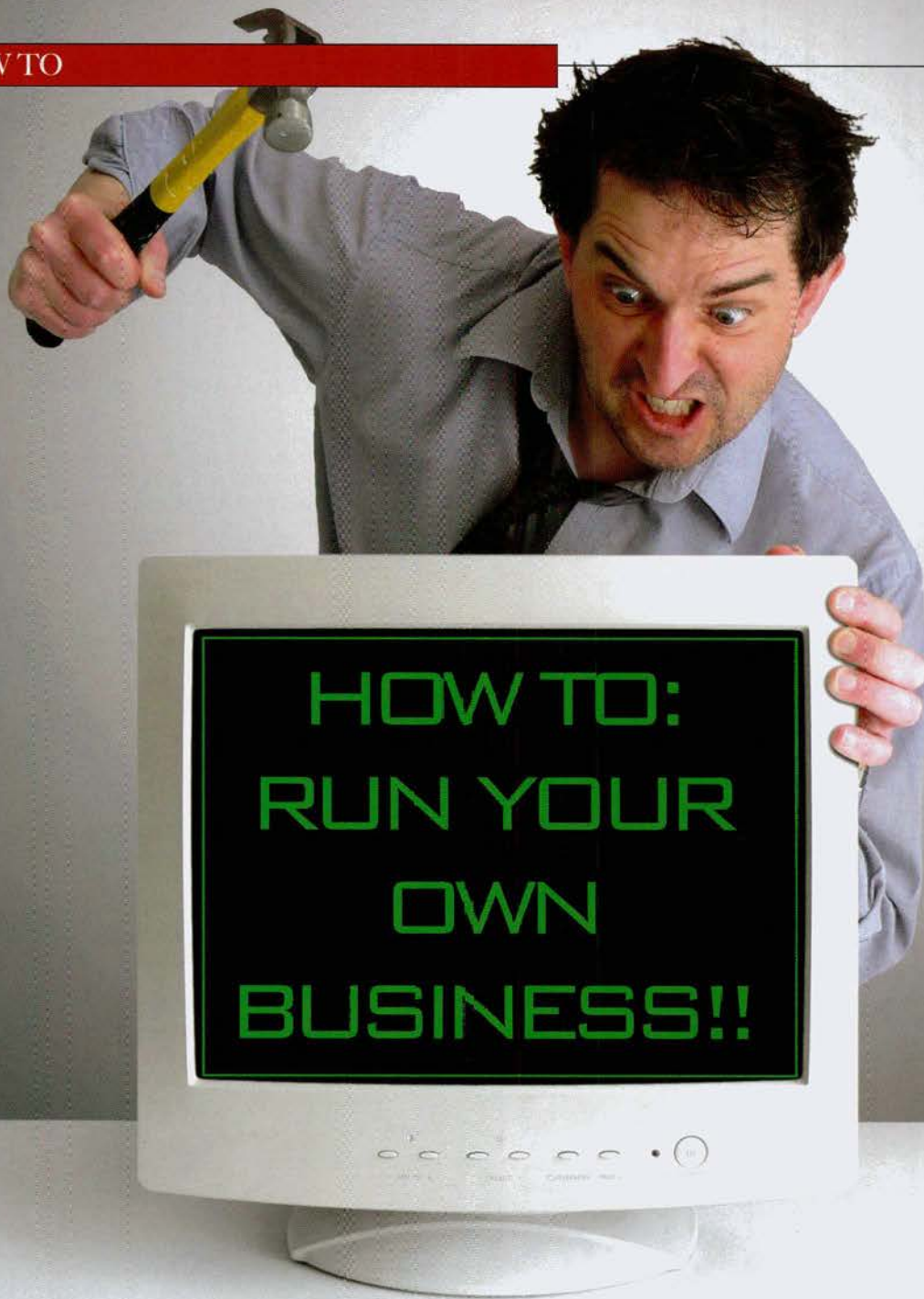
Qualified candidates will have
2 years minimum professional experience.

Please apply on line via DKInternational website
www.cruisestaff.com.au or send your resume to
resumes@dkaustralia.com
www.dkinternational.com.au

"The job and the overall experience gives me the ability to learn to be best at what I do professionally as a Technician." - Andy

www.dcljobs.com

©Disney



By JULIUS GRAFTON

Last time in my 'How To' we talked about how increasing numbers of people in the industry are working as contractors – and how a salary rate of \$16 quickly becomes a company charge out cost of \$26 when you add on taxes and insurances.

But what is the real deal about running your own business? Talk to people working for wages and they often fantasise about running their own company. Many of them buy franchises, which is often like working for a boss except you get to mortgage your house to underwrite the business. Don't start me – the average franchise agreement delivers

everything to the franchise holder and they generally have the right to walk in and boot you out.

I've been blessed – running my own business since I left school around 35 years ago. Best of all, nothing ever went broke, and all the cheques were honoured. I even kept up to date with my tax. 11 companies, many hundreds of staff, countless deals, two divorces, 7 kids and a few royal screw-overs later, I'm here to share the gains and pains.

BE A MINI MOGUL

Phil Tripp, the music industry analyst told us that at my college recently and the students scratched heads until he explained it. He was saying 'be an entrepreneur'. For a

while there the idea was on the nose, but it's never been a bad idea to have ideas and make money from them. This is a story as old as time!

You maybe heard the saying that it's better to try and to fail than not to try at all, because then you'll always wonder 'what if.' That applies as long as you aren't reckless. Don't use it as an excuse for attempting to build a 12,000 seat venue in Dapto after watching the movie 'Field of dreams'. Remember that? 'If we build it, they will come!'

The biggie is to balance risk and face, because being enthusiastic and then facing a different reality is standard fare in business. It seems like very recently I was in the office over a Christmas break, facing a very

different business reality to the one I had planned for. My usual confidante's were away and I was feeling the summer heat alone.

HAVE SOME FRIENDS

I am lucky I have some trusted older heads that I can sit with – they are in our industry and they are usually better at their business than I am. So I love them like a brother, and know I can call on them. But not too often – if they are good (and they are), then they also have a lot of demands on their time.

I've also made sure to reciprocate and am here for anyone who is real and who is reasonable – one saying I like is the one where the dad says to his son, 'Take my advice and do what you like with it'.

One big lesson for me was that I am not always right. It took going to Uni 10 years ago to prove this. It actually showed me that a lot of younger dudes and dude-ettes are cleverer than I am. Actually I suspected this earlier when a 19-year-old flying instructor debriefed me in scathing terms. You need a leveller when you are in business.

WHY HAVE A LEVELLER?

You need an ego to be in business because when things work out you need to celebrate. When you win, people usually congratulate you, if not via affirmation (please do admire our American brothers who get this right) then at least you'll be affirmed by money.

Too much success without a corresponding mix of dross and failure makes the ego bloat. This industry has some greatly bloated egos at every level, and these days the older generation nod wryly to each other when we talk about some of the excesses of some.

You need to partition passion, because having a passion for what you do isn't ego – it's fuel in your tank. You need the right fuel mix to be in business – ego, passion, energy, morality, money and also support of those around you

Starting or running a business when your family are hostile just adds hurdles but plenty of people have pulled it off. I couldn't.

NOW MAKE PROFIT!

Many years ago I sold a business in Sydney called Graftons Lighting to Garth Tanswell who owns Herkes

Electrical. He threw himself into it and worked even longer hours and about six months later I found him slumped over his desk.

"How is it?" I asked. "I'm not making any money", he complained.

What he meant was that his cash flow was poor because he was continuing to reinvest in the business, buying extra hire stock, adding to sales stock, buying a truck. Expanding takes capital, and when the capital comes from earnings the shock is felt in the daily bank balance.

Garth went on to make more than I can ever dream about, and by Management Monetary Measurement (MMM) he is a far better manager than I'll ever be!

The biggest balancing act in business is cash flow and just when you think its all good, June 30 rolls along and you find you've made a profit that carries a tax bill. The next shock is provisional tax, because once the tax office sees some they want more, and you end up pre-paying next year's tax as well.

The burden of two lots of tax in one year often drives nails into successful new businesses, which is why my number one mantra in my college class is 'see an accountant when you start up', as opposed to at the end of the year.

GREED IS GOOD

Not. It's true that you will know of some people in business that would walk over your corpse for a dollar, and many of them will retire and have their dubious gains. But at what cost to their psyche?

The best businesses are those that have a moral code, where customer's expectations are exceeded, and where mistakes are fixed. The beauty of the internet era is that we all read blogs and user driven reviews. These days we can know who is real and who is not.

Inside entertainment you still get shonky promoters (think about the previous management at the Metro in Sydney) and you still get product importers who provide abysmal after sales service. Some production companies shift specifications and deliver late or faulty. Others charge you for things that should be free. I love it how some AV companies itemise the microphone clips (\$1.00 per day) and the hook clamps (0.50c). Eventually people notice and take

CONTOUR ARRAY™

The ConTour Array bridges the gap between conventional PA systems and large touring line arrays. Today this new system is the first of its kind to put this technology to efficient use as a cost-effective package for many sound reinforcement scenarios. Now even performances on a limited scale can get into the professional line array game with ConTour Array. Alongside excellent audio quality, this line array is all about light weight, versatility and easy practical handling. A Self Powered, highly scalable solution, the ConTour Array is in itself amazingly flexible.

For even greater flexibility, the processor in the self powered subwoofer has the parameters to be combined with 8", 12" and 15" ConTour Series speakers.



The CT 112 & CT 115 are Hi Powered passive speaker cabinet that may also be configured in bi-amp mode. Offering an extended low frequency range and featuring a dual-purpose housing, it can serve as a FOH speaker as well as a stage monitor.

The CT 108 is an extremely compact, passive public address / full-range speaker cabinet. Featuring a dual-purpose housing, it may be employed as a FOH or delay speaker as well as a stage monitor.

HK Portable
AUDIO Sound

For more information and supplier list
<http://www.cmi.com.au/branddetective>

silent revenge.

Don't be bad, make your own standards and stick to the script. Best of all, back up your staff, and be consistent.

Don't die alone. And do give some money to charity – it's tax deductible.

THE LAW IS AN ASS

We need the rule of law to avoid anarchy and we need the legal system. The best thing to do in business is to avoid legal trouble, but when shafted be ready to stand up for yourself.

I have a file of extremely rude letters, sent to me by lawyers who are taught in year one that a rocket letter may demolish a less informed person. It is a legal form of bullying, and these days I read this kind of letter with a half smile and apply a score out of 10.

Where under threat, take your time, because no lawyer can get you into court quickly, and the first hearing will be for directions only. A lawyer deadline is a line in the sand, and if you panic you'll throw yourself at the mercy of another lawyer – yours – who could rack up your costs by letting you cry over the meeting table and by engaging the other side

in useless skirmishing.

Keep your head, carefully consider things and do not break the law.

YOU NEED PEOPLE

Good people are hard to attract and you need to hold on tight to them. This is an obvious statement – so look around and see how others motivate, reward and retain staff. But be careful because there are plenty of enterprises with long serving staff who are actually parasites and not commercially attractive!

Make a choice between people who want to be institutionalised within your walls, and people who want to grow with you and then ultimately move on. Strangely some employers want the former, they don't want 'their' staff to take 'their' secrets to a competitor – so they choose less able people, reasoning they will be less able to wander.

I like to celebrate if someone who works for me is moving up and on, so long as it is within his or her reasonable ability to do so. No one likes losing staff under any circumstances.

Staff shouldn't be called staff either; it reeks of a pecking order. 'My people' also sounds odd to me. I

prefer to think of colleagues, and always seek a strength in my colleagues that I can remind myself about. I'm delighted that every one at my place of work has at least one strength beyond my own, and often more.

Everyone makes mistakes and gets into an occasional scrape, and if you want to get paranoid and worry then you will. I saw a sign on a Church noticeboard: "Worry is like a rocking chair. It'll keep you busy, but get you nowhere".

YOU NEED A PLAN

A year ago I sat through a two day audit where the education regulator picked over our college procedures and assisted us with some improvements. It is a standard occurrence when you are a registered training organization.

The part that stopped me in my tracks was when the auditor pulled me up about my business plan. She suggested I visit a small business centre and get some help. After initially being affronted I realised she was just trying to help, and I redrew my plan to better satisfy her.

I can honestly say that a lot of businesses are run on chaos theory,

Not just good looks...



Introducing the new range of Bosch Sound Projectors
The stylish shape of a new force in sound.....

Bosch has now put its highest-performance speaker technology into an exceptional design: the **Bosch Sound Projector Series**. Completely concealed wiring means that they can be seamlessly integrated into a vast range of different interior styles. With remarkably wide tonal range, the **Bosch Sound Projectors** provide great sounding music and perfectly intelligible speech in noisy spaces and over long distances. Fully EVAC compliant, they can be relied upon in extreme circumstances. When visual appeal has to be matched by absolute reliability, superb sound quality, all at a very economical price, **Bosch Sound Projectors** are the ideal choice.

Find out more about **Bosch Sound Projectors**, contact Product Manager Chris Dellenty on 02 8282 6702, email chris.dellenty@au.bosch.com or visit www.boschsecurity.com.au



BOSCH
Invented for life



and half the time you need to make it up as you go. But having a plan, even one that changes all the time, is better than not.

FINALLY.....

There are days that you would toss it all in, but make sure first. I once announced I was closing down my business and told my colleagues who naturally started job hunting. The next day I had changed my mind.

I know others who've done similar.

Always sleep on bad news because tomorrow is a new day.

Also consider what you'd do if you did quit. I sold everything in 1989 and went bush with the family. For six months it was great, but after building a house with my own hands, and touring Europe, came the long winter of 'what next?'

I made the classic mistake and purchased a business I didn't understand, which happened to be a coffee shop. A week later I got a call from Paul Mulholland at Jands about starting a magazine.....



Ideal for any installation!



NEW

DN-A7100

Professional AV Surround Preamp

Introducing the new DN-A7100 Professional AV 7.1 Surround Preamp from Denon Professional. The DN-A7100 is compatible with the most advanced surround sound formats and because of its unique design, the DN-A7100 is ideal for any installation that requires high-quality, channel separated audio outputs on 8 true balanced line-level outputs.

From big installations with many multiple amps driving line array systems, to small boardrooms and private cinemas with active monitor systems, the Denon Professional DN-A7100 is the most affordable and professional option.

Applications:

- ▣ Corporate Boardrooms
- ▣ Private Theatres
- ▣ Screening Rooms
- ▣ Post Production Monitoring



DENON
PROFESSIONAL

audioproducts
Group

Australia:
Call +300 13 44 00 or visit
www.audioproducts.com.au

New Zealand:
Call 0800 111 450 or visit
www.audioproducts.co.nz

AUSTRALIAN WIRELESS AUDIO GROUP

INDUSTRY BRIEFING

Our lead story this month details industry fears that the proposed shutdown of the analogue TV spectrum will render most wireless microphones and in-ear monitor systems useless. This briefing paper by The Australian Wireless Audio Group (AWAG) better details the state of play.

The Australian Wireless Audio Group (AWAG) has been established as a result of proposed changes to the allocation of radio frequency spectrum. These changes will impact on the users of current ultra high Frequency (UHF) radio microphones, in ear monitoring systems, communication systems and other radio transmitting devices used with guitar s and other musical instruments. As things currently stand these products will not be able to be used beyond July 2009, when the proposed new spectrum rules start to apply. However, slow uptake by consumers of digital set top boxes may result in the government postponing this commencement date for a period of time. This does not mean that the suppliers and users of these devices can afford to wait until then to act.

The group is being led by the Australian Music Association (AMA), whose members are the importers

and retailers of the majority of the radio microphones and other related products used in Australia.

BACKGROUND

The impact on the use of wireless audio products comes from soon-to-be-adopted changes to TV broadcasting and other changes that may result from the increasing demands placed on the wireless spectrum by all its users. The proposed changes are not aimed solely at wireless audio users, however, the use of these products in the future will likely be impeded as a result of the changes to TV broadcasting. The threat to wireless audio products comes as a result these products sharing some of the same radio spectrum with our current analogue TV broadcasters.

To explain. Several years ago the Australian Government announced a series of proposed changes to television broadcasting which

ultimately results in the shut down of analogue TV broadcasts and a move to digital broadcast. At this stage the change over date is scheduled for July 2009.

Similar Government actions were announced in the UK, Europe, Canada and the US, so we are not alone. We can benefit from observing and learning from similar groups to AWAG their approaches to resolving the issue in those territories with their regulators and governments.

Digital television has many benefits not least of which is the ability closely position or stack a number of TV stations in a much smaller part of the spectrum than can be achieved through analogue broadcasts. Put simply, digital broadcasts are much more efficient in terms of radio frequency spectrum use than analogue broadcasts.

By taking this action governments around the world now have what they call the 'digital dividend'. The

shift to digital means that the previously occupied space by the analogue TV broadcasters is reduced significantly. Therefore there is high value spare capacity within the spectrum that can be sold off. The most likely buyers of this spare spectrum are the telecommunications company's such as Telstra and others.

This 'digital dividend' is potentially worth billions of dollars to governments as the Telco's have business opportunities available to them that will generate vast amounts of income. All they need is the spectrum to be made available to them. Ultimately part or all of the existing analogue TV spectrum will be made available to them at a price.

The extent to which this spectrum is valued can be demonstrated by the UK Government's investment of over £1.5 billion (AUD\$3.6 billion) to provide UK residents with digital set top boxes and therefore force into redundancy existing analogue broadcasts in favour of a switch to digital TV broadcasting. The Blair Government clearly believes it can sell the spectrum made available through the digital dividend, subtract

the £1.5 billion in grants to UK households for the set top boxes and still return a healthy financial dividend to treasury. We have no doubt that the underlying mathematics of this notion is correct. The bottom line here in Australia is that any Government, whether it be Coalition or Labor will find the lure of what is likely to be billions of dollars in income as a result of the 'digital dividend' too compelling an opportunity to ignore.

Defence and other Government organisations are also hungry for more radio spectrum.

In short radio spectrum is a limited, high value resource.

The current Howard Government has ruled out the kind of pump priming measures used in the UK to force the switch to digital, though the position of the Labor opposition is less clear.

The end result of consolidation of radio spectrum through the adoption of digital TV and the resulting sell off of the now vacant spectrum will mean that's that there will be no space for wireless audio products in which to operate. That is unless action is taken by both the suppliers and users now.

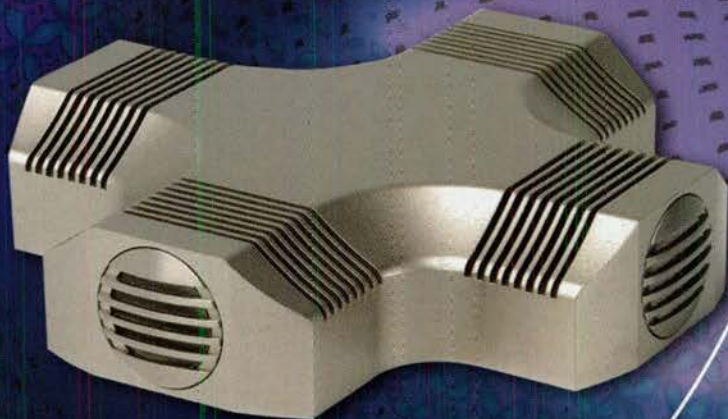
TECHNICAL INFORMATION

While it is not our intention to burden our user groups with lots of technical information we believe it would be an advantage if our key user groups have at least a rudimentary understanding of how wireless audio products currently work and how they might work in the world post the digital dividend.

1. Broadly speaking wireless audio products operate in the same piece of the radio spectrum as analogue TV broadcasts. This is known as the 520-820MHz frequency band. Wireless audio products can currently share this piece of spectrum operating in the gaps or 'white space' between the comparatively widely spaced TV stations.

Wireless audio products currently share this spectrum under what is known as a class license system. This allows wireless audio users to access free spectrum provided that the products they use conform to a number of mandated standards. These standards are mandated by the Australian Communications and Media Authority (ACMA), a Federal

**OUR MICROPHONES
ALL PICK UP ONE
DISTINCT SOUND ...
CUSTOMER SATISFACTION.**



CLOCKAUDIO

We make it happen

Clockaudio microphones are now available exclusively in Australia through leading supplier Madison Technologies. Clockaudio is widely admired throughout the professional audio industry for their customer-focussed range of products and dedication to quality. But unlike others, Clockaudio products are affordably priced so whatever your needs you can take advantage of Clockaudio's world-class microphone technology.

Find out more about the versatile range of Clockaudio microphones by contacting Madison Technologies today.

**SALES ENQUIRIES
PH: 02 9748 1911
WWW.MADISONTECH.COM**

AVAILABLE EXCLUSIVELY FROM:

MADISON
TECHNOLOGIES

statutory authority. Under this class licence system users are not required to register their products. While the lack of registration is convenient for users it has resulted in a corresponding lack of awareness within the ACMA as to the extent to which these products are used in the community. This has also been the experience in the US and the UK.

In recent years our industry has been supplying around 32,000 wireless audio products annually to Australian users. We are therefore of the opinion that there are at least 100,000 units being used on a regular basis with Australia.

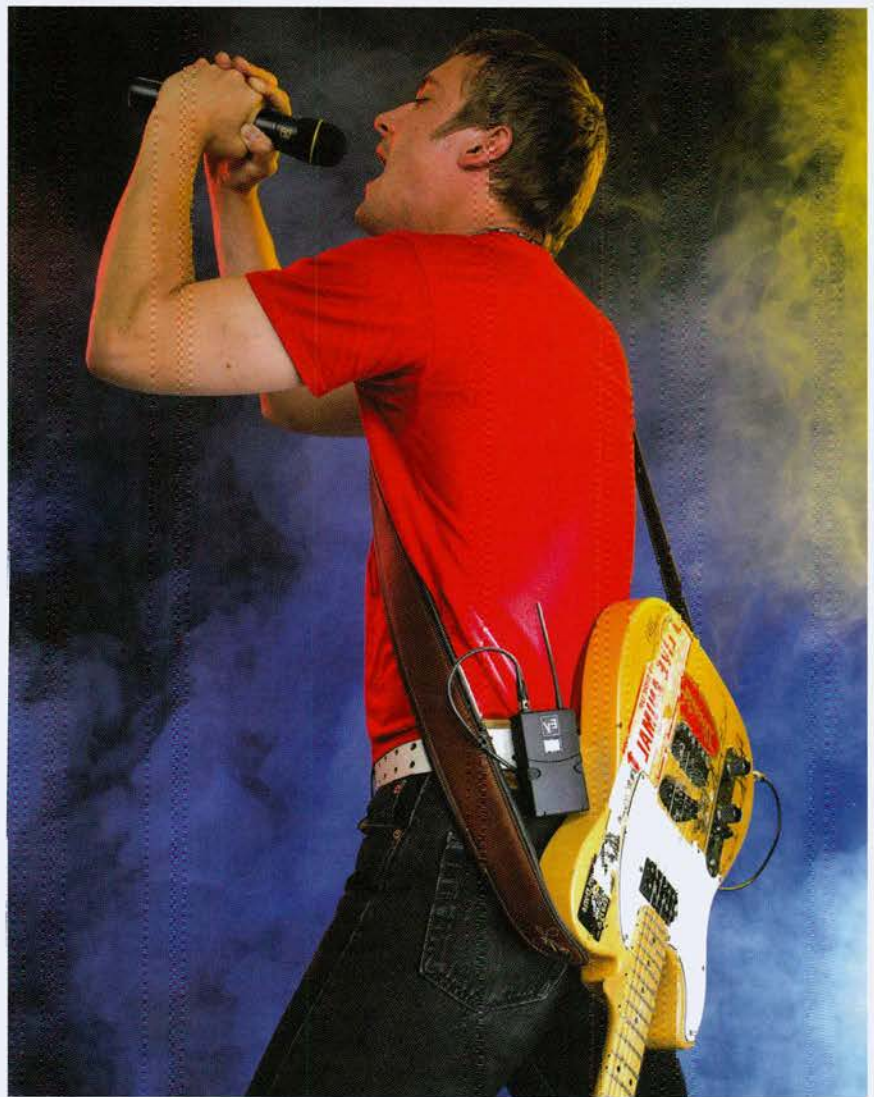
Part of the action we are proposing seeks to educate and inform the ACMA and the Department of Communications, Information Technology and the Arts (DCITA) as to the extent these products are used.

The re-allocation of the spectrum as a result of moving to digital TV and the subsequent sell off of the 'excess' spectrum will mean that there is likely to be no 'white space' available for wireless audio products under the ACMA's proposals or that the space left is insufficient to meet the needs of the existing users- let alone new users in the future.

The use of a wireless audio product alongside other uncontrolled wireless products, given current technologies, is likely to render one or the other useless as two signals cannot operate in the one space at the one time. The device with the stronger signal will be the winner, the weaker signal either degrading to a high degree or dropping out altogether.

2. Wireless microphones and other wireless audio products have several unique characteristics. To do the jobs that users require of them wireless audio transmitters have to have the following attributes:

- Real time operation – a 100% duty cycle is necessary for live entertainment and frequency sharing is not possible. Real time operation means you are hearing the amplified version of your voice at the same time as you are saying something into the microphone. No lag or delay. Furthermore each device needs its own exclusive piece of spectrum or frequency in which to operate
- High quality audio – existing products reproduce voices at the equivalent of CD quality. It has greater than 100db dynamic range



and channel bandwidth of around 200kHz. While some applications requiring just the spoken voice might require a lesser capability any use with respect to singing or in the case of in ear monitoring the use of music requires these high quality dynamic capabilities.

- Radiated power – up to 50mW with a typical range of 100metres. Again some applications might require a smaller range but any outdoor or large venue application will require these kind of outputs to ensure reliable performance.

Highly respected and experienced wireless audio engineers are examining a number of potential alternative technologies, however, at this point of time and for the foreseeable future the alternatives such as Bluetooth, WiFi and digital radio mics are unable to perform at the levels detailed above. All three alternatives have latency issues, that is to say that they cannot operate in real time making them next to

useless for the majority of applications

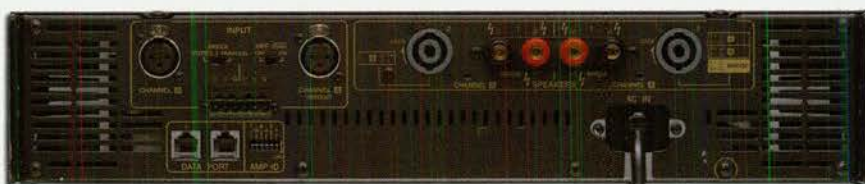
While the major manufacturers are continuing to work on developing new products that overcome these issues the reality is that the current technologies are not likely to be superseded any time soon. Put simply, the best wireless audio tools and solutions are the ones currently available to users.

3. Whatever technological solutions are developed in the future, audio wireless products will need some radio spectrum in which to operate. Advances in technologies may see products in the future being operate effectively or lower radiated power outputs or be capable of using a narrower bandwidth but there is no doubt that some spectrum will be required.

There is therefore a real need to work with the ACMA and DCITA to secure the spectrum required by both industry and community user groups



The demands of your power amplifier setup.



Solved.

Power: 2 x 2500W for the T5n and 2 x 2200W for the T4n (Stereo at 2 Ohms, 1kHz, THD+N=1%) gives you the power and efficient operation you need under low impedance conditions. This makes the Tn Series ideal for powering line array systems on the road or large-scale installations.

Price: \$6,000 RRP for the T5n or \$4,800 RRP for the T4n means you can't refuse this kind of power, quality and safety in such a cost-effective package.

Quality is demonstrated in the Tn Series' world-class sonic performance. Yamaha's exclusive EEEngine amp drive technology ensures pristine and accurate sound with remarkably low power consumption all night, every night. *Ask us for a demonstration now.*

Certified to run safely at 2 Ohms by Underwriter Laboratories, Inc. and Intertek ETL SEMKO, the Tn Series gives audio engineers complete confidence across the widest possible variety of sound reinforcement, installation and touring applications. *Are your amplifiers certified?*

The solution is Yamaha.



For more details on Yamaha's complete Commercial Audio solutions, go to:
<http://www.yamahamusic.com.au/products/commaudio>

Yamaha Music Australia, Commercial Audio Division
P.O. Box 268, South Melbourne VIC 3205

The Tn Series has arrived.



HISTORY

How it was, and how it is. From the pages of Channels and Connections – the earlier version of what you are now reading, and edited by exactly the same person.

15 YEARS AGO JUNE 1992

Channels goes full colour! At least the cover was, and entirely due to the guys at Light Audio Video Australia, aka Show Technology, who trumped up the dollars for a full colour rear cover advert for the Clay Paky Golden Scan 2. Applying full colour meant an extra process involving a third party provider of colour film and proofing.

What have we here?

High production values was the cover story for Channels Magazine as the Diamonds and Pearls tour hit town, with the artist formerly known as Prince. Well that's his name again these days; the tour had 13 trucks, 67 non performing staff and came complete inside 2 x 747's. Paul Dainty added an extra outdoor concert in Sydney at the end. It was simply a fantastic concert.

Concert for Life

A major fundraiser turned into a nasty fight when some providers discovered they had worked alongside others who were paid.

We dug into who got what, and discovered that while the Newcastle Earthquake Appeal Concert was staged for a modest \$160k, the Concert for Life cost a ludicrous \$1.2 million. Reputations were tarnished, and deservedly so. It was an excessive ego trip masquerading as a charity concert.

Strand anoint Bytecraft

And so it started for Stephen Found, as Strand dumped their briefly appointed agent Startec in favour of Bytecraft. The rest is history, especially since Bytecraft has been sold three times since – once when the partnership split, with Automation wandering off and changing name to State; once when Tattersals purchased Bytecraft and again when that

Bytecraft was split into two with Staging Connections just trumping up \$42.5 million for Bytecraft Entertainment. What a powerhouse the Blue and Black Bytecraft became, and it all started back here.

What things cost:

A JBL MR series 2 way speaker box, 12" and horn: \$1199. That was the cheapest professional box on offer at the time. 8 channel Soundcraft Spirit mixer: \$2,495. A Colourset Par 64 scroller: \$1,470 plus sales tax.

What we drove:

Nothing cost under \$20,000 – the \$15,000 drive away Hyundai was a few years off. We think today's car prices are actually well under what paid in 1992, when adjusted for inflation.

How big was your phone?

The Motorola brick was the mobile option, and these were in a holster. Email? What's that? Unless you used CompuServe, there really wasn't any until around 1994 – and the first world wide web demo at ENTECH wasn't until 1996.

10 YEARS AGO JUNE 1997

Connections boasted a new glossy cover design, and was put together by a large team by today's standards. We had an office suite at Epping with lots of Apple Macs and people bumping into each other. The (then) publishing duo were married and traveled to four or five trade shows overseas every year. Those days we had long lunches and spent all our revenue putting the magazine together. Since then we learned how to do it better, got profitable, eat sandwiches and spend all our profits subsidizing our college.

Live Consoles

We detailed the state of the market, and it's instructive what was out there



and what it cost in 1997 dollars. Behringer had arrived and were squeezing retail prices down, Mackie were on a roll and Allen & Heath were cleaning up with the GL3000/24 at \$9,950. Yamaha's O3D digital mixer was 6 grand, while at the top end a Midas XL200 started at just \$99k. Yamaha's O2R retailed at 14k, while a PM 4000 would set you back \$135,000. Contrast that with today – you get a whole lot more for a way lot less!

Tracking Guide

We were tracking who was recording where in our monthly BASF Tracking Guide. With the exception of Trackdown Studio we don't know of ANY of the 100 studios listed in 1997 surviving! It really was a dying artform, and makes a joke out of the 'Studio Audio' courses which are still sold to hundreds of impressionable kids a decade later. Yep, there is that elephant in the room again.....

Savage Garden

A terrific cover photo heralded a tour report, and the band of the hour was Savage Garden. Meantime Julius interviewed Jon Lemon, a great Aussie sound engineer based in the UK, who was here with Live, using a Turbo Flashlight system.

Sega World

'Sydney's Largest Attraction' became saga world and collapsed, because no one understood what it was. It was a kind of indoor theme park, but also an expensive pinball parlor. The site still stands in eastern Darling Harbour, a true white elephant.

What it cost:

Altman Leko \$472, ETC Source 4 \$990, Selecon Acclaim 1200 zoomspot \$1,700.



6.0 MHz

..are you OK with your 96KHz?



VFD 2.0
Mid / High
Enclosure



VHD 1.21
Single 21-inch
Subwoofer System



ES2.5
High-Output Active
Driven Bass Module



ES1.0
3-Way Mid/High Active
Loudspeaker

Attention All Production Companies, Installers and Venue Owners

When making your next serious purchase of Live/Playback audio systems consider the s. KV2 ES and VHD systems incorporate DSD™ Technology which gives you 6.0 MHz digital sampling - as opposed to the 96KHz industry standard.

The future of live sound is surprisingly clear. KV2 Active. Driven

Step up and you'll hear the difference contact:

KV2 AUSTRALIA • PO BOX 9204 • WYOMING • NSW 2250

PHONE (02) 4329 0062 • MOBILE 0422 385 940 • EMAIL davew@kv2audio.com



KV2 Audio Specialist Dealers:

WA Kosmic Light & Sound Venue Technical Services	(08) 9470 1558 (08) 9295 0539	Pony Music Pro Light & Sound	(03) 9702 3244 (03) 9579 2332	QLD AudioVision Dominica Sound Pacific Music	0419 758 650 (07) 5593 8193 (07) 4051 1499
SA Derringers Music	(08) 8371 5268	NSW Lots Of Watts Turrumurra Music Centre	(02) 9638 0302 (02) 9449 8487	NT Top End Sounds	(08) 8980 8222
VIC Hitek Audio Video	(03) 9432 1744				

get the complete story www.kv2audio.com

RED INK TATTOOS

Kerry Jewel is an entertainment theatrical entrepreneur with a string of misses to his name. But he still manages to find investors, writes Paul Bibby in the Sydney Morning Herald

The foyer of the Quality Hotel Cambridge in Surry Hills was a sad sight. Sprawled across the floor of the modest, sparsely decorated space were 170 members of the Tongan Royal Corps of Musicians, the OzScot highland dancers and a large contingent of British military paradesmen. Heads were bowed; few were talking.

The young men were part of a large contingent of performers from across Australia and the world who were involved in the Tattoo Spectacular 2007 - a lavish military stage show, billed as one of the entertainment events of the year.



Don't Put Strange Things in Your Ears!



Audio-Technica puts pure, clear, powerful audio in your ears – nothing more, nothing less. That's how it should be, nothing added, nothing taken away. Just superb reproduction - your ears will love it! So put some Audio-Technicas on your head and feel the difference. iPod, Pro Studio, DJ, Broadcast, Hi-Fi, In-Fi ght. And leave strange things in the ocean!

Studio



M50 \$395



A Series
From \$245



AD Series
From \$145

Pro DJ



Pro700 \$375



Pro500 \$275

Noise Cancelling



ANC7 \$445

In Ear



CK9 \$375



CK7 \$175

iPod



ES7 \$279



ES3 \$149



EM7GM \$165



EC700 \$215



CK6 \$89



Check out the full range at your Audio-Technica dealer or call TAG for more: P: (02) 9519 0900. E: info@tag.com.au

 **audio-technica**
always listening.

By PAUL BIBBY

After travelling thousands of kilometres and performing their hearts out in Perth, the young performers arrived in Sydney to discover the shows at Acer Arena and Brisbane's Ballymore Stadium had been cancelled.

When they returned to their hotel, dejected and unsure of what would happen next, the dancers and musicians found the cheques used to pay for their rooms had bounced. They were out on the street.

The hotel's manager, Steven Gargano, was left to deliver the bad news. "We can't continue to accommodate all of them unless they have the funds to pay for the room themselves," Gargano told the Herald. "We're doing our best to find somewhere else for them to stay."

As the performers sat in stunned silence, the man being blamed by many of those involved for the show's demise was in his well-appointed, three-storey home on Sydney's north shore. Kerry Jewel, the director of the show's production company, Pinnacle Entertainment, had gone home.

"I have nothing to add to the statement I have already made," Jewel said before closing his heavy timber door last week. "If you want any further comment you can speak to my lawyers."

Jewel blamed the meltdown on the show's major investor, Wentworth Chalmers - who, he said, had "acted in an unprofessional, underhanded manner".

In reality, the shows were cancelled because Jewel failed to pay at least two of the supply and stage production companies. One of these companies, Chameleon Touring Systems, had threatened to pull the plug on the Perth performances the week before.

Chameleon agreed to work only after Jewel promised to give it some of the takings. But it turned out this money may not have been his to give.

Wentworth Chalmers sought, and was granted, a Federal Court injunction that froze the box office proceeds, leaving Chameleon, the transport company ATS Logistics, and other suppliers with no choice but to pull out.

"When it got to the point that we and the other suppliers had done the Perth show, then trucked everything to Sydney, and still not been paid, we decided that was it," the chief

“Over the past 20 years Jewel has been associated with a series of disastrous stage productions and failed entertainment ventures. He has left behind a bankrupt company and a trail of out-of-pocket performers, suppliers, production crews and creditors.”

executive of Chameleon, Tony Davies, says. "It was a disaster from Mr Jewel from the start."

As news of the cancellation spread, the Herald was inundated with emails and phone calls expressing shock and anger at the extent of the collapse. But to some in the industry, the meltdown was no surprise.

Over the past 20 years Jewel has been associated with a series of disastrous stage productions and failed entertainment ventures. He has left behind a bankrupt company and a trail of out-of-pocket performers, suppliers, production crews and creditors.

Yet somehow the self-styled "entertainment entrepreneur" manages to find investors willing to sign up to each new venture.

The question is not so much why his latest show collapsed, but why anyone invested in it in the first place.

Remarkably, the 2007 Spectacular is the second year in a row Jewel has been involved in the collapse of the military tattoo-style stage show. He had a central role in the collapse of the 2006 event as a director of Showman International - a company which is now under external administration.

Ticket sales for the 2006 show were poor from the start, a fact that one investor, Thomas Luxman, puts down to what he calls Jewel's inept marketing. "He just seemed to have no idea about how to methodically go out there and promote a product," Luxman says. "He was great on the hard sell, but had no idea about details."

Luxman lost every cent of the \$400,000 he invested in the 2006 tattoo, while Jewel walked away with a \$135,000 producer's fee.

"The total losses on the show were in the order of \$900,000, but Jewel

had the hide to promote the 2007 event on the back of last year's success," Luxman says.

"He comes up with these wonderful ideas and is just immensely charming: silver-tongued and very convincing."

But as the 2006 tattoo fell apart, Jewel's sweet nothings turned sour.

"He played on our emotions to keep us on board," Luxman says. "By the end he was just attacking us - myself, my wife, my son-in-law. As far as he was concerned, everyone was responsible except for him."

"There is no way we would have signed up for it if we'd know what kind of man he was."

Luxman and his fellow investors would not have had to look far.

In 2000, Jewel was involved in the demise of Peter Pan the Musical, then dubbed Australia's biggest financial theatre disaster.

Based on the classic tale by J.M. Barrie, the \$14 million production was heralded as a much-needed shot in the arm for the country's sluggish music theatre industry.

Despite being involved in the failed 1996 production of Pan, Jewel was made the show's Australian executive producer by the German production company Musical Entertainment AG.

It was a role he revelled in, says one industry source. "Jewel and his wife bought matching Jaguars with matching number plates saying PAN 1 and PAN 2," the source says. "He was strutting around as if he owned the place."

Weeks before Peter Pan the Musical was due to open at the Capitol Theatre, the flamboyant producer was sacked by Musical Entertainment AG on the grounds of financial mismanagement. Jewel took Musical Entertainment AG to court claiming copyright ownership and "worldwide artistic production control" of the production.

The entrepreneur Kevin Jacobsen was called in to save the show, but it was forced to close after a 10-week season plagued by poor ticket sales, leaving creditors with a fraction of the \$14 million they had invested.

Few of those involved in the venture will talk about its demise, but one crew member described Jewel's involvement as "an example of appalling financial mismanagement".

"It seemed pretty clear from the start that he saw Pan as his ticket out of the financial troubles he was experiencing at the time," the crew

member says. "It was rumoured that he had a second mortgage on his house and some pretty serious credit card debts with more than one bank.

"I'm not sure how he managed to get the job after the disaster in '96. He just seems to have the ability to convince people that he is 100 per cent committed to their venture. You really get the impression that he believes it himself."

Jewel's remarkable powers of persuasion go some way to explaining why investors, artists and others continue to sign up to his productions.

Clive Burcham, a creditor involved in Jewel's failed 2006 Anzac International Military Tattoo, describes Jewel as "a remarkable sweet-talker". "He's got the gift of the gab and gives the impression that there is a pot of gold at the end of every rainbow"

Burcham says.

"He's the flamboyant businessman-showman who loves to talk about his connection to the stage - that he was born into the entertainment industry as if he has some God-given right to be there.

"Then when things start to go bad he's nowhere to be found. My advice to people is don't get involved with him. Don't get involved with anyone until you've checked them out."

Jewel has consistently promoted himself as "having the stage in my blood". Born in England in 1947, he was christened at the London Palladium with Laurel and Hardy in attendance and is fond of reminding people that he has "four generations of entertainment blood in his veins".

Jewel worked for some years as a stand-up comic around Australia and overseas before moving into theatre production.

In 1998 tragedy struck when Jewel's 23-year-old son, Dale, fell through an opening in a stage lift well while working as a deputy stage manager on the New Rocky Horror Show. Dale Jewel died a week later at Royal Prince Alfred Hospital from his injuries, prompting Kerry to briefly retire from the industry.

Luxman and Burcham appear simply to have fallen under Jewel's spell. But as persuasive as the 60-year-old can be, this alone does not explain why investors, creditors and others in the industry continue to sign up to his ventures. Some even appear to have done so in full or partial knowledge of his previous failures and controversies.

So why do people keep handing cheques to Kerry Jewel?

The answer, according to the freelance tour manager Frank Harlow, stems from the lure of the "bright lights and glamour of the entertainment industry"

"These people seem to think that show business is sexy, that by signing up to invest in a show their names are somehow going to end up in lights," says Harlow, who has been associated with several Jewel shows. "The fact is that it is hard work, risky, and not glamorous at all.

"The unfortunate thing is that when we see artists left standing in hotel foyers and suppliers left high and dry, it does serious damage to the reputation of the industry. We cannot afford to have people overseas looking at us and laughing. But unfortunately, that's what they're doing."

As published in the Sydney Morning Herald on May 12, 2007. Reprinted with permission.



PROFESSIONAL AUDIO SYSTEMS

THE NEW NEXIA VC AND NEXIA TC
DIGITAL SIGNAL PROCESSORS
WITH BUILT-IN WIDE-BAND
ACOUSTIC ECHO CANCELLATION.



nexia^{TC}



nexia^{VC}

WHEN BIAMP LAUNCHED NEXIA,

it was hailed as one of the coolest products of the year. Now, Biamp have done it again — with Nexia VC and Nexia TC. These intuitive, network-ready processors provide a full range of audio routing and signal processing features, including full wide-band acoustic echo cancellation in single, economical, easy to install boxes.

Designed specifically to provide crisp, clear audio in any videoconferencing or teleconferencing application, these processors deliver true 20 Hz to 20 kHz bandwidth during multiple participant conversations.

RECENT INDUSTRY AWARDS

BIAMP NEXIA TC:

"Pick Hit Award," *Sound & Video Contractor*
InfoComm 2006

BIAMP AEC2w CARD:

Voted "Most Innovative Audio/
Videoconferencing Product for 2006"
at InfoComm 2006

BIAMP **audioproducts**
Group

Australia:
Call 1300 13 44 00 or visit
www.audioproducts.com.au

New Zealand:
Call 0800 111 450 or visit
www.audioproducts.co.nz



WHICH KIND OF TECHNICAL PERSON ARE YOU?

The tribes that make up the entertainment technician community come from defined subcultures. The CX team met in our creative suite at the Family Inn beer garden for a trip down reality lane. Have we managed to alienate YOU? If no, we missed your subset! If not mentioned here, let us know!

This is what we came up with, and remember the below tribes contribute to all disciplines – lights, sound, video, management – you name it.

GEAR FREAK, AKA NERD

Back in the 80's the nerd really was one: a computer geek immediately identifiable by clothing and pasty complexion. But these days they come in various disguises. The thing that typifies this common species is the extent to which it utilizes the laptop. They can also be found downloading the very latest version of anything at all; and then staying up all night to debug the system – which is not compatible with the very latest version.

MUSIC FREAK

They love Al Jerrax. G no Vanelli, Basement Jaxx and anything with complex timing, man. Or jazz. or world music. Yep, the Music Freak is a handy tech to have around when a Hersheban Nose Flute, Daxophone or a Gitarangi da Gamba is wheeled out on stage. Being a real fan of music is a definite plus, and the strange creature you sometimes meet who actually doesn't like music is often also a pretty cool tech. Why are YOU here, anyway?

LIFESTYLE ROADIE

These just really dig the lifestyle, they love sleeping on a bus or in an economy airline seat. They usually have no fixed abode, and look lost in between tours. Many have trouble with nourishment and substance dependency, and all have the innate ability to look just like a roadie. Tattoos de rigeur, of course.

MAN ON THE RUN

This is the no tax-file number, or fake tax-file number dude who really is a fugitive from something or someone. Often it is innocuous yet serious, like the Child Support Agency but sometimes you see a tech turn away or hide their face when a cop cruiser pulls alongside the Tarago. Yep, they are on the run, and will become unavailable at very short notice.

HUMAN FORKLIFT

Every larger show or tour can benefit from Jack. You know him: "Jack not name, Jack job...." Or at least that was the character in the Muppet Movie, who worked in a car yard. I still remember Bob Payne

(where are you, Bob?) carrying a Leslie up the stairs at Balmain Town Hall. And I once saw Mark Keegan loft a 4560 onto his shoulders. Real men, huh?

GLAMOUR SEEKER

This crew member usually marries a dancer or a backup singer, and spends valuable spare time cruising around openings, parties and red carpets. This is actually a fairly useless crew member, since its motivation is wrong. Sometimes they out themselves by seeking autographs, and generally acting in an unprofessional manner.

OUT OF WORK ACTOR OR MUSO

Surprising how talented some crew are, and most of all how many bass players end up doing sound. It's actually a valid career path for frustrated thespians, dancers and musicians – why not work in entertainment and actually get paid for it, as opposed to perform and starve? But why so many bass players? Could be this is the easiest instrument of all – no pesky chords to learn!

THE MISPLACED QUALIFICATION

Yup, this guy or girl got the gig because they have a heavy vehicle license and were silly enough to tell someone. The rig needs to get driven, and most crew fast grow out of very early starts, roadhouse food and log books. Perhaps this is the easiest qualification of all, as an entry point, but you risk being The Truck Driver forever more.

THE WRONG QUALIFICATION

This is the studio engineering course graduate, who fast finds that sitting in a nice control room has nothing in common with sitting in a live venue. Then there is that pesky plug and patch, and troubleshooting stuff..... things that never happen in the nice audio school classroom.

ROCKSTAR ROADIE

This is a subset of the lifestyle roadie, but a dangerously evolved form that really does look kind of like someone famous. Very occasionally this turkey may don white gloves,



VRX900 S E R I E S

MICRO & MINI LOUDSPEAKERS, MONUMENTAL PERFORMANCE.

The JBL VRX900 Series Line Array Loudspeakers

Simplicity, Versatility, Functionality; The JBL VRX900 Series are a range of premium quality mini and micro line array loudspeakers to suit almost any application. Lightweight, high power with configurable amplitude shading and matching subwoofers and floor monitor. Extremely versatile, easy to set up, fly or install, and they don't cost the earth. Whether you are a rental company, nightclub owner, AV company, band or DJ the JBL VRX900 Series has a micro or mini, monumental solution for you.

The VRX928LA is an 8", 400W, cabinet weighing just 12.7 Kg for small to mid size applications. The VRX932LA is a 12", 800W cabinet weighing only 21.8 Kg for mid to large size applications. Add the matching 15" or 18" subwoofer to the relative model and you will have a pocket powerhouse sound system.

Audition them today, you **will** buy them tomorrow.

Distributed by

40 Kent Rd. Mascot NSW 2020 • Ph: (02) 9582 0909 • Fax: (02) 9582 0999 • www.jands.com.au



My brother's mate

and very sadly sometimes follow the idol trajectory into drugs and booze dependency. Very unreliable, and hard to find due to willingness to sleep with dubious groupies.

MY BROTHER'S MATE

The band needed someone to do the lights (see also: the band needed a manager) and this highly qualified panel beater or bricklayer got the gig. Through a quirk of circumstance the band got five minutes of fame and glory and the mate came along too. Usually almost totally technically ignorant, but often a fun boofhead to have hanging around. Kind of like a Labrador.

FREE (TICKET) LOADER

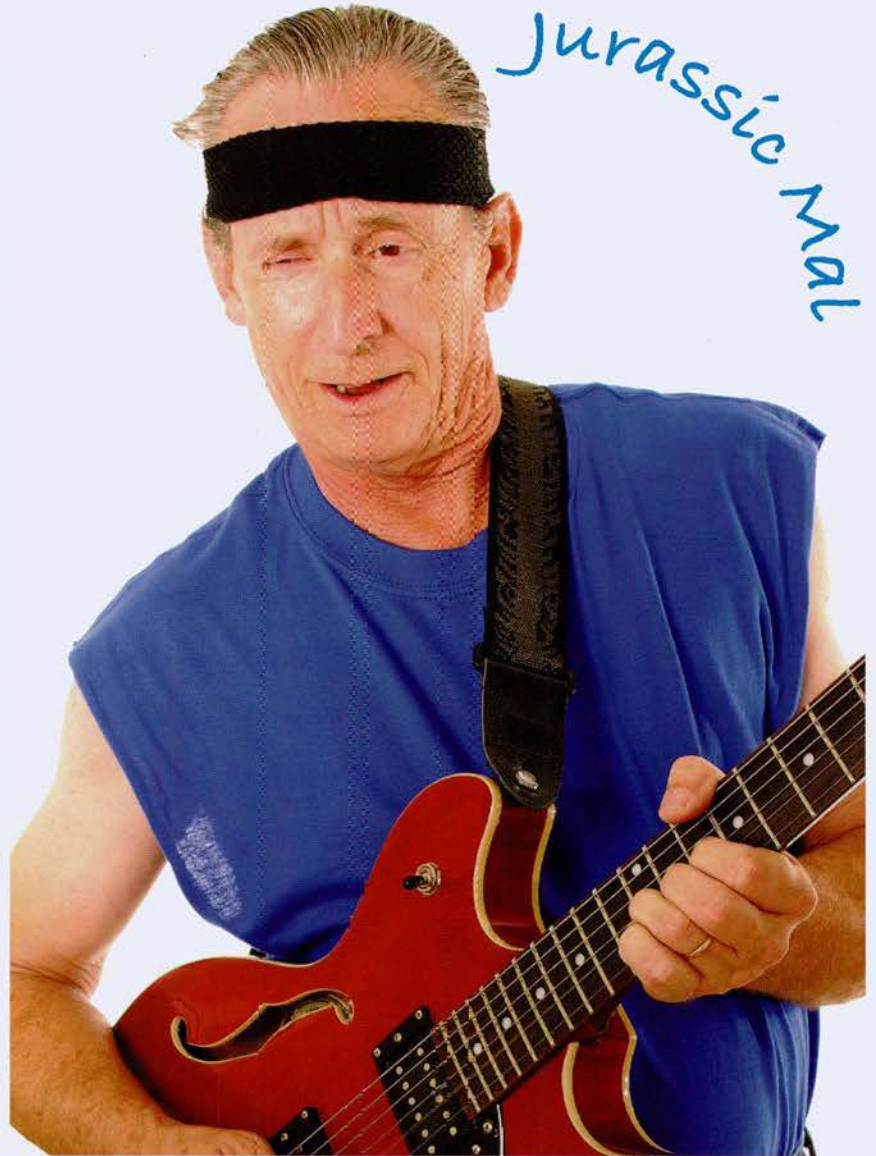
A dumb idea really, this person promises to load in and out in exchange for access to the gig. Naturally at the load out, they are not. Usually dangerously inept. A subset of the support band crew, who are obliged to load in and out in exchange for use of the production. Some of them kind of forget this, and are not there at the end. But we remember. Oh yes, we do.

JURASSIC MAL

Dribbles randomly. Really didn't progress in the food chain beyond the current role/gig. Usually spotted at their other gig, which is driving a bus or doorman at an RSL club and please: these are genuine vocations, so don't get upset if that's you. But our dinosaur mate really should hang up his/her maglite and settle back into the comfy chair at Shady Pine Rest Home.

WEEKEND WARRIOR

Has a day gig with a corporation or government, and really loves working



Jurassic Mal

part time in the industry. Often the most enthusiastic and knowledgeable crew member, albeit usually with more theory than practice. Swore up on news and stays up late when CX Mag arrives in the post. Really, we love you, we do.

MR OR MRS PERFECT CREW!

That's YOU, if you can combine some of the more positive parts of the above with a love for what you do, stay focused and honest, treat others like you'd like to be treated, and go the extra yards. Keeping the ego fed but under check really helps, as does being blessed with high energy and enthusiasm. A proper qualification from a proper college helps heaps. Add in the ability to learn from positive criticism and WHERE ARE YOU? We have a highly paid gig for you. Bring your passport.....



Rockstar Roadie



The Variant Installation Array

Big surprises come in small packages

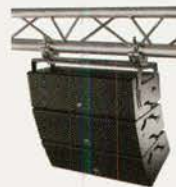
The Variant Installation Array is our ultra-compact, powered line array system designed for use in a wide range of sound reinforcement applications.

Small in size and light in weight, the Variant's practical rigging system and accessories make it a snap to fly or permanently install on walls or ceilings. Exceptional performance, amazing flexibility and a pleasingly affordable price—it's no surprise that the Variant is one of the world's best ultra-compact line array systems.

Variant Installation Array

Theaters · Corporate Events · Worship Centers · Auditoriums

Flexible Mounting Options:



Truss or Ceiling



Wall



Stand

www.dasaudio.com

NO CRACK PROBLEM HERE

THE ELECTRICIAN IS MASTER OF THE THEATRE DOMAIN



“Education is not the filling of a pail, but the lighting of a fire.” William Butler Yeats

By **RICHARD CADENA**

“It seems the expectation (is) that an entertainment electrician should be an engineer, licensed electrician, and theatre technician.” Virginia Croskey, an adjunct professor at Prince George Community College in Largo, Maryland, wrote those words after taking a two-day entertainment electrician’s course. The course is designed to teach the principles behind the practice of being an entertainment electrician. Yes, Virginia, there is more to the entertainment electrician than meets the eye.

For many years I thought a master electrician in the entertainment industry was a person who dealt exclusively with electricity and power distribution. Silly me. I’m a slow learner - that I’ll admit - but once I met some working master electricians like Rob Baxter and his

brother Rick, it slowly dawned on me that these guys are nothing like those electricians who show up on the job site with a lunch pail, a tool belt and a plumber’s crack. No, these guys are electricians the way Tiger Woods is a golf hack. They’re the Terminators of the industry, the table-top fusion generators of the theatre set. A good master electrician has the brains of an engineer, the knowledge of a technician, and the skill of an electrician but without the beer belly (in most cases). The course was designed to prepare the entertainment electrician to be a Baxter or a, well, another Baxter.

Take, for example, the job description for a master electrician at the University of Southern California that I found on the internet. Among the list of job responsibilities are these gems:

“Assists in the hanging of light plots...” These days, lighting plots

can have more technology than Silicon Valley. They might involve conventional fixtures, automated fixtures, data distribution, special effects and control systems. It might also involve setting up a wireless network, fiber optic cabling, Ethernet systems, media servers, or digital luminaires. In order to correctly hang a lighting plot today, you should be able to make heads or tails of lighting plots, riser diagrams, panel schedules, and/or shop orders. You should be able to interconnect all the nuts, bolts, wires, and paper clips to make it work seamlessly. And if any of these components or systems is not working correctly, someone has to diagnose and fix the problem. Do you have any idea who that might be?

You guessed it. Also listed in the job responsibilities of the master electrician at USC, and doubtlessly other theatres, is this: “Assists in the maintenance of all specialized lighting

equipment in the School's theatres." I don't know about you, but I've never met a commercial electrician who would even know from which end of a digital luminaire the light comes. And don't even think about asking for help with your network, be it DMX512, ArtNet, SandNet, Ethernet, or a basketball, volleyball, or fishing net. Well, maybe a fishing net.

And there's also this: "Assists students in observing theatre safety rules." If you can read between the lines you might guess that those lines are probably rigging lines, the same ones the master electrician needs to know about, if only in a basic way. No, the ME doesn't have to be a certified rigger, but there are those who are. And it goes without saying that the ME should know enough about electricity to be not dangerous.

Another of the listed duties is, "Creates lighting designs." Yes, plenty of master electricians design lighting plots. That involves a completely different side of the brain than tying in the feeder cable, yet many an ME is proficient at it.

Lastly, the USC master electrician also "performs other related duties

as assigned or requested. The University reserves the right to add or change duties at any time." In other words, when ever there's a problem that no one else can fix, it's up to you, my master electrician friend.

I've always thought the "master electrician" moniker was misleading. It might be more appropriate to call them a "master technician" or "master magician," but that would take an act of Parliament, and at the moment they're busy banning the incandescent lamp. So I'm putting my money on keeping the status quo.

But if a master electrician has a lot of responsibility, what does that mean for a production designer? If you want to list the responsibilities of a production designer, you can start with the responsibilities of a master electrician and go from there. Not that a designer would be responsible for the power distro or rigging, but certainly a good one knows their way around the entire production. The most successful production designers I know are whizzes with the computer – CAD, visualization, rendering, animation, for starters – they're great communicators, they

understand the ins and outs of the production, and they have great imaginations. Whether they work with WYSIWYG, VectorWorks, LD Assistant, or AutoCAD, they typically have a mastery of many other software tools like Cinema 4D, 3D Studio Max, Poser, After Effects, and a handful of other tools that help them create, illustrate, demonstrate, motivate, and facilitate their ideas.

How can anyone know everything about everything in a production? You can't. But it sure helps if you are curious, filled with wonder, and ask a lot of questions. It's virtually impossible to ask a question without learning something in return. And don't forget to play at work. Playing has a way of releasing your inner child and setting yourself on a course of discovery.

In short, a good production designer or master electrician has the mind of a child but behaves like an adult. Now if you'll excuse me, I'm going to ask my mom if I can finish watching *Sponge Bob Square Pants*.

Put your Wii down for a minute and e-mail the author at rcadena@austin.rr.com. 

Are Your Power Distribution Systems up to Standard?

JANDS manufactured mains power distribution systems are designed, built and tested to the requirements of AS/NZ3439.1:2002, and C-Tick compliance applies to all units to EN60439-1. What this means for you is that you can be sure that your JANDS power distribution system is simple and safe to use and fully meets the requirements of the relevant legislation. Can the same be said for your current mains power distribution system? JANDS power distribution systems come in a range of formats to suit every application.

JANDS



The Jands PDS 453 is a power distribution system designed for use in mobile applications where a single high capacity power feed needs to be broken down into a number of smaller feeds to supply mains powered equipment fitted with "standard" 3 phase and single phase mains input connectors.

The Jands PDS12R power distribution system is designed for fixed or mobile applications where 3 phase to single phase GPO power distribution is required.

Jands PDS6R is like the PDS12 except feeding 20 amp outlets for heavy duty applications.

Where remote switching of mains power is required the PDS6RDMX offers 6 x 20 amp DMX Controlled relays. The ideal solution for entertainment industry applications.

JANDS

40 Kent Rd. Mascot NSW 2020 • Ph:(02) 9582 0909 • Fax:(02) 9582 0999 • www.jands.com.au

TO MOVE OR NOT TO MOVE... THE DESIGNER'S DILEMMA

Way back in the olden days, we used to light everything with conventional fixtures controlled by dimmers. Designers would agonise over angles, colour selection, focus and about nine thousand other things – because once the show was in, changes became difficult, time consuming and in many cases impossible to implement. Then about twenty years ago we saw the first moving lights. We all went “Oooooooh!” which is the traditional response to brand new shiny things. Then we went back to what we were doing – movers were too rare, too expensive and too hard to drive and therefore their use was restricted to a few big shows.

Time passed and various other manufacturers decided that they would be happy to relieve Vari*lite of their (virtual) monopoly. And they did. Prices crept down and moving lights became more readily accessible to the common people. Issues relating to control persisted for a while with some manufacturers using proprietary codes and others using the newly developed DMX-512 protocol. I have less than fond memories of trying to control a couple of miniscans with a two preset memory console – I think it was a Jands ESP or similar, but it was a long time ago and things are kinda foggy.

Anyway, the punters and the clients (who like a shiny thing as much as we do) took a liking to them, and worldwide demand for movers took off. With demand came supply and the moving light industry went like the clappers for a few years – there seemed to be a new product every five minutes and a new manufacturer every ten. Most producers standardised their wares to work with DMX control and this paved the way for the console makers to grab a market that hadn't existed when everyone was using proprietary controllers. So everybody got happy 'cause now we had moving lights that were (reasonably) affordable, readily available and comparatively easy to control.

The other folks who seriously benefited from all this were the manufacturers of atmospheric – foggers, crackers, hazers and so on. There was an enormous growth in demand for visible beams, and fair enough too. After all, if you've coughed up a heap of cash for a machine which will do a pile of crazy beam effects you may as well see them. I suspect the only bigger boost these guys ever enjoyed was when the smokers all got sent outside.

So here we are then. Moving lights are well and truly established in the production and events industry, to the point that pretty much every

show with a budget of more than a few hundred dollars has one somewhere. Lots of schools have them installed (not public schools, of course, but that's a different rant), as do shopping centres, venues, car dealerships, churches and all kinds of other places. It's like all our wildest dreams came true...

But does the moving light revolution have a limited lifespan? Do all the brightly coloured beams dancing prettily hither and thither still bring the joy they once did? Certainly in some sectors of the market, notably the dance party and club scenes and the kid's shows, moving lights still provide hour after hour of entertainment. But let's face it - kids find Barney the purple dinosaur entertaining and plenty of the pill poppers can be made blissfully happy by a cyalume stick of their very own.

But is colour and movement the answer for every show? I would suggest not. As with anything else, the novelty wears off, the effect becomes tired and the audience becomes jaded. People start wanting more. Someone who's never seen television will watch anything and be amazed by it, but once they get over the initial wonder, they start looking for substance. Moving beams can be a great effect in the right place, but before we had them you didn't leave the strobe on all night did you?

I would suggest that the day of the moving light for its own sake is over, and that it's time to take another look at creativity. The moving light can be a magnificent tool in the designer's arsenal but need not be used in every application. In the olden days, you selected the gear to suit the design which was meticulously planned to fulfil a vision.

Unfortunately it now seems that many shows are designed on the principle of 'let's get a big truss and hang heaps of movers on it and sort the rest out in the programming' which is just plain lazy. Don't get me wrong – there are designers out there doing fabulous, inventive, sensitive work. But there are a lot of shows they're not doing.


From being too hard, moving lights have become too easy. There are plenty of people out there who don't bother to even rig a stage wash of conventional fixtures, preferring to just cobble something together with the movers once they're flown. Never mind the fact that discharge lamps, with or without CTC, frequently give performers a grey, ghoulish kind of look. Never mind the

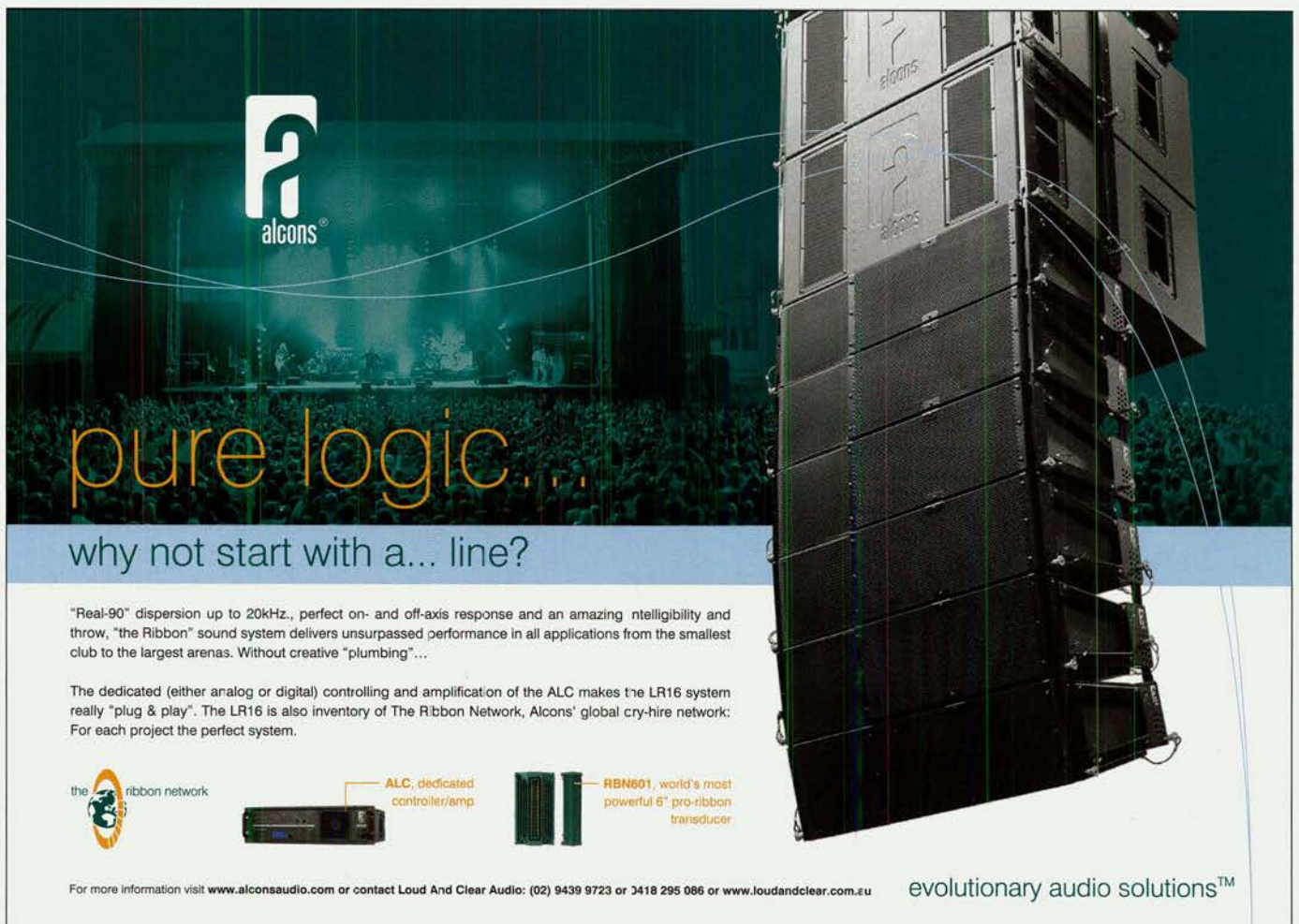
fact that frequently we end up with the stage lit from dead front on so we have no shadow or shape. Never mind the additional expense of using movers where they're not needed. And completely ignore the fact that every show looks the same.


Every show looks the same?? That's what I said. The same gobos, the same colours, the same combinations of effects appear over and over again, show after show after show. Fair enough, I see more shows than Joe Punter, but sooner or later even he's going to notice. Especially if people keep using effects straight out of the effects engines in their consoles. Use the effects engines, sure, but use them as a starting point and modify the effect to do what you want it to do. Think about the show, not the convenience of having a desk that thinks for you.

And while we're at it, let's get over the idea of being a 'moving light programmer'. I see a pile of young'uns every year who want to be moving light programmers but have no interest in any other aspect of the process. If you want to work

with lights, take the restrictions off yourself and work with all kinds of lights, not just motorised ones. Work in systems, learn about all the aspects of how lighting works and then apply it. Knowing how to program a console is only a tiny part of the equation. As the owner of a major lighting company told Julius Events College students recently "Ring me and tell me you want to work with lights, we'll give you a go. Ring me and tell me you're a programmer, I'll hang up before you finish telling me."

So what is it I want from you? I want to see the art come back into lighting. I want to see interesting shapes and looks – with or without movement. I want to see people planning what they're going to do before they do it. I want to see people selecting their gear from the full range available and using things for what they're best for. I want to see the performers as well as the beams. And most of all, I'd like everyone in the lighting industry to band together and see if we can overcome the plague of console blindness afflicting the young. 




 **alcons**

pure logic...

why not start with a... line?

"Real-90" dispersion up to 20kHz., perfect on- and off-axis response and an amazing intelligibility and throw, "the Ribbon" sound system delivers unsurpassed performance in all applications from the smallest club to the largest arenas. Without creative "plumbing"...

The dedicated (either analog or digital) controlling and amplification of the ALC makes the LR16 system really "plug & play". The LR16 is also inventory of The Ribbon Network, Alcons' global cry-hire network: For each project the perfect system.

the  ribbon network

ALC, dedicated controller/amp

RBN601, world's most powerful 6" pro-ribbon transducer

For more information visit www.alconsaudio.com or contact Loud And Clear Audio: (02) 9439 9723 or 3418 295 086 or www.loudandclear.com.au

evolutionary audio solutions™



WHIP ME BUT NOT MY WALLET

How Warner's built a new entertainment concept that works harder than a stockhorse

JULIUS GRAFTON GOES BACKSTAGE WITH MYSTERY, OUTLAW AND BART THE BAY GELDING.

Imagine a show where you get to build the venue from the floor up, just for you. That's what Caesar's Palace did in Las Vegas for Celine Dion, who now is 'in residence' there for the foreseeable. Other acts are following suit – the Casino's figure the building cost will be amortized against the pulling power of the act.

So an Australian purpose built auditorium based on a show hasn't happened until now, but we came close when Star City Casino designed their Showroom for one of the Paris 'Lido' styled tit and feather acts. The act didn't happen, but the legacy is several thumping deep stage lifts and a far too prominent stage thrust.

But for a year now there has been a venue seating 1,000 punters 6 nights a week at a show in a one-off, custom made venue. It is the Outback Spectacular, and before you zone out thinking it is a bullring with some performing animals, think again.

Warner's built the show on their lot on the Gold Coast and it is a screaming success. We went inside to see how it all works.

THE VENUE

You walk into a barn styled bar area big enough for 1,000 people. At one end are four stalls, each loaded with one horse. This is as close as many people get to a horse, and each has its name above the stall.

In the bar you get pre dinner drinks, and after some warming up from the hosts, split into one of two groups to enter from each end. The groups are designated by the hat that you get given, one size fits all. There are red, or yellow bands.

Surprisingly 500 people manage to get seated in about 5 minutes, as you enter the greeter directs you to your seat and on the bench in front of you is the first course.

You look around – there are 1,000 seats in a 270 degree mode and each seat is fronted by a bench for a meal. There is a walkway in front of the bench for the server. Everyone sits side by side, on a fold down padded seat that is quite comfortable for that expanding Aussie butt. Mine excluded.

The ambiance is good – timber finishes, lighting and general placement all jives. At the end of the arena is a white wall where entrances happen, and onto which is projected the show imagery. The performance oval is covered in specially treated sand, it kind of matches the vertical timber finishes on the seating risers.

As you are seated, you check out the stuff or the bench in front of you. There's a hybrid wine/beer glass, a shiny metal coffee mug containing a strainer, a little UHT milk, knife, fork and spoon. Centre place is an entrée, today it's a cylindrical salad with a kind of mango dressing. I enjoy it. A cow hand walks along serving beer or lemonade from a jug in each hand. No guessing which hand I vote for. Behind her is another cow dude, this time with wine. In this manner the inclusive drinks are doled out fast.

So here's how it goes: inside of twenty minutes you've arrived, parked in the huge lot outside, greeted the horses, drunk one opening salvo, queued, sat and eaten the starter. Now the guy with the hat and jeans is out on the sand, and the entertainment starts.

FOOD

It's a dinner show, and at around \$90 for everything it starts to look like good value. You get to keep the

**We just raised
the bar on
quality
hand
made
custom
cable
assemblies**



Ask for the best by name



The Resource Corporation Pty Ltd
Unit 15 / 173 - 181 Rooks Road, Vermont, VIC 3133
tel: 61 (0) 3 9874 5988 fax: 61 (0) 3 9874 0977 e.mail: sales@trc.com.au

GOBOTECH

Tel: 07 5529 0505

Fax: 07 5529 2226

Gobo Manufacture & Design



Huge Stock Gobo Collection
browse online - www.gobotech.com.au



Custom gobos FAST!
Full colour, spot colour, B&W, steel.

- Hire Theme Gobos
- DMX Tester /LED Torch
- Digigobos & MIG Clips
- Dichroic Filters
- Effect Filters



-Catalogue #06, get your copy now!



Digigobos



DMX/LED torch

www.gobotech.com.au

sales@gobotech.com.au



hat, and aside from the theoretically unlimited drinks (I got three), there is a three course meal. The value for money theme includes a very nice show program which at \$10 is half the price of one at a theatre show.

By now twelve horses and riders have done some circle work with low fog and a rain storm thrown in - and a bunch of overlanders have trekked past on their wagons. The white wall is showing a stack of Pigi projections that are either static or are scrolling, and the sound and lights are cranking. A storm has been and gone, with table rattling thunder.

The entrée is cleared as the outback show continues, and the cow hand is back to recharge the beer glass. Life is good.

At this stage it becomes apparent that a nearby tour group is seated with small clip on ear pieces, they are getting the show in translated form. I ponder how 'Pumpkin bottomed lily livered bush whacker' will translate into Arabic. They remain impassive, so the translation obviously has been work-shopped properly before implementation. Later I discover there are seven simultaneous translations running.

Somewhere between mustering colts and equestrian delights the meal arrives to fanfare, where the M.C. (Bluey) enters in a ute and stands in the tray lighting up a barbie. He rings the bell, and doors either side of the seating bays throw open as all the

cow hands enter each with a plate stack of six meals. These are plenty hot, and each comprise nine green beans, eight julienne carrot pieces, a measured collop of mash, and a fillet steak (well done but tender) atop a slice of baked pumpkin. A cute damper rolls about the plate, and gentle gravy glazes the top of the meat. It goes down well.

I'm told the venue also has Halal and Vegetarian solutions, but please - the emphasis really is on beef. A herd of Longhorns had come through earlier, presumably to get us in the mood. They also have Santa Gertrudis in the show, who make a cameo to promote themselves, as they come from the Australian Agricultural Company, AAAC who supply the meat.

LIVESTOCK

The really good thing about this show is that it does not have professional actors or indeed any musicians. Sorry lovers, no slight intended, but designing a show without you means that there is no need to change your name on the billing while you are in rehab.

The stars are the horses, followed by the dogs, then cattle, sheep and several grim looking camels that do a thundering one up race - on stage for all of thirty seconds. This is the limit of the training envelope for this magnificent irascible bal biting beast.

Don't overlook the chook either, at

“I saw stunt rider girls who hung off the saddle by one very muscular leg and rode impossibly fast. There were whips, quad bikes, a beer can regatta and Waltzing Matilda with flags.”

one point a bunch of punter children are selected to chase said fowls and the berserk bantams almost escape into the bleachers, which must be a good turn for the audience and crew. You can just imagine the producer calling the chicken handlers, to enquire whether the chickens can be motivated to run further amuck, all in the name of variety.

Along with this creature ménage is a big team of handlers and riders and experts who also act in the show, some even sing. It is straight away apparent they are animal hands first, singers and actors a distant second, and that is part of the charm of thing.

Backstage are cattle pens, stables, yards and rings, and the livestock are taken home to the hills above Movie World every night, to free range on the expansive acres that Warner control around their theme park precinct. Home on the range.

THE SHOW

There are three acts that segue together, with a mock homestead that revolves out of the white wall, and a mustering helicopter that also comes through a reveal. The chopper is a full size Robinson R22, itself not that large but very realistic, which is because it is real.

The Lycoming has been de-commissioned but the rotors still turn at a starting rate, thanks to hydraulics that run down through the mounting arm into the middle of the top of the blades.

It's actually the best helicopter effect I've seen, and courtesy of Tony Russo's audio design, the loudest and most authentic. Recorded in 7.1 surround, the thing is almost deafening, and the cattle underneath are authentic in their startled delivery, looking every part herded by the buzzing copter.

After, I needed to go see the

helicopter to try to account for the sound effects I had heard and was surprised to see a full JBL 2450 compression driver on a modified horn in the exhaust outlet – which explains the Doppler like high pitch exhaust whine that ran over me as the thing swooped and circled around the auditorium.

I saw stunt rider girls who hung off the saddle by one very muscular leg and rode impossibly fast. There were whips, quad bikes, a beer can regatta and Waltzing Matilda with flags.

Then at 9.15 it was all over, the baked pavlova dessert had come and gone, along with coffee or tea. The people departed and they looked really happy under their hats. Mission achieved.

HOW?

Shane Phillips is the production manager which in this case makes him everything including the venue manager, answering to John Menzies who runs all of Warner Village Theme Parks. Mr Menzies is a very well regarded creator of enterprise who had the vision and made it happen.

He says it was a while coming, but it did and it has, and after he built it (with Shane and others assisting) it has delivered in spades.

Shane got lucky because although an 18 year veteran of Warner's on the coast, he also has a background in equestrian events – so he gets to ride in the show a couple of times a week. This helps him understand issues on the floor, so to speak, and he proved very aware of his role when I spoke to him.

The show itself was written by Ignatius Jones and directed by Neill Gladwin with lighting design by John Rayment. Shane says that it has evolved since, to suit the personalities of the performers; and to allow for tweaking. This is at odds with most theatrical productions where the director and producer sign off at opening night and must approve even small variations.

Shane is even on top of details like the battery life in the wireless translation receivers – he says they get 15 shows from 2 AAA batteries. The receivers are set to the frequency required by floor staff, and have a tamper resistant latch so the punter has difficulty messing with the settings. Each receiver has a bar code, and lives in one of 1,000 slotted drawers.

Stack of salad. Very nice!



MORE FOG FOR LESS MONEY

with the new

ROSCO

MODEL 1700 FOG MACHINE



A versatile machine for theatre, clubs, film & TV, rental
With the latest state-of-the-art technology the 1700 model will give long life reliability and produce a continuous variable output of fog from only 1190watts of power. Standard remote control or DMX interface allows up to four machines to be operated from one control. All of the Rosco fog fluids can be used including the new 'light' formulation – it's almost a haze! The outlet cowling accepts the standard Rosco hose adaptor and ducting hose and can be operated with the Rosco Chiller or Coldflow for low lying fog.

See it at your Rosco dealer
or phone Rosco at 02 9906 6262

Your 'One Stop' Rigging Shop.

- Ozblok products. The new "S" Series chain blocks, girder clamps and trolleys.
- C.M. Lodestar, GIS, Kito and Hitachi chain motors.
- Standard wire, Superflex steels and custom made bridles.
- Manual and electric winches.
- Black polyester round slings.
- C.M. Stac chain.
- Height safety equipment and fall arrest systems.
- Pocket laser levels.
- Endless webbing ratchet straps and load restraint systems.
- Sisal and manilla rope.



HOISTING EQUIPMENT SPECIALISTS PTY. LTD.

NSW Phone: (02) 9531 8033
VIC Phone: (03) 9480 5577
Fax: (02) 9531 7933
Fax: (03) 9480 0855
Email: sales@ozblok.com.au
Email: sales@hesvic.com.au

BIG VENUE

While the performers (two and four legged) are getting saddled up, the technical crew prepare for the show. The control position is at house rear right in the 270 degree stadium, and it is a spacious platform with sound and lighting control plus amplifier racks at the rear.

LIGHTS

Clint Dulieu operates the Avolites Diamond 4 console, with 28 Coemar I Spot 1200 movers and 204 par 64 cans hanging off the outputs. Each can, plus the 56 2k fresnels has a colour scroller on board. Four 2.5k Coemar followspots complete the lightup inventory.

The Par 64's and 2k fresnels are driven by 14 racks of Tech Art dimmers. Eight MDG low foggers are fed Co2 from the venue's catering supply, and Clint needs to add fluid once every five shows. He says these are his most impressive items of inventory and in his own youthful way he is full of suggestions for manufacturing improvements to almost everything else in the lighting rig.

The lighting system came from Coemar DeSisti Australia.

His day starts at about 1pm, with the afternoons kept busy maintaining and cleaning lights. The tech shift starts at 3.15pm and ends at 9.45pm –

easy hours for tech people!

Once a fortnight Clint and his colleagues clean the two 6kw PIGI projectors on which the show relies. These produce fixed and scrolling imagery on the white reveal wall, and have film scrolls installed that cost an impressive \$19,000 for a replacement set.

"It's quite remarkable, we expected a three month life and we've had a year from the main set", he said. A set of film has some darker static images repeated on it, to allow for fade. A second masking film on each projector lasts considerably less time, so one order has two main films and 14 masking films, which don't last as long.

Pressed about what is the best thing about working here and on the Coast generally, Clint surprises me by saying it's the animals. This is echoed by everyone else I ask – there is a real affinity with the live stock here, and it shows backstage where there is some serious love in the air. I'm more into hanging around chorus lines than geldings, but now you mention it, Lucy, Dolly and Chico are all kind of cute.....

John Rayment's lighting plan for the show is bright and cheerful, with a tricky focus to get light evenly across the large show floor, right to the rails. Clint has been allowed some latitude

to evolve the looks, and the 300 plus cues all fire off neatly.

SOUND

Warner Village Theme Parks are fussy people and they put correct emphasis in sound design for this venue. They wanted it big and warm, and they got that. After the usual sideshow of bids and presentations they hired Technical Audio Group to supply the solution.

TAG boss Tony Russo explains that a major client like Warner Village isn't going to engage a dealer, so he did the design and the tender and in turn pushed the work through Impact Production Services who are the most able bodied nearby TAG dealer. They did a lot of the work, supervised by Tony.

Russo evolved TAG out of his previous company called AR Audio Engineering which gives the clue: he is essentially an audio engineer who specializes in venue designs. It shows: the system at Outback Spectacular is significant, and in practice it certainly delivers the goods.

TAG's system story follows, they can tell it better than I can. I'll just say that every detail in the Australian Outback Spectacular has been carefully considered, and the venture is a fabulous thing. Well done to all concerned!

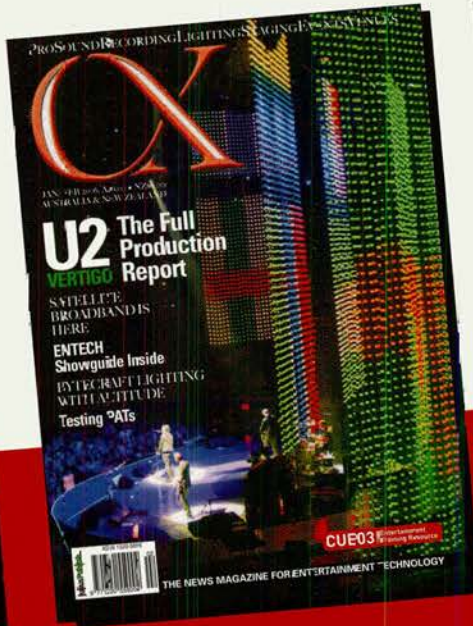
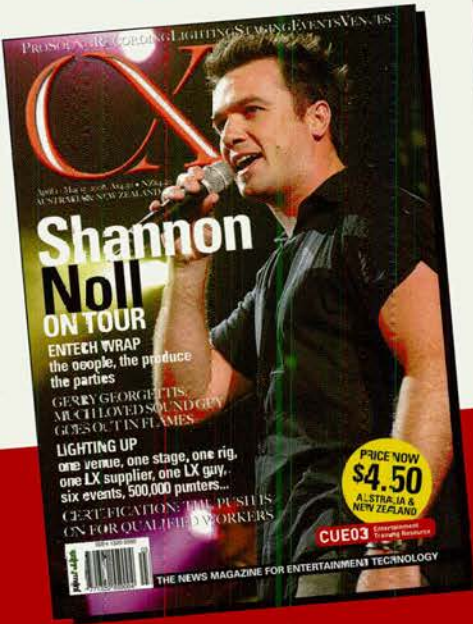


Audience is seated 270 degrees, entry wall is the projection surface for 2 x PIGI projectors.

NOW MORE OFTEN!

8

TIMES PER YEAR FOR THE SAME PRICE!



EXTRA FREQUENCY AT NO EXTRA COST.

Subscription form

Name _____

Organisation _____

Street _____

Suburb _____

State _____ PostCode _____

Phone _____

Email _____

Subscription amount:

Australia AND NZ: 3 years A\$E9. 2 years: A\$59.
1 year: A\$33. One year: Asia: A\$51. Elsewhere A\$99.

Payment \$ _____ in Australian dollars.

PAYMENTS: (Make cheques out to Julius Publishing Pty Ltd)

Name on card: _____

Chq Diners Amex Visa M. Card

Card No: _____

Expiry Date: ____/____/____

Fax this form to +61 2 9638-7181 or mail to Julius Publishing, Locked bag 30, EPPING NSW 1710, Australia.

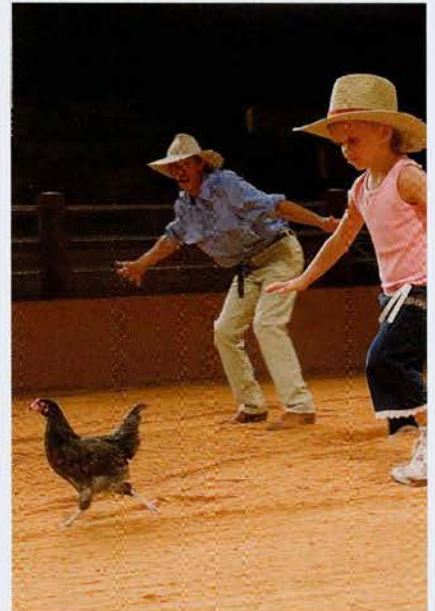
Subscribe by phone now! 1-800-635-514
Subscribe online at www.juliusmedia.com

Julius Publishing Pty Ltd, ACN 117 748 777





install time. Ricky Caswell and Brian Inglis



Chicken chase

OUTBACK SPECTACULAR: TECHNOLOGY PROFILED

The Audio brief from John Menzies was: 'every seat in the cavernous 270° venue is to be best seat, no excuses, no cost spared - and make sure that every patron gets rocked in the r seat.'

After an exhaustive evaluation of numerous brands and system designs Warner Village Theme Parks' settled on a massive Martin Audio based line array system - arguably the largest FOH installed auditorium sound system in Australia. 'The proposal put forward by Technical Audio Group (TAG) and installed by Impact Production Services (IPS) covered all bases and came together supremely well' said ACS Technical Director Tony Marshall. 'We love this system, it's everything the show needs.'

'As there are no cheap seats at AOS we had to deliver powerful audio to every one. Spoken dialogue is a key element of the show so the audio intelligibility had to be of the highest standard,' explained Tony Russo, TAG Technical Director and AOS system designer. 'Plus we needed to do it three times, once for the main FOH soundtrack and vocals, once for the sound effects and once for the helicopter. The helicopter is John's (John Menzies) baby and hence demanded special attention!'

A total of seventy speaker cabinets are flown in the three AOS systems. The main FOH system is designed to effectively run in 12.1 surround and

comprises thirty Martin Audio W8LC compact line arrays cabinets, flown in eight drops plus eighteen drops of double 18" S213 subwoofers.

Six Martin H3H (15" 3-way all horn loaded cabinets) make up the effects system. A further eight flown Martin Audio F15, 15" 2-ways, cover foldback duties.

The whole complement is driven by thirty three CSC PL2 amplifiers delivering a combined total of around 100kw. Five kilometers of Klotz speaker cables take everything to wherever it needs to be.

To make sure that every seat is the best seat, Martin Audio's 'Display' software was extensively used to accurately predict SPL and response and consequently dictate the optimum splay angles for the cabinets. After that, to ensure that the 'Menzies Mandate' (every seat is the best seat) was fully adhered to, the couple of seats, out of 1,000, that were classified 'good' audio rather than 'excellent' were supplemented with a combination of Martin H2 and F8 spot fills.

'There is some serious firepower in the air with W8LC line array,' commented Russo. 'Usually six-a-side of these all horn loaded 12" 3-ways is enough to comfortably handle a 5,000 capacity dance party. At AOS we have 30 for just 1,000 people! The difference is that here we are aiming for smooth audience coverage and tremendous headroom capacity to handle the blistering sound effects.'

As is of the case in such large venues controlling the sub bass was

one of the biggest challenges. At AOS this was compounded by sight line considerations, roof loading limitations and the helicopters flight path where chopper blades virtually scrape paint from the boxes.

Russo's bass philosophy; 'two things in life you can't get enough of - cash and bass,' meant that the audio design would be able to deliver bone shaking bass for the effects yet that bass would need to be sufficiently controlled so as not to excite the room or wreak havoc with the open live mics.

The design Russo settled on configured eighteen flown double 18" Martin S218's in two down firing rings only meters above the audience heads - a type of killer sub bass ceiling system. Careful processor alignment was required to make sure that the sub bass was as seamless as possible throughout the space and that it blended perfectly with line array cabinets some 20 meters away.

The effects system has eight Martin H3H horn loaded cabinets - mounted high up in the roof of the auditorium and pointing upwards at custom designed sound scattering panels. These panels create a diffused spatial sound as their output reaches the audience as a first reflection. The result is stunning thunder, lightning, and atmospheric which crash into an unsuspecting audience from every direction and with blistering effect. 'We regularly frighten small children,' commented Tony Marshall. 'But generally they forgive us once the horses appear!'



DJ PRO

BEATMIX WITH MUSIC VIDEO

Nightlife's DJ Pro Controller integrates with the H2MS to give you a total DJ solution.

• 600 GB of Hard Drive Power

• 6,000 music video clips at your fingertips

• Search, preview, cue and beatmix music video and audio tracks

• Load photos live via the USB card reader

• Music updates sent fortnightly

• Advertise in-house using electronic billboards

• Access to fresh content and exclusive remixes from top record labels worldwide

BIG TECHNICAL

The third system is built into the helicopter and brings to life the howling crack of rotor blades scything through the air. A carefully concealed custom 400w DC powered PA sits in a custom horn flare in the choppers exhaust. Linked by an RF feed this system runs in unison with the main FOH to bring as much realism to the chopper cue as possible. The patrons sit stunned, mesmerised by the helicopter passing just above their heads. 'I pushed hard for this chopper system,' commented Russo. 'Getting a high enough SPL in the limited mounting space was quite a feat. But once John Menzies heard it and was left wondering whether it was recording or real engine up there it very quickly got the nod.'

Four QSC Basis 900 series were selected to try and process and control the monster. Basis addresses three critical disciplines in a 1RU frame: comprehensive drag and drop DSP, digital signal routing via Cobranet and amplifier and loudspeaker monitoring.

The DSP needed to be sufficiently powerful and flexible but easy to use. 'With all the patching and matrixing, it's the signal flow from hell,' installation tech and audio guru Brian Inglis commented. 'Fortunately the QSC GUI is extraordinary clear and easy to use, but more importantly it has the sound quality to match.'

Signal routing for the system is also extremely complex. Twenty four channels of digital audio leave the mixing console in Cobranet and enter the Basis units on a single Cat 5 cable. Given the 12.1 system set up plus the separate effects system the routing and cross matrixing is no job for the faint hearted!

The third Basis discipline, amplifier and speaker monitoring, is according to Russo an absolutely critical component. 'With over 260 drivers in the air there is simply no room for golden ears guess work – nobody will know when a driver has gone AWOL.' With Basis the audio operator is instantly alerted during a show on screen and via a daily pass/fail log report of driver or amplifier problems. These reports can be emailed or even SMS'd offsite to service personnel via QSC's Venuemanager software.

Alignment and equalization was painstakingly carried out over many days by David Gilfillan of Gilfillan Soundworks using WinMLS and literally hundreds of readings throughout the venue. The team of



Head of lighting: Clint Dullieu





JuliusTM Events College

New name, same college - only better! The old name, **Julius Media** didn't really say what we do, which is run accredited courses specialising in Theatre and Events, both technical and frontline management.

Fulltime study in Sydney

We run two full time courses from our Sydney campuses. Entry is selective, via interview and not related to high school outcomes. We also have CRICOS approval (provider number 02583M) for a *small number* of overseas students.

• Technical Production - Entertainment Technician

(1 year, Advanced Diploma, CUE60203). In this course you learn equal measures of live sound, studio sound, live video, lighting, and production management units. Starts February 2008, apply now. \$12,430. CRICOS 051480A

• Event and Music Management

(1 year, Advanced Diploma, CUE 60403). Includes event management, music management, budgets, safety, PR, marketing and basic technical production. Starts in July 2007 and February 2008. Apply now. \$9,680. CRICOS 051478F

Accredited Short Courses

(For Unit of Competency names see website)

- **Stage Safety.** 1 day: July 2, Oct 1. \$180
- **Sound Basics.** 3 days: July 3,4,5 or Oct 8,9,10. \$595
- **Lighting Basics.** 3 days: July 12,13,14 or Oct 2,3,4. \$595
- **Vision Basics.** 3 days: July 9,10,11 or Oct 11,12,13. \$595
- **Advanced sound and mixing.** 5 days: July 9-13. \$875
- **Advanced Moving Lights.** 5 days: Oct 8-12. \$875

Certificate III Live Production, Theatre and Events (Tech)

- July 2 - 14 or Oct 1 - 14. \$2,200. Qualification: CUE 30203

Traineeship Training for workplace trainees in NSW

Certificate III Live Production, Theatre and Events (Tech) CJE 30203. Cost is subsidised by Government. Call Amalia Portelli.

Skills Recognition for people already working ANYWHERE:

Recognition of prior learning (RPL) and Recognition of current competency (RCC) assessments leading to Certificate III, Certificate IV and Advanced Diploma. Full qualification names and info at website: www.juliusmedia.com or call Amalia Portelli on 02 9638-5955.



Julius Events College Pty Ltd

ACN 098850036

Registered Training Organisation 90888

10 Bridge street, Rydalmere NSW 2116

Phone 02 9638-5955

www.juliusmedia.com

email training@juliusmedia.com

Davidson, Russo and Inglis provided reality checks along the way debating each fraction of a dB adjustment.

The live musicians and show performers are wired with Audio-Technica 5000 Series radio mics. A total of eight frequencies are in simultaneous use with belt packs and headset mics being the preference along with handheld backups. Audio-Technica ATW-A49 receivers and AEW-DA880 radio frequency distribution amplifiers provide a secure reception system for the rapidly moving, ie. galloping, transmitters. Operators can visually track all transmitters, levels, reception and even battery power at a glance with Audio-Technica's IntelliScan software.

The sound track for the show is stored on a high spec computer and is laid down via SFX theatre show control software. A Yamaha DM 1000 mixer fires off Midi and SMPTE triggers for audio and projection cues and the outputs from the desk then are converted to Cobranet.

'BPS' Backup Paranoia Syndrome set in early at AOS. 'With \$90,000 revenue at stake per show the need for comprehensive back-ups starts to become infectious!' Russo commented. 'At AOS everything is mirrored- the mixer, the show PC, keyboards, mics, monitors, inputs, outputs, the wordclock, Cobranet, network hubs and the list goes on. There isn't any single point of failure; in fact the operator can switch the entire FOH control to an identical setup already idling right in parallel.'

With such a powerful and capable audio system no expense was spared on the realism and dynamics of the

sound track. Sound Designer Kevin Davidson commissioned big screen experts AudioLoc to put together the 20 second opening thunder effect. It took 64 tracks of layered recordings from Lucas films thunder experts mixed for two weeks in the studio! Recording the helicopter effects required Kevin to painstakingly set up a Redsun H2 Holophone in 7.1 surround at the Southport Flying Club as the Robinson chopper performed aerial stunts and numerous flybys.

The AOS score itself was performed by a full symphony orchestra and recorded onto 24 channels. This forms the basis of the show soundtrack. The whole thing is split into a series of scenes which are contained on the show computer. The audio operator monitors the show and triggers scenes according to the progress of the live elements. With the involvement of animals, some less predictable and trainable than others, stunt components plus audience participation there are often unexpected delays in closing out scenes and opening the next. The soundtrack and live microphone etc. are mixed live on the digital audio console.

The AOS push to develop the international tourist market has now hit top gear with a major blitz on markets like Japan and USA and the newly travelling class of China. So that internationals can understand the rich culture on display a multi channel language translation system has been installed.

Essentially the show has fired up an eight band FM radio station on site! Each international guest is invited to

pick-up a Sagean pocket radio and a set of Audio-Technica EQ88 retractable cord earphones. A total of 1,000 pocket radio/headphone sets are available, one for every guest in the house. The radios have the seven languages on offer on presets and guests can then monitor the show in their choice of Japanese, Korean, Mandarin, Cantonese and Arabic with two more to follow plus a hard-of-hearing English commentary.

Eight custom built digitally locked FM broadcast transmitters were designed with a main FM head amp feeding a seriously large side mounted dipole antenna. Any of the eight stations can be manually adjusted throughout the FM spectrum to guarantee interference free reception.

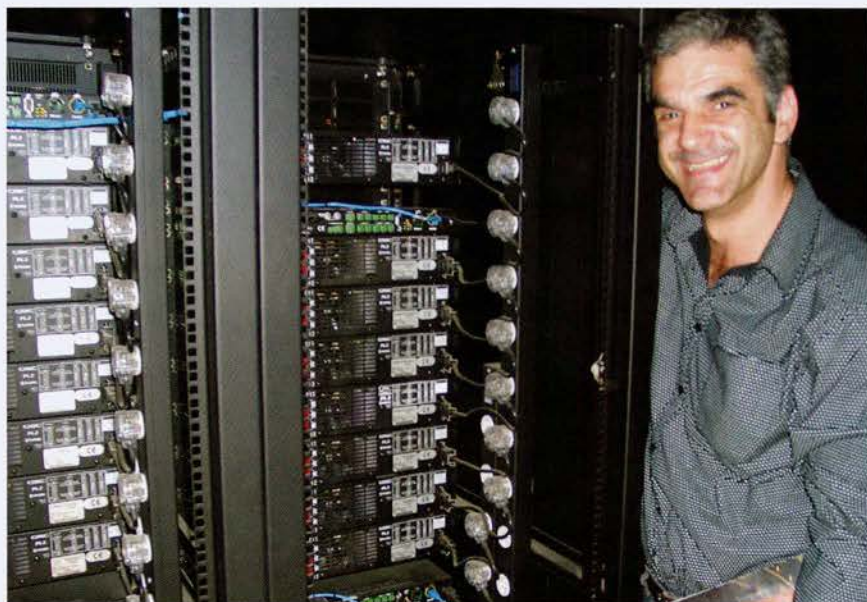
The commentary for each language was expertly translated by SBS TV staff then laid down as cued tracks on a separate PC running SFX software. As the operator steps through his normal show cues, Midi commands trigger the appropriate language cues in the LTS computer. A MOTU Digital interface is used as a D to A and an Allen & Heath IDR 8 performs audio post processing and critical limiting prior to transmission. Audio operators can monitor the progress of cues on separate PC monitors and even add live commentary if required.

One valuable by-product of the LTS system offers any radio equipped staff member or security personnel the opportunity to monitor the real-time progress of each show thus providing them with valuable count down to end of show information.

For guests the fun starts pre show in the Aussie pub foyer. This is basically a huge barn themed as a traditional outback sheering shed complete with beer kegs, harvester parts, sheering machinery and the obligatory roo bar equipped Ford V8 ute. Depending on the occasion the pub, which can basically hold the entire audience of 1,000 standing, albeit somewhat cramped, can play background/foreground music or a live musician or band.

It's a huge lofty space and when coupled with rowdy patrons it quickly became apparent that it too required a substantial system and careful consideration on how best to handle the dreadful acoustics.

Two Martin Audio F15's and twenty F10's (15" and 10" respectively 2-way speakers) were selected and configured in a two zone delayed system with power and processing by QSC. Mixing for the live acts is via an Allen & Heath



Tony Russo with his extremely neat rack wiring



Shane Phillips is the chief. He also rides.



This is the language receiver - one for every punter!

PA12CP powered mixer with a selection of Audio-Technica wireless and hand held microphones being used for musicians and for the 'mustering' of patrons from the pub to the auditorium in the minimum possible time.

Elsewhere there is a complete stage managers system for show relay and paging to back of house and foyer areas. This is controlled by an Allen & Heath IDR8 DSP engine, powered by QSC Audio ISA 100V line amps and delivered by Atlas Sound FAP62 ceiling speakers and Martin Audio C115's. This system along with PC's and mixers are afforded the luxury of a massive 5000VA APC UPS to ensure that the line of communications always remains open between operators and staff in case of emergency.

The rave reviews and accolades haven't stopped flowing since opening night and most recently AOS won best tourist attraction by the Queensland Tourist Association. 'Basically everything has gone right.' Commented production manager Shane Phillips 'I can't speak highly enough of Tony Russo (TAG) and Brian Inglis (IPS) their effort to design, engineer and install this unique and very difficult system has been outstanding and to get the result so 'right' is a tribute their skills and equipment choices.'

* Julius was a guest of TAG.



ESP Vision

Vision 2.0

You will be amazed at how well we can improve your Vision.

Lighting simulation to the power of 2!

ESP Vision is distributed by
 BYTECRAFT Entertainment
 66 Euston Rd
 Alexandria NSW 2015
 +61 (02) 8568 4400
 www.bytecraft.com.au
 JC.rirshaw@bytsent.com.au

Mobile Image Co

20 years in business, 2006

TV OUTSIDE BROADCAST VAN



We provide live-switched video coverage

with our mid-sized SDI digital OB Van, fully kitted out with 6 triaxial D35 wide screen cameras, 5 digital VTRs, 4 long lenses, comms, commentary and audio facilities. Ideal for live events, corporates, broadcast or pay TV, sports, downstreaming, screen-feeding & DVD origination. Economical dry-hire with OB engineer, or with full broadcast TV crew. More info: www.nobikimage.com.au

Phone 02 9953 3833

**Senior Rigger
Harry The Hirer
Lighting Audio Division**

Email: phil.cartledge@harrythehirer.com.au
Location: Australia – Victoria – Melbourne
Salary: Negotiable

A rigger currently working within the industry of exhibitions/entertainment and has a full T.A. licence. Capabilities should be as follows. Lead & instruct crews. To plan and understand time critical performance. Handling large volume exhibitions throughout Australia. Large component of private and intricate work, this position will test your aptitude and your ability to think on your feet.

WE WANT A LEADER, WE WANT A DOER - WE WANT A COMMITTED TEAM MEMBER - THIS IS A POSITION FOR SOMEBODY JUST NOT WISHING TO EARN A WAGE. Coporate image a must Salary by neg.



STAGING RENTALS
& CONSTRUCTION SERVICES
Sydney • Melbourne • Brisbane

Australia's award winning provider of event products & services, rental & custom solutions

Set construction, exhibition stands, stages, drapes & bars, linens, & more

www.stagingrentals.com.au
mail@stagingrentals.com.au
Sydney: 02 9519 6300
Melbourne: 03 9681 8462
Brisbane: 07 3854 0699

B.S.Sound PA Hire

3k PA with separate F/B, LX & crew. Driveway, Vocal PA systems & LX, mics and components also available. Contact Mark Barry for free quote on 03 9808 0388 or 0419 993 966.
www.bsourc.com.au mark@bssound.com.au

Gloves & Accessories for the Entertainment Industry



www.setwear.com.au
Free catalogue!

Now available from:
QLD: Pacific Enterprises 07 5596 3595
NSW: Crew On Call Australia 02 9318 2581
VIC: Big Shot Film Services 03 9318 0184

**ADVERTISING INDEX
CX 27 15 JULY 2007**

Audio Products Group.....25, 35, 55, 65	Magna69
Bosch.....52	Mobile Image85
Blue Cat Case Company31, 86	Murray Tregonning27, 38
BS Sound.....86	Nightlife81
Classifieds & Ad Index86	Norwest Productions24
CMI22, 45, 53	PA People37
Chameleon Touring Co.....50	Philips Lighting3
DK International51	Production Audio SystemsIBC
ESP Vision85	Random Audio.....11
ETF.....21	Rentalpoint86
Factory Sound33	Rosco.....77
Gobotech75	Selecon43
Group Technologies.....20	Setwear86
Harry The Hirer86	Showcorp86
Hills SVL7, 8, 9, 11, 14, 15, 19	Soundcorp23
Hoisting Equipment77	Syntec International39, 49
IDT51	Staging Rentals.....86
JandsIFC, 43, 67, 71	Subscriptions.....79
Julius Events College83	Technical Audio Group5, 63
KV2 Audio61	Theatrelight.....34
Lots of Watts16	The Resource Corp.....75
Loud and Clear Audio30	ULABC
LSW44	Yamaha13, 59
Madison Technologies47, 57	Yvonne Doherty.....86
Meyer Sound.....29	

Lighting/Sound equipment

(Adelaide). Deceased estate. Mainly ex-hire. Disco effects, cans, spots, desks, speakers etc etc Mary rare spare parts. Email gottalite@ozemail.com.au for a list or call Rodney 0432 267 363 or Ian 0417 810 729.



metro

The best Events & AV Support Company in **London** is looking for:

- Full Time AV Technicians
- Freelance AV Technicians

Please Contact Claire:
claire.arnold@metrobroadcast.com
with your Curriculum Vitae



JULIUS PUBLISH

ADVERTISING MANAGER:
STEVE JAMES
Call 1800 462 739
EMAIL: cx.mag@mac.com
FAX +61 2 9638 7181
www.juliusmedia.com & go to CX Mag



IF YOU WANT AN ANALOG CONSOLE, THERE'S ONLY ONE CHOICE TO MAKE.

Spectra Series From APB-DynaSonics

Unmatched for sound quality, versatility and value in its price range, Spectra Series truly redefines the art of analog consoles.

All Spectra FOH consoles feature high quality VCAs by THAT Corporation for the most precise control. Exceptional EQ, Burr-Brown mic pres and our unique design approach set us apart from other consoles in terms of sound and performance.

Sound quality, control and rugged modular construction. That's why there's been so much buzz* about the Spectra-C and Spectra-T consoles.

Spectra-C, Ci, T and Ti. A unique rethink that redefines the potential of analog consoles for audio professionals.

www.apb-dynasonics.com



Made in the U.S.A. by APB-DynaSonics

Distributed in Australia & New Zealand by Production Audio Services Pty Ltd

*Read the reviews of Spectra on prosoundweb.com and fohonline.com

www.productionaudio.com.au Ph: 03 9878 1444





Brisbane
 28 Expo Court
 Ashmore, QLD 4214
 Direct Ph: (07) 5509-4633
 Direct Fax: (07) 5509-4677

Sydney
 3/15 Meadow Way
 Botany NSW, 2019
 Direct Ph: (02) 9112-4533
 Direct Fax: (02) 9112-4577

Melbourne
 1/414-440 Dynon St.
 West Melbourne, VIC 3003
 Direct Ph: (03) 9900-4433
 Direct Fax: (03) 9900-4477

ROBE show lighting
 ula group.com

Available now! Call 1300 ULA GROUP to organise a hands-on demonstration with one of our Customer Service Representatives today!

ColorSpot 700E AT :: ColorWash 700E AT :: ColorWash Tungsten 750 AT

The choice is easy.



When reliability & performance really matters...



CALL OUT NOW
 National Sales Hotline
1300 ULA GROUP
 1300 852 476