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Latest confusion



## REPORT:

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systems, monitors,  
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**MINI DISC ATTEMPTS A COMEBACK**

ISSN 1320-5595



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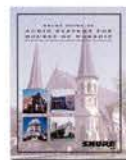
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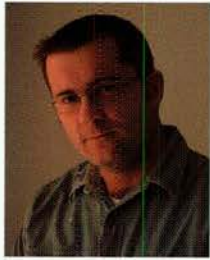
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Considering advances in technology over the last ten years, it is hard to conceive what our industry will be like ten years from now. Occasionally, you get a glimpse of technology to come. One article this month edition talks about a new innovation that has all

the hallmarks of being just such a glimpse.

Neumann, the company that brought us the first mass-produced condenser in 1928, the first switchable polar pattern mic in 1947, the first remote pattern selectable mic in 1951, 48V phantom power in 1968, is about to release a digital mic. So what? Well, despite the fact that some other companies have tried this before, Neumann's approach is set to subtly charge the everyday day approach to micing. Couple this to the audio desk technology that is already on the market, and the result could be...

Imagine a gig where you set up your mics, carefully checking that each individual mic is being set in its usual position. After randomly plugging in all mics into the stage box, you run a single data cable out to the desk.

Meanwhile, back on the stage, one of your colleagues is running power to the speaker boxes, and setting up the network connections back to the stage box. A warning message comes up on your screen, "Speaker No: XYZ has a fault with its primary 15" driver". So, you tell your colleague to swap out that box before any sound comes out of the system.

You load your show sequence into the desk, which automatically interrogates the system to make sure it has everything you need. Another screen flashes up telling you that a speaker is missing (well, you already knew that), and that two of the expected Shure SX58's were not found. Opps, forgot to set up the backing vocals mics. This is quickly rectified.

Then you use the desk to set up the gain structure for each speaker, set up a reference mic at the desk and tell the desk to balance the EQ to the preset you created at the last show. You spend a bit of time walking around the room with the audio riggers remote, tweaking the EQ here and pushing a particular speaker output there, and finally you are happy with the sound of the system.

You then get the desk to run a sound check from one of your favourite tracks in the show (each sound source was individually recorded by the "Show Capture" device at the last gig). All of the virtual faders jump in to position, the vision from the cameras last night comes up on the big screens, and the sound comes booming out of the main PA.

As you do this, the monitor engineer is checking the outputs from the wedges and the IEM's, making sure they all work and are at the preferred level for the band. That complete, you kick back and wait to see whether or not the band want a live rehearsal.

Almost all this stuff exists now - scary.

-John Grirshaw, Editor.

email john@conpub.com.au  
or call +61 2 9876-3530.



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July - Effectors, Small moving lights  
Aug - Portable projectors, Mixers  
Sept - Signal Processing, Outdoor LX

### NEXT ISSUE:

Onsale 4th July, subscribers earlier.

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### FORTHCOMING SHOWS:

INFOCOMM International

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www.icia.org

SMPTE (Broadcast)

Jul 10to13-Sydney www.smpte.org

• More shows, see page 86.

# Meyer Sound System Engineering (101)

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# Connections

The Asia/Pacific Professional Audio and Visual Technology Monthly

JUNE 2001

## Reconvergence as Gearhouse closes

Collapse fuels major realignment, Staging Connections picks up the pieces



Realignment as presentations and event services companies fight over \$24 million worth of work

Gearhouse is no more. The multinational audio visual presentation conglomerate crashed in a spectacular manner earlier this year, and has been sold.

Receiver Arthur Anderson has sold the remaining Australian assets (see story at right) to market leader Staging Connections.

Its inventory of video display systems, audio and conferencing equipment will be distributed among the Staging Connections group. The acquisition includes Gearhouse Perth, which will continue to trade as an independent business servicing the Perth conference and hospitality industry.

Basil Fuller, the Managing Director of the Perth office, said: "Our clients have been fabulous - lining up to see if there is anything they can do to help us through this rough patch," says Basil. "Our operation has always been good here." Basil owned the Perth operation prior to selling to Gearhouse some years ago.

Gearhouse was previously known as Intercity Staging until its purchase by the global Gearhouse group in 1996.

### New startups to grab work

The weeks following the collapse of Gearhouse saw considerable turmoil in its far flung branch offices. Australian management were stood down by the receiver, and communication was patchy.

Ominously, several Australian directors were left facing financial ruin as a bank guarantee to the National Australia Bank for \$750,000 remained in their names. The UK head office had, it is claimed, failed to replace the guarantee before the collapse.

Mark Levi from Arthur Anderson failed to return our call.

We wanted to confirm certain information relating to the conduct of the receivership by Arthur Anderson.

Meanwhile, **ProGear Event Services** in Cairns has purchased all the plant and equipment of Gearhouse Cairns. Accord-

*Continued on next page*

### Marooned in paradise

It seemed like a good weeks work, plus the chance to get to a warmer climate without driving for a couple of days.

Mastersound were contracted to provide production for an African group they had never heard of - O'waba. The \$12,700 deal involved three shows, plus some assistance with a charity gig on the island of Vanuatu.

A Martin PA and John Pascoe's lightrig were air freighted up to the South Pacific paradise on an Air Vanuatu Boeing 737-400.

The first show in Santo apparently went OK, but then unspecified and confusing events conspired to wreck the mini tour.

At presstime, Connections was on the line to **Gabriel Zouain** of Mastersound Productions, who was stuck in a motel without passport - or equipment.

Our call was broken by the arrival of an officer from the High Commission, a truck driver, and a journalist from the local Trading Post newspaper.

Gabriel was attempting to reclaim his equipment, and the passports of his crew (**Jim Peisley**, and **John Pascoe**) and himself.

A local lawyer and police had, apparently, mandated immediate seizure of Mastersound's equipment, which was being held by some party.

As we go to print, Gabriel was attempting to get his equipment onto a flight back to Sydney, presumably at great expense.

Obviously there is more to this story, and we will attempt to follow up next month. Meantime, we are arranging a mercy package of essential items for the marooned crew.

# Connections

9th year of publication!

ISBN: 1320-5595

CONNECTIONS is published monthly - except January - by Connections Publishing Pty Ltd  
Australian Company number 058 443 182  
ABN 66 058 443 182

Mail: PO BOX 439, EPPING  
NSW 2121 AUSTRALIA.

Deliveries: 16 Willoughby street.

Web: www.conpub.com.au

Email: mail@conpub.com.au

Phone: +61 2 9876-3530

Fax: +61 2 9876-5715

Hours: 0900 - 1700 Sydney.  
After hours try any of the mobile numbers below, email, or fax.

#### Advertising:

Julius Grafton, (Publisher)  
julius@conpub.com.au,  
call toll free 1-800-635-514  
or +61 2 9876-3530.  
Mobile 0408 498-180

Subscriptions: call toll free  
1-800-635-514 or +61 2 9876-3530  
or email sarah@conpub.com.au

Bulk sales, dealer sales: toll free  
1-800-635-514 or +61 2 9876-3530  
or email sarah@conpub.com.au

Newsagent sales: NDD code CNC.

Publisher: Julius Grafton  
julius@conpub.com.au  
mobile 0408 498-180

Editor: John Grimshaw  
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Deadlines: Tight, to bring you news faster. 15th of month prior OR BETTER. Call us as late as you like.

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Lawyers: Only when required.

Printed in Sydney by: Superfine

Reprographics: Omicron.

IT consultant: Brendan King

Platform: Apple Mac, the computer voice in the wilderness.

Advertising production & art:  
Sage Art Production & Design.  
+61 2 9981-2891 or email  
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## Who is doing what?



Left to right at AVFX: Cess Markovski and Anna Williams (Owners), Daryl Lapworth (General Manager) and Chris Williams (CEO).

ing to **Danny Sale**, ProGear Managing director, the acquisition has made the company the largest audio visual and events services company in Cairns. They can be contacted on +61 7 4035 6522.

### AVFX Rises from the Ashes

Thursday, 3 May saw the official launch of a new AV event hire company in Brisbane. With the financial backing of **Anna Williams** and **Cess Markovski**, the new company hired 12 former Gearhouse staff that were fired by the receiver on 14 April.

According to CEO **Chris Williams** (husband to Anna), the Cess saw the opportunity to get into the AV Hire business after it became public knowledge the Gearhouse was in the hands of receivers, and he made an offer to buy the Brisbane office.

Around the same time, staff at the Brisbane office were given their one month termination notice, which was due to fall on 14 April. According to Chris, when they heard no reply from the receiver, an offer was made to a select group of the Gearhouse staff to join the as yet unnamed company. As a result, 12 members of staff commenced employment with AVFX on 17 April.

While there has been some industry speculation as to exactly what happened prior to and during this changeover period, Chris told Connections that no equipment or documents came with the staff.

"Not one article of property and not one article of documentation came here from Gearhouse," said Chris at the launch.

(continued on page 85)

### Inertia Event Solutions vie for Sydney and Melbourne contracts

Gravity Media are establishing a new audio visual staging firm in Sydney following the collapse of Gearhouse. To be known as Inertia Event Solutions, the new company will run alongside Gravity's Gearhouse Broadcast operation.

Gravity Media, a UK controlled company, purchased the international business of Gearhouse Broadcast as a going concern in early 2000. They operate in the UK, South Africa, and Australia.

Gravity were negotiating with Gearhouse to acquire its Australian operations before the sudden collapse of the group. Those negotiations resumed with the receiver, to no avail.

Now Gravity are launching their own start-up company, capitalised at over A\$2 million.

Former Gearhouse staffer **Mario Valenti** (right) is Operations Manager. The firm will be headed by Gravity Aust. CEO **Graeme Elliot**.

Inertia will offer this month, and feature inventory including new Barco G5 5000 ansi lumen projectors. They plan to concentrate on the high end vision market, and will complement their inventory with Sony PX 21 and 31 midrange projectors.





Pictured in Vegas: (from left): **Steve Vining** (Euphonix), **Alistair Dewar** (TAG), **Bryan Powell** (ABC), **Piers Plaskitt**, (Euphonix), **Dave Christenson** (Euphonix).

## ABC TV chooses Euphonix System 5B

### 10 consoles ordered in move to digitise studios and new fleet of OB Vans

Euphonix announced at the 2001 NAB Convention in Las Vegas that the Australian Broadcasting Corporation had entered into a contract for the purchase of 10 System 5B consoles.

The sale was completed through **Technical Audio Group**, Euphonix distributor in Australia. **Alistair Dewar**, TAG's Euphonix Product Manager noted, 'ABC TV purchased System 5 because of its flexibility, the time saving aspects of recallable routing, layouts and snapshots and because it performs the functions needed for ABC OB's and studios extremely well.'

The majority of the new consoles will be installed in a new fleet of OB vans to be based in capital cities throughout Australia.

This unprecedented move represents Euphonix largest single order of The System 5 since its' introduction in September 1999. With total sales worldwide of 80 consoles to date, the System 5 is one of the fastest selling, large format, all digital console in the industry.

This order comes on top of three System 5 consoles purchased by Network 7 for the Sydney 2000 Olympics

**Euphonix is distributed in Australia by Technical Audio Group ph +61 2 9810 5300**



## Gloves off at Dynalite

For more than a year, a storm has been brewing between John Gunton Pty Ltd, the Australian manufacturers of Dynalite products, and Dynalite Ltd in the UK. Dynalite (UK) were the distributors of the equipment coming out of the Sydney Dynalite factory (above) until a rather complex chain of events happened.

Connections has learned that late in 1999, John Gunton caught wind of the fact that Dynalite (UK) were thinking of teaming up with a UK dimmer manufacturer. By around April in 2000, this rumour became reality for Gunton when Mike Prior, at the time the Company Secretary for Dynalite (UK), visited Sydney and told him about the plans for the UK operation to amalgamate with Zero88.

According to Gunton, their stated intention at the time was apparently that they wanted to pursue more theatrical installations - an area

*Continued on page 85*

## Jands into Live Audio Industry workshop weekend in July

Jands will host an event across the weekend of 14th and 15th of July at the Manning Bar at Sydney University. Entry will be free but people need to register first.

"What came out clearly from our Industry Nights was the strong desire for people to see, touch and try real audio and lighting" says Jands Director of marketing Peter Grisard.

"We will make available a range of gear on display and experienced technical staff will host informal training sessions. Obviously Jands staff will feature largely in this operation, but I'm asking other companies to send their "gurus" over to be involved in the seminars."

The weekend will appeal to musos with an interest in sound systems, live engineers, and budding audio people.

A range of free seminars will be run, obviously spaces at these will be limited. Musical artist Craig Calhoun will assist by acting as an audio source so students may try different mics/locations/and mix balances.

Prizes and events will feature through the weekend, in what is shaping up as a major effort.

• **Contact Jands on +61 2 9582-0909 or see [www.jands.com.au](http://www.jands.com.au) for more.**

## DJ Gear: listing mangled

*Nick Orsatti from Jands writes:*  
I don't like to see editing performed that turns accurate information into utterly useless information. I refer here to the DJ market report last month. You concentrated both the Stanton and Rane product information provided, and you managed to turn a Cartridge into a Turntable (Trackmaster II RS is NOT a turntable). Additionally Rane make CLUB mixers and SCRATCH mixers - two very different beasts, two very different applications, but you choose to write up only the new club mixer.

And then finally - you LEAVE OUT Shure entirely! (*Oops! Ed*)

## Who is doing what?

### LAMP PRICES TO RISE

Coemar De Sisti are warning customers that both Osram and Philips Australia have informed them of imminent price rises in early June. Thanks to Simon Prictor for the 'heads up'. Contact him on +61 3 9467 8666, and he will also happily sell you lamps before the rise.

### ULA MOVING HOUSE

ULA have moved their Qld premises to a new, purpose built facility at 11 Distribution Avenue, Ernest QLD 4211.

The new contact details are:

Tel + 61 7 55101333,

Fax + 61 7 55101344,

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[www.ula.com.au](http://www.ula.com.au)

### DSP Media Moves

DSP Media has moved their production and development division to a new building at 1A Hill Rd, Homebush Bay, NSW 2127.

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[www.dspmedia.com](http://www.dspmedia.com)

### Stagerig is born

Gary Thomas has created a new rigging firm in Sydney, called Stagerig. A joint venture with Scafform's founder **John Butler**, Stagerig is run by Sydney rigging identity **Roger Cameron**.

"There's a point of difference here" says Thomas. "At the end of the day, we're still smiling".

Roger Cameron seeks interested riggers and is starting a 'riggers register'.

Contact him on  
+61 2 9663-5155.



New premises for Show Technology. Inset: Owners Emmanuel and Gina Ziino

## SHOW TECHNOLOGY MOVE INTO NEW HQ

SYDNEY: Show Technology Managing Director, **Emmanuel Ziino** has revealed intentions to make his new headquarters a 'Knowledge Centre'.

"We want to run more seminar programmes as they are always hugely successful," said Emmanuel. "We want to be more than just a supplier. We want the new headquarters to be a place people want to visit to learn about products."

"I don't want Show Technology to be known as a distributor - anyone can bring in boxes from overseas, put a margin on them and get them out the door. We want to be known as a knowledge company, which is a big shift: of thinking especially in our industry. We are a source of information; we have a lot of expertise".

• Phone +61 2 9748-1122.

## Meyer to host audio courses

Meyer Sound are hosting two 5 day courses in the finer points of sound system engineering. To be held in Sydney from 23rd July, and Melbourne from 30th July, this course is described as a must for anyone involved in the design, rigging, tuning and alignment of sound systems.

Meyer wanted to let us know that although they will take the opportunity of pointing out "the superior performance of Meyer Sound loudspeakers" during this seminar, it is not primarily a sales pitch and the knowledge gained applies to all sound system engineering.

For more details and enrolment, you can go to the Meyer Australia web site - [www.meyersound.com.au/seminar\\_spec.htm](http://www.meyersound.com.au/seminar_spec.htm) or phone +61 7 3252 4433

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point high and low cut filters) as well as Dynamics control with Compressor/Ducking and Expander/Gate.

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So, by all means listen (your golden ears will never be the same) but please appreciate the operational features of the R100. Your projects and creativity certainly will.

Call 1800 017 669 for further details (for Sydney call 9878 9736) or check-out [www.sony.com.au/proaudio](http://www.sony.com.au/proaudio)

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What will you be using soon?

## 96 kHz AND 48 TRACKS ON A SINGLE HARD DRIVE

### Fairlight's updated QDC technology engine

For users 'in the know', they would be aware that there has been a distinct limitation in playing/recording more than 24 tracks of 96kHz audio from a single hard drive at the same time.

This is one of the most critical issues raised by the proliferation of high-resolution digital audio recording.

Do you sacrifice tracks for resolution? In other words, do you opt for 24 tracks at 96 kHz, or 48 tracks at 48 kHz?

Fairlight's QDC Technology engine now enables audio professionals to get 48 tracks of 96-kHz/24-bit audio at the same time - on the one hard drive.

The technical, sonic, creative and economic aspects of this achievement are significant. Most audio facilities that are contemplating new audio equipment investments must allow for 96-kHz/24-bit audio in their decision process; such capability is critical to addressing the wide range of multi-format projects that are already being demanded by the increasingly diverse customer base.

This update can be applied through the family of digital audio workstations, including the Merlin, MFX3.48, Prodigy2 and FAME2. No matter how complex the operation, such as seamless, gapless, punch-in and punch-out across all 48 tracks to a single hard disk, Fairlight claim the QDC engine can handle it. This superior performance is available on all QDC-driven products.

The upgrade itself for users of existing systems involves a full DSP engine swap out. After this, users will immediately notice faster access speed, and far greater sound quality. Contact Fairlight for pricing details to upgrade your system.

• Fairlight +61 2 8977 9923

## Genex Launches Multi-Channel DSD Recorder For Super Audio CD Production



UK-based manufacturer, Genex, has finally released the long anticipated professional multi-channel DSD recorder - the Genex GX8500. The recorder has already been used on a number of location classical recordings intended for SACD release, and also for the re-mixing of back catalogue material destined for SACD.

"The capacity for up to 8 channels of DSD recording allows for simultaneous recording of a stereo mix and a 5.1 channel mix, a feature that will prove powerful for

upcoming production of multi-channel SACD software," says Ayataka Nishio, Senior Engineer in Sony Corporation's Super Audio CD Business Center. "Moreover, the addition of DSD compliant A/D and D/A converters will help to further realise the industry's high expectations for DSD recording."

At the end of 2000 there were eleven SACD players in the market supplied by a number of consumer equipment manufacturers. These include Sony, Philips, Marantz & Accuphase.

Genex Research founder Kevin Brown is excited by the prospects for his technology; "The facility to record DSD gives the GX8500 a unique extra dimension alongside its already market-leading 24-bit/192kHz PCM capabilities."

In Australia, the first pre-release delivery of the GX8500 has now done the rounds of major studios, and is currently being evaluated by the ABC. Pricing starts around \$18k and depends heavily on the configuration of hard drives & A/D & D/A converters.

• Audio Products Australia P/L 1800 642 922  
(For info on SACD, see our article "DVD-A vs SACD" in April 2001)

## ARX SPL 8 - Ultra Compact Powered Speaker

The ARX range of SPL Powered Integrated Loudspeakers has been further expanded with the release of the new SPL 8 Ultra Compact Self Powered Trapezoid Loudspeaker.

Featuring a new 8" (255mm) Low Frequency Driver and a FerroCooled High Frequency Compression Driver in an Arrayable trapezoidal reflex loaded Cabinet with integral steel grill, flying hardware and recessed stand mount, the SPL 8 is shipped truly 'ready to work'.

The SPL 8's fully integrated amplifier/speaker combination offers ARX's proprietary ISC system protection, ensuring maximised high power output whilst retaining low distortion and providing true sonic accuracy. The SPL 8s unique fan-cooled



heat exchanger provides reliable consistent heat dispersion, even at maximum SPL.

The SPL 8 is supplied with input & output Neutrik PowerCon AC connectors and loop through XLR connector's for ease of cabling multiple unit systems.

The modular amplifier design inside the SPL 8 uses the existing ARX analog amplifier technology. Its transformer based power supply and Mosfet drive circuitry both enable a reduced parts count for long term reliability. Plus, with their inbuilt self-regulation, ARX say Mosfets are

accepted as being the most thermally reliable and predictable amplifier output stage currently available. Retail: A\$1,476.

• ARX Systems ph: +61 3 9555 7859



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CONMS4

What will you be using soon?



### Window to the future:

The controllable parameters include polar pattern, pre-attenuation, low-cut, pre-amplification, various indicators of microphone status, command indicators, mute and phase reverse functions. It is also possible to follow signal levels on the screen.

The information transmitted by the mic include manufacturer name, type, & serial no are displayed and used for positive self-identification of the microphone connected.

In addition, it is possible to add self-written notes, for example, the name of the sound source and positioning of the microphone. Of course, it is also possible to store and retrieve the setup for the entire recording session.

• For more information contact the Australian distributor – Amber Technology Pty Ltd +61 2 9975 1211

## Solution-D – Neumann goes Digital

AES 42-2001 standard means your mixer can talk back to the mic!

This year at the AES, Neumann previewed a product that is the first of its kind: a digital microphone. With a difference. With the Solution-D, Neumann has transferred the dynamic range and fidelity of their best analog studio microphones into the digital domain

The first product of the Solution-D digital microphone generation, which is unveiled at the AES, consists of three components: the Digital Microphone D-01, the Digital Microphone Interface DMI-2, and remote control software that permits operation and thus remote control of the microphone.

Signal and data transmission of the microphone conform to the new Standard AES 42-2001.

### The D-01 Microphone

At first glance, the actual D-01 microphone looks no different than its analog counterparts. Right behind the microphone capsule, however, is an A/D converter specially developed by Neumann and optimized for the signal level of the microphone capsule. The signal sent by the microphone capsule is converted directly into a digital signal. The result is an internal digital 28-bit signal with a dynamic range of more than 130 dB (A-weighted, microphone capsule incl.).

Here's the sexy part. The digital signal is processed with the help of an FPGA (Field Programmable Gate Array) built into the microphone. This means that parameters such as polar pattern, pre-attenuation, low-cut, pre-amplification and various switching functions can be controlled externally. As a result, devices such as analog pre-amps and A/D converters are no longer required.

For positive self-identification, the microphone transmits information such as manufacturer name, type, serial number, and implemented software level to the connected receiver.

The microphone is equipped with a three-pin XLR connector via which the supply voltage, phantom power, and remote control data stream are transmitted. The signal components for a control loop as required for synchronous transmission are also contained in this data protocol. The output signal of the microphone conforms to the AES 42-2001 data format.

### Digital Microphone Interface DMI-2

Solution-D microphones connect directly to any equipment that supports the new AES 42-2001 Standard. In all other situations, the



Neumann Digital Microphone Interface DMI-2 is necessary. This separate, two-channel device converts the AES42-2001 data format of the microphone into an AES/EBU signal. The system is operated by means of the Neumann remote control software of a computer connected to the DMI-2 interface via a USB connection. If a large number of microphones are used, it is possible to cascade multiple DMI-2s and still provide each interface with an individual address.

Besides word-clock input and output, the unit also has an integral master word clock generator that, in future upgrades, will support sample rates of up to 192 kHz. If there is no word clock at the input, then the internal master is used automatically to synchronize both microphone channels and is switched to the word-clock output.

External commands (eg: a red "On Air" light) can be controlled via a 9-pin user port.

### Remote Control Software

The digital microphone is controlled by remote control software, which would ideally be part of a recording system, but can also run on a stand-alone computer.

The controllable parameters include polar pattern, pre-attenuation, low-cut, pre-amplification, various indicators of microphone status, command indicators, mute and phase reverse functions. It is also possible to follow signal levels on the screen.

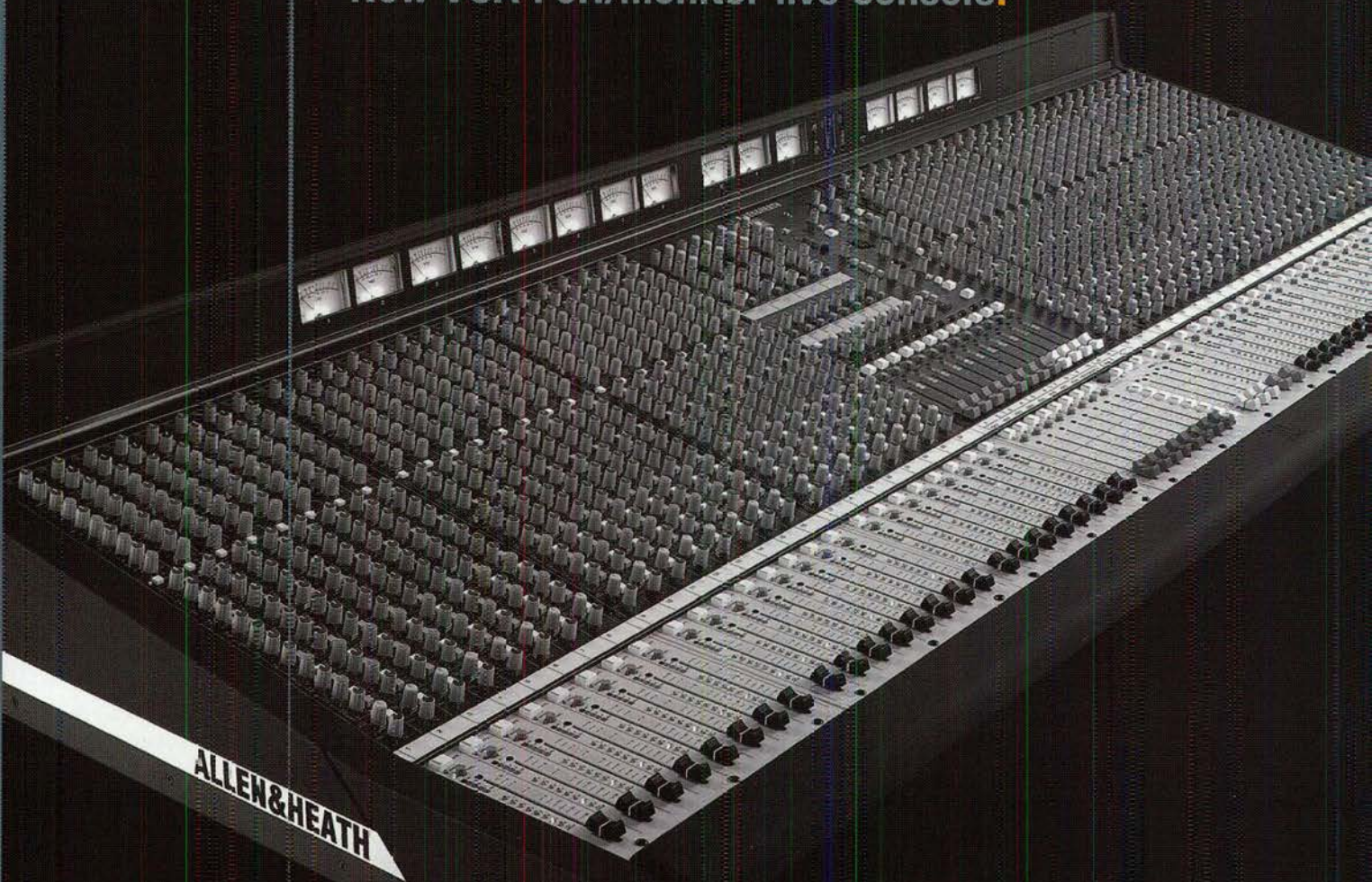
The information transmitted by the mic include manufacturer name, type, & serial no are displayed and used for positive self-identification of the microphone connected.

In addition, it is possible to add self-written notes, for example, the name of the sound source and positioning of the microphone. Of course, it is also possible to store and retrieve the setup for the entire recording session.

While the system was actually launched at AES, Neuman intend a further 6 months of field testing before making production models available.

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*What will you be using soon?*

### RENKUS-HEINZ Release REFLEX Series

Renkus-Heinz has introduced their new RFX series of loudspeaker products, utilising their Complex Conic horn flare technology.

The RFX series is designed for small to medium sized production companies, corporate production and permanent installation.

The range consists of the 61-E 6"+ Horn (\$1599), 81-E 8"+ horn (\$1999), 82-E 2 x 8"+ horn (\$2599), 121-E 12"+ horn (\$3,099), 12S-E 12" Sub Woofer (\$2699) and the 18S-E 18" Sub Woofer (\$3899).

In addition to these, Renkus-Heinz has incorporated its TRAP True Array Principal into their two top models the RFX121T-E (\$3799) and RFX151T-E (\$4599).

The TRAP technology allows smooth lobe free arraying almost eliminating dead spots.

These compact loudspeakers are designed for applications where size is a real issue. The RFX61 is less than 40 cm tall, yet puts out 113 db SPL. The RFX81 and RFX82 use single and dual 8" woofers respectively and employ 90° x 60° Complex Conic horns.

For higher-power applications, the RFX121 makes an impressive alternative. Multi-angle enclosures work equally well as floor monitors or on tripod stands. Replace the bottom plate with a U-Bracket plate, and these compact REFLEX loudspeakers can easily be mounted on walls or ceilings. The rotatable horns allow you to orient the cabinet vertically or horizontally and still get either "wide" or "tall" coverage.

REFLEX subwoofers are based around high power woofers and vented, rigidly braced enclosures that deliver maximum efficiency and punch. Single 12" and single 18" enclosures can be combined to get the ultimate transient response and true sub-bass, or stacked in horizontal or vertical line arrays.

• **Info from Audio Sales & Marketing, +61 2 9585 1011.**

## JBL roll out M Series

New range features a VGC subwoofer with a Crown Amp inbuilt

JBL have substantially revamped and simplified their offerings at the lower cost end of the PA market, replacing the TR and MR range with the M Series.

There are two families of product within M Series, the 200 series and the 400 series. These are distinguished as follows:- the 200 offer slightly less power than the 400, and are finished in black carpet. The 400 come in a duraflex finish, and deliver more output.

Its in the packaging and specifications dept that JBL have made the most significant advances in this market sector since Mackie decided to build loudspeakers. Mackie brilliantly seized on the 'plug and play' aspect of their product, integrating self powered models with good feature sets and clear component labelling.

Now JBL have stepped up, with some unique and clever concepts. Start with the MP 418SP subwoofer (below left, \$4,995). This is a box containing one VGC 18" woofer in a direct radiating or front loaded configuration, and a Crown CE amplifier in the back. It shines because the amplifier is a 2 x 660 w devices which can be configured in several ways. The hire companies are going to like this box.

Example: use one channel of the amp to drive the sub, and the other to drive a passive



version of the same sub (MP 418S, \$2,495).

Or, drive the sub plus a satellite box, such as an MP 410 (10" and horn cabinet, \$1,695).

The MP 410 in turn boasts some neat features, like the one piece integrated front baffle assembly (bottom right), which has the 70 x 70° horn integral. It has a slightly curved or concave face, evident in our picture, which is said to minimise distortion, and port noise (chuffing). Having the horn integral allows a slightly large horn mouth and reducing the depth of the driver and horn assembly, also improving pattern control.

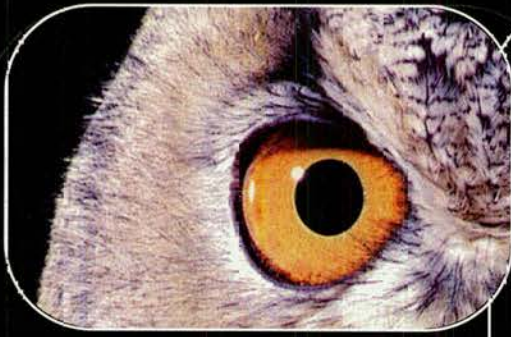
A new 1" compression driver is used, called the 2412.

The MP 215 (\$1,295) is pictured at left atop the MP 255 dual subwoofer (\$2,295). The sub is loaded with 2 x 15" woofers in a bandpass design. It has a low pass filter inbuilt, and will run without a separate sub amplifier, so one amp channel can drive the top box plus the subwoofer.

That will need to be a beefy amplifier, delivering at least 600 if not 800 watts into 4 chms.

• **Jands, +61 2 9582-0909  
or [www.jands.com.au](http://www.jands.com.au)**





## THE DETAIL

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- Slow attack optical HF limiter
- True Clip indicator LED

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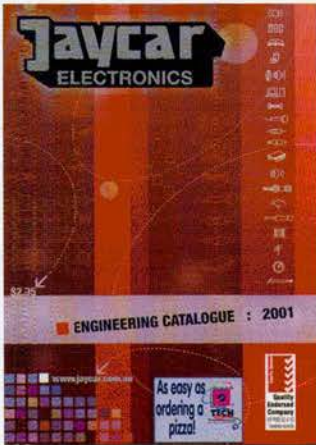
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What will you be using soon?

## Jaycar Release 2001 Catalogue



The latest catalogue from Jaycar is sure to please those that tinker with all things electrical.

Of the many new items carried in this edition, included are two digital audio format converters. One for S/PDIF to Optical Toslink and a separate one for Optical Toslink to S/PDIF. Each are priced at \$39.95 (pg 224).

All products are searchable in Jaycar's on-line store at [www.jaycar.com.au](http://www.jaycar.com.au)

Jaycar have coincided the release of their new catalogue with the completion of their move to new premises in Sydney.

Jaycar is now located at 100 Silverwater Rd, Silverwater. Phone +61 2 9741 8555.

## Introducing LeFlame from LeMaitre

LeMaitre has joined the ranks of a few lighting manufacturers to bring a flame effect to the market. 'LeFlame' is basically a lighting fixture simulating a real flame without the fire. You saw a similar concept at ENTECH last year from the Unique Flamelight Co.

The assembly consists of a fan set at a constant speed, blowing air up from beneath two pieces of silk, and three MR 11 20-watt halogen bulbs, used to light the silk using in two colours (two orange & one blue). The combination of the fan speed, silk material and size, along with the selected gel colours achieves a believable flame simulation. In addition, two 'bowl' fixtures are currently offered by LeMaitre in which the effect assembly can be placed. Priced at \$834.

• Universal Lighting and Audio 1800 648 111



## MARTIN ATOMIC 3000 DMX



With the Atomic 3000 DMX, Martin has developed what they claim to be "the ultimate strobe effect". The Atomic features a 'ground zero' blinder effect designed to blow away any crowd. In the nicest possible way

Presented in a durable housing, the Atomic can control flash (dim) level from 0-100%, flash duration and flash rate from 20ms to 2 seconds.

The Atomic 3000 DMX is fan cooled and DMX controllable and employs an integrated heat control that eliminates the need for cool down time.

The Atomic 3000 DMX comes with pre-programmed special effects, a long-life Xenon lamp and it can operate in DMX or stand-alone mode.

While the price of the unit was not available at the time of printing, Show Technology expect to be able to finalise the price by the time you read this.

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### Extreme Optics

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# Martin



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What will you be using soon?

## GENI SPIN MASTER III



Set to make an impact on Australian dance floors is the new 300 watt Spin Master III from Geni. Spin Master III is the first full 360° full barrel effect that radiates spinning, flipping coloured images, they say.

Spin Master III's innovative head mechanism allows unprecedented movement in a full-barrel effect. Sixteen coloured images whirl, twist and flip, under both audio and DMX control via 3-pin XLR connectors. The Spin Master III's dimensions are 475x220x160 mm (without bracket) and it weighs in at 7.7kg.

**Price: \$999.00**

**Australian Distributor: Show  
Techno.orgy +61 2 9748 1122  
www.showtech.com.au**

## SHOWTECH RIGGING SAFETY KITS

Showtech Rigging have added safety kits to their hire inventory. The kits come complete with all the necessary safety requirements to make any event site safe, such as visibility vests, safety glasses, ear plugs, hazard tapes, safety signs, hard hats, witches hats and so on.

**Showtech Rigging Australia  
+61 3 9645 4133  
robbyn@showtechaustralia.com.au**

## MARTIN MP2 UPLOADER



New from Martin is the MP2 that allows you to update software and adjust settings on selected Martin fixtures remotely via the serial link.

For storage the MP-2 uses a flash card that holds multiple fixture update files and associated personalities. The MP-2 ships with an 8 MB card that holds up to 14 update files and associated personalities. The Flash card can be easily changed if more fixture personalities are needed.

Furthermore, the MP-2 features a DMX trouble shooting tool that can be used to edit and send DMX values to connected fixtures

or to monitor incoming DMX from consoles. It is possible to record up to 16 snapshots of DMX input or DMX output for easy restore of these values at a later point.

Hardware features include aluminium housing with rubber fenders, 20 x 4 LCD display and 8 navigation keys, DMX IN / OUT connection, slot for memory flash-card, 8MB memory flash card included, in-built collapsible legs for table use and brackets for 19" rack mounting included.

Software features include up to 14 fixture updates and associated personalities on an 8-MB flash card, upload fixture software, remotely adjust fixture settings, DMX monitor and editor and 16 storable snapshots.

Supported fixtures are: MAC2000 Profile; MAC600; MAC500; MAC300; MAC250; MiniMAC Profile/Wash; MiniMAC Maestro; RoboScan Pro 918; Exterior 600 and Exterior Compact.

• **Price: \$2199.**

**Show Technology +61 2 9748 1122**

## New Philips P3 = improved stage and studio lamps

A technology that promises a better lighting deal for the entertainment industry, says Philips Lighting. They claim their constant investment in new technology promises users of halogen lamps a better lighting product for entertainment applications.

Their lamps now incorporate a new technology called P3, which involves coating the pinch leads with a protective coating, offering better value and higher performance. This results in: improved lighting quality throughout the life of the lamp; even greater reliability, by reducing the expensive and troublesome consequences of early lamp failure; and more freedom, allowing the lamp to be used in any burning position, for greater creative flexibility.



To help distinguish the lamps with P3 technology, Philips have developed a logo which can be seen on the lamps and on the outside of the new packaging re-branded 'Broadway' which launches the P3 technology.

In future, Philips Lighting halogen lamps for entertainment application will be branded 'Broadway' and be delivered in an improved, new-look packaging. The Single boxes now have eye catching black and red graphics covering the

total box, combining images related to the entertainment industry, providing instant brand recognition and product identification at a glance.

• **Philips Lighting ph +61 2 9805 4113**

# P3 technology gives you better protection in any burning position

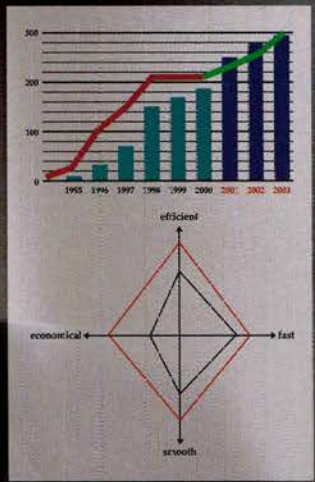
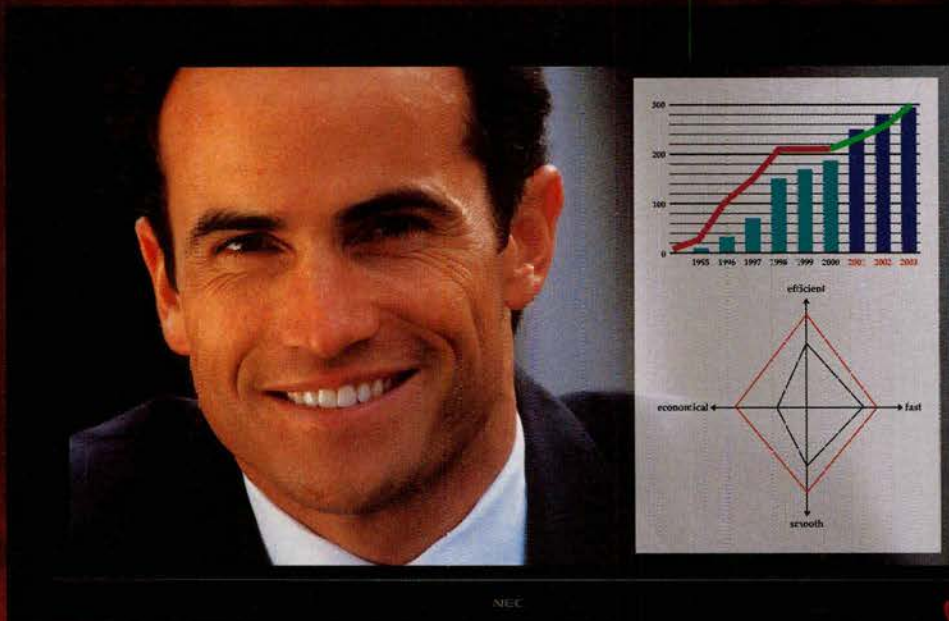


Until now burning positions for lamps within the entertainment industry have been restricted. Now, P3 technology from Philips Lighting gives lighting designers the freedom to use lamps in any burning position safely, without reducing lamp life. P3 technology offers you greater design freedom, improved quality and reliability at no extra cost to you. Just look for the P3 technology sign on our new packaging – the sign that gives you an all round better performance for your money. Visit our website at [www.broadway.philips.com](http://www.broadway.philips.com) or phone 13 14 01.



# PHILIPS

*Let's make things better.*



## No Wonder it has the Best Position in the Boardroom.

### The NEC PlasmaSync 50MP1 50" Wide XGA Plasma Monitor

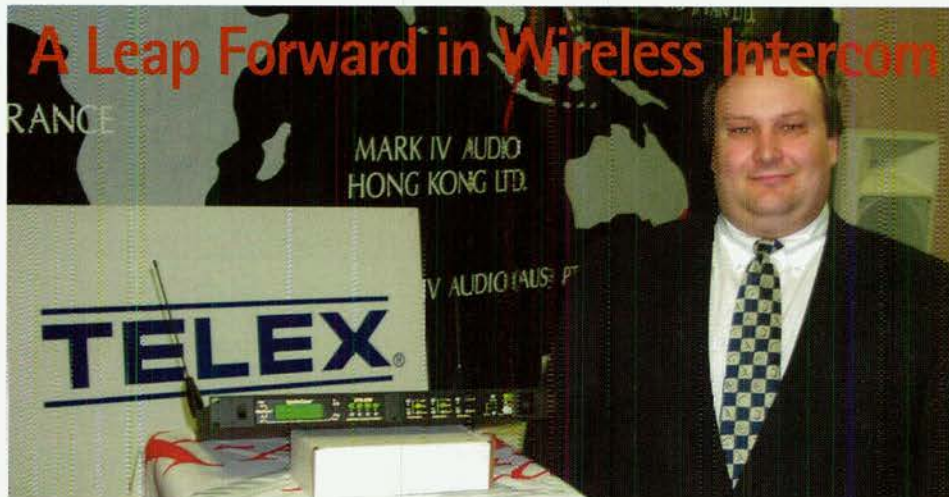
The PlasmaSync 50MP1 is the best way yet to reach an audience and hold their attention. Its flat 50" display is not only impressively large, but it delivers an awesome 1365 x 768 resolution for incredibly sharp detail and colour reproduction. It offers outstanding visibility under all lighting conditions and its thin profile and versatile mounting options enable it to be used virtually anywhere. But that's not all this advanced monitor has to offer. You'll be able to take advantage of the first MULTI SCREEN operations (video and computer images) offered in a plasma monitor, as well as Digital Zoom, full digital compatibility and more. For business, for education, for sales...for whatever target audience you want to reach, the PlasmaSync 50MP1 is the most advanced, dramatic way to convey your message.

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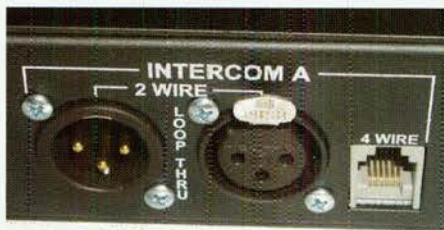
What will you be using soon?



The folks at Telex have taken wireless intercom to the next level, with the release of the RadioCom BTR-800. Tom Turkington (pictured above), Telex's Intercom Product Manager and one of the people behind the design of the new system, was recently in Australia to help launch the product, and Connections was there to take a look...

The BTR-800 is a 1RU device that uses UHF frequencies to communicate in full duplex (speak and listen at the same time) mode with up to four substations. It is very obvious that a great deal of thought has gone into this product as it packs a vast number of features.

Like many standard wired intercoms, this system use two intercom channels, and each substation operate on both or either channel, including being able to listen to both and reply on one. Each of these two loops of standard intercom can be connected from any existing loops in either a 2 or 4 wire form.



In other words, existing AudioCom, RTS, Creative Audio and ClearCom systems can simply plug straight into this device.

Each of the substations can also talk to each other without that audio being added to the standard talk-back loops. The feature called Wireless Talk: Around (WTO), allows technicians to communicate directly without interrupting the ongoing shows calls from the stage or floor manager.

A feature called Stage Announce (SA) allows any belt pack to make a separate announcement directly to a PA system. This feature also includes a relay contact closure in the receiver, where the relay is closed for as long as the SA button is pressed.

On each substation, any button(s) can be locked off to prevent that sub from listening to one of the two loops, prevent mic activation, and prevent SA or WTO etc.

The base station has a considerable number of features to make it useful is almost any

application. It uses two bands of UHF transmission to send and receive audio, 554-572MHz (transmission from base station) and 704-722MHz (transmission from belt packs). Channels are available in 25kHz increments, making 720 individual frequencies available in each band. There are 24 channel groups pre-programmed into the unit, and 12 further groups that can be user defined. Each group requires two frequencies in for the base station to transmit and four frequencies for each of the substations to transmit.

(continued over)

## EPSON Projection on the Network



Coming on the heels of the announcement in the last issue of Connections for Epson's new range of projectors, the company has announced the availability of the EPSON EMP8150 - a fully networkable projector.

The EMP8150 can be connected to a network via a 10/100BaseT link and assigned its own IP (Internet Protocol) address. With this functionality, the projector can be used to deliver full multimedia presentations without the need for a connected PC or notebook.

Weighing approximately 9.1kg, the EMP8150 has a brightness rating of 3200 ANSI lumens, and a contrast ratio of 400:1. It also has improved Electronic Keystone Correction of +/-30 degrees. The unit is expected to retail at \$24,340.

• For information on your nearest supplier, contact Epson on: +61 2 9903 9000.

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E-mail savetime@wire.net.au

What will you be using soon?



Wireless intercom (continued)

When setting up the unit, it can perform a 'Clear Scan', in which the unit interrogates the RF spectrum, listening to what channels are already busy, and then suggests the best channel 'group' to use. If the spectrum is too crowded, unit can perform a 'Long Scan', in which it integrates each frequency, and tells you which ones are available. Using this feature will require some knowledge of how the RF spectrum interacts so that frequencies can work together are saved into a user defined group.

Once the channel group to be used is selected on the base station and all of the substations, the base station can then tell you what each of the substations are doing at any given time on the LCD display. Each substation is identified from 'A' to 'D', and the display indicates in to the unit is in range (or off), on what talkback loop and if it is talking to SA or WTO.

The base station has two individual transmitters, one for each of the talkback loops. These are coupled to use a single antenna.

Each substation has an 'Intelligent Transmitter Power' feature, which reduces the transmission from the maximum 50mW as it gets closer to the base station. This remarkable feature helps to prevent the 'near/far' desensing problem that can be experienced by wireless systems.

The receivers all use a tone coded squelch as well as an RF noise squelch to ensure that only the required audio is passed. The filtering is so good that, at a recent test at Sydney Opera House, when a mobile phone was being used immediately adjacent to the base station, none of the familiar buzzing was broadcast to the substations.

On the base station, both of the antennas are half-wave (not quarter-wave). This allows the antennas to be remote from the base unit using common 50ohm cable without worrying about ground plane issues.

As any audio enters the base station, it is immediately converted to digital audio, and all balancing, filtering and other audio manipulation is carried out in the digital domain, resulting in incredibly clear audio. In fact, with a properly set up system, there would be absolutely no audible way for a cabled intercom to realise that they are talking to a wireless.

For situations where more than four substations



are required, there are a couple of options. The base stations can be linked so that only one is a transmitter, yet they can all receive from their allocated substations and incorporate the audio into the A/B talkback loops as required.

Alternatively, at least two base stations can be used completely separately without interference (more than two base stations can be used at once by RF savvy technicians).

According to the specifications, the operating distance is around 330m, though considerably further can be achieved line of sight. Tom Turkington said that when the unit was tested at VAC, the technicians that were wandering around the complex were surprised how far they could get – certainly further than any system they had used previously.



The substation has a couple of additional design features. Firstly, the headset connector is placed so that the XLR plug does not protrude from the bottom of the unit. When the headset is plugged in, the sub station automatically interrogates the mic to find out if it is dynamic or electret, the impedance and voltage requirements (if power is required to drive the mic), and adjusts the connection accordingly.

NiMH batteries and charger systems are available, but the substations will run for at least

14hrs on 4x AA alkalines.

With all of these features, you would expect a Rolls-Royce price. While some might consider a system with four substations at \$21,450 to be a bit pricey, to achieve this with radio mics and 'in ear' monitors would require you to purchase four mics and two IEMs. With that in mind, the price doesn't seem so high.

For more information or the location of your nearest Telex supplier, contact EVI Audio on +61 2 9648 3455.



# Satisfaction!



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

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

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

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



**When will you change?**

# MiniDisc Reborn?



MiniDisc has always been looking down the barrel of audio purists trying to shoot it down. With the growth of MP3, the acceptance of compressed audio by the general public appears entrenched. Now Sony is looking at competing directly with MP3...

by John Grimshaw

**I**t seems that audio formats are constantly coming and going (recently we looked at DVD-Audio and SACD) and only very few stay for the long haul. Certainly nothing has yet had the time to match the +100 year history of the "Vinyl" format, and there is every indication that CDs will be with us for a long time to come.

Many formats that originally seemed like they were going to be big have now turned into niche products. MiniDisc (MD) is a classic example of this. In its original conception, MD was supposed to be the replacement to the tape – recordable, digital and robust.

It used a compression algorithm called ATRAC (Adaptive Transform Acoustic Coding) to make the 140Mb discs capable of recording 74min of stereo audio – a compression ratio of 5:1. When it was released, studio engineers and other audiophiles discovered that the sound quality was not as good as CD (though certainly better than tape – the only consumer recordable audio format at the time).

The first version of ATRAC was described as "a bit Lassy" & could add digital artefacts to the audio in certain situations. Thus, many audio professionals have turned away from the format, never to return.

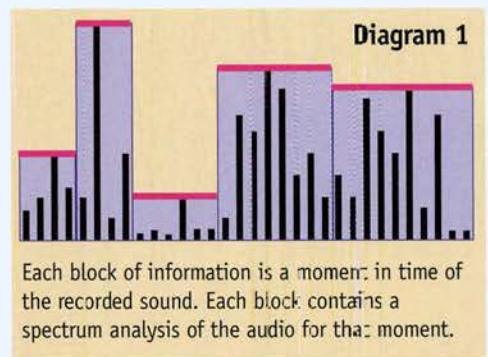
Sony's significantly improved ATRAC 2 helped to keep the format alive with consumers. Sharp also created and released chipsets for ATRAC compression in their own MDs. These two companies have now spent much time in R&D, improving the format.

Both companies separately released different versions – ATRAC 2,3,4 and 4.5. Sony, realising the confusion between the two manufacturers and different numbers, have removed the version number & released ATRAC DSP Type-R.

## How does ATRAC work?

In short, the audio input is turned into a sequence frequency spectrum analysis'. These are then analysed, compressed and written to disc. The slightly longer version of what happens is...

Each moment of incoming audio is analysed and divided up into frequency information elements, much like a spectrum analysis of each sample of audio. These frequency elements contain amplitude information for those frequencies and are all grouped together to form a "Block" of information – thus describing that moment of incoming audio (diagram 1).



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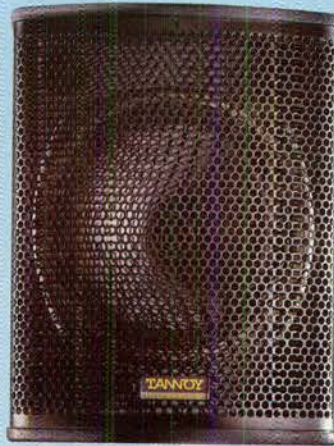
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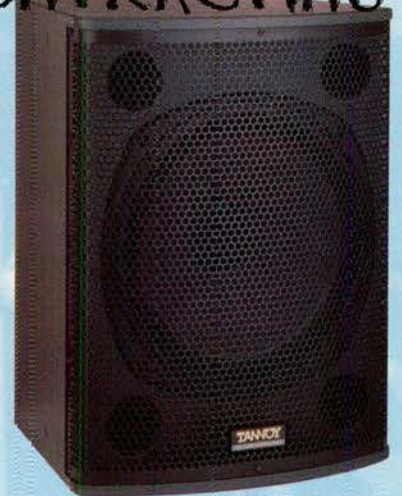
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Dual concentric point source 5" 60° speaker



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8" dual concentric drive unit, 60°, 260w programme



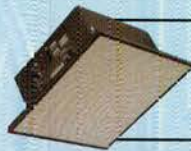
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Compact cabinet, 60° source, 500w programme



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Uses standard air conditioning vent cover as a speaker grille! 10" bass driver, 110w amp.

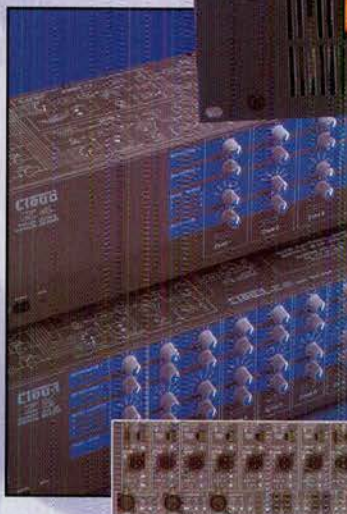
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## More info on the Multi-track MD...



The Yamaha Multitrack MD desks require the use of MD Data discs. While these discs have exactly the same capacity of the audio counterparts, Yamaha sped the data discs for these desks so that the two formats were not confused. If you happen to put an audio MD in these devices, they will only operate in two track mode.

- MD4S (pictured above)  
\$1,695rrp
- MD8S (now in silver)  
\$2,645rrp



Yamaha +61 3 9693 5111

Each block is normalised to the loudest frequency element. The amount of normalisation, called the "Scale Factor" data, is recorded with the block.

Then, the frequency elements within each block are analysed and the number of bits allocated to each block is determined depending on how "important" that block is. This is called the "Word Length" data. Larger Word Length data results in more precise reproduction of each block. Smaller Word Length data results in greater compression.

Exactly what the analysis is that determines the "importance" of each block is not entirely clear, but it is a mathematical formula that formed the original ATRAC, and is credited to Dolby Laboratories.

The final step is quantisation and recording to the MD. The amplitude of each block of audio data is divided into equal parts (see diagram 2).

The number of parts is determined by amount of Word Length data (and therefore the 'importance' of the block), and the width of each part is determined by Scale Factor data. Each frequency element is then averaged to the nearest increment of the quantisation steps, and that data is recorded to the Mini Disc (also on diagram 2).

Subsequent ATRAC versions 3, 3.5, 4 and 4.5 all increased the bit resolution of the format from 16bit to 24bit as well as modifying the compression algorithm. With each step came an increase in audio quality.

The latest version is called ATRAC DSP type-R, and removes the version numbers to avoid confusion with the ones developed by Sharp. According to a Sony white paper, "ATRAC DSP type-R can double the capability of data processing as compared with version 4.5."

This has allowed Sony to a new encoding step just prior to the data being written to disc. This step further improves the quality of the audio, and is called "Intelligent Bit Reallocation". What happens is the blocks of data are monitored, and when it finds an important one that would be more accurately reproduced if a different quantisation amount was applied, it makes the change and replaces the block.

## Long Play MiniDisc

Sony have recently started to promote a new feature for MiniDisc, designed to attack the

explosion in consumer use of MP3. The long play feature uses additional compression to double or quadruple the record time for stereo audio.

Just to confuse everyone they have called this compression ATRAC3. However, this has nothing to do with ATRAC version 3. ATRAC3 applies the compression method used on normal MDs on a *more intense scale*. The advantage it has over MP3 (which applies the same compression over the whole piece of audio) is that ATRAC3's compression is adaptive, and increases or decreases compression depending on the 'importance' of that block of audio.

This compression is intended to be used for any application that you can currently use MP3 for, as well as in phones and other portable products.

## Multi-track MiniDisc

Yamaha has, for a while, had a number of four track and eight track MiniDisc recorders that also incorporate a mixing console. These units are aimed specifically at the small home studio market, giving a VERY cheap recording alternative to budding musicians. The MD4S and MD8S both use ATRAC compressions in exactly the same way as standard MD devices. However, they do have limited track time (18min/8track, 36min/4track) and you have to use the data version of the MD disc.

## The Future of MiniDisc

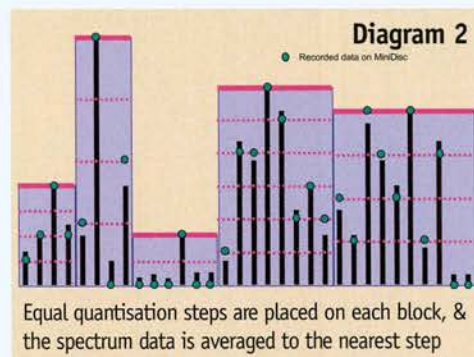
Many of you have probably already decided that "the writing is on the wall" for MiniDisc. It will surprise no one if the format is only rarely used in five years time. Many manufacturers,

including Sony themselves, are already gearing up for making the simm card option the ultimate in transportable media. Some are predicting that the ATRAC compression format may outlast its intended media if it gets incorporated into the simm card world.

However, for the time being there

are plenty of places that find the MD format comfortable and easy to use. Until MP3, and DVD-A/SACD find their long term places in the market, MD will survive – and it may yet find a permanent 'niche market' home.

*Special thanks to Sony for providing the raw information and the diagrams used in this article.*



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Individual 18-inch cabinets facilitate transport and set-up

The FUSION 1800SA/1800S is a high output, active subwoofer system featuring high precision 18-inch transducers combined with application specific amplifier technology. The system is composed of two subwoofers cabinets, the 1800SA which contains a single 18-inch transducer and the active electronics, and the 1800S is a single 18-inch woofer cabinet functioning as a slave. The transducers used in the FUSION 1800SA/1800S system feature 4-inch, inside/outside wound voice coils that offer extreme power handling capabilities. Magnetic assemblies feature advancements in coil venting and structural cooling that provide lower temperature rise and substantially improved power characteristics. The FUSION 1800SA amplifier module uses two high-efficiency, high-current, CLASS G technology amplifiers to produce 2500 watts rms of power.

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### FUSSION 3000 ACTIVE THREE-WAY SYSTEM

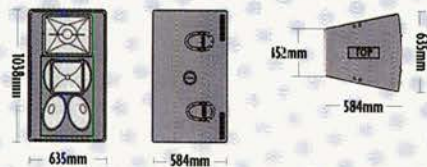
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The FUSION 3000 active speaker system features high-precision transducers combined with amplifier technology that generates extreme output levels with incredibly low distortion. A special, low inductance, double voice coil 8-inch, horn loaded (30 x 70 degrees) midrange transducer delivers the lowest possible distortion even at full power. Frequencies above 2500Hz are reproduced by a 3-inch titanium diaphragm compression driver mounted to a 80 x 70 degree horn with a 1.4-inch exit throat. The FUSION 3000 delivers deep quick bass with four 12-inch high-output woofers. The system processor provides electronic active crossover phase alignment, time correction, equalization and complete amplifier and component protection.

#### FUSSION 1800



#### FUSSION 3000



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# (SMALL) SPEAKER SYSTEMS

We detail what's available in the small speaker market - defined as with one bass driver (if 12" or over) and 500 watts or under. The odd slightly larger system may have snuck in, but you get the idea. This report is split into three sections: UNPOWERED, POWERED and STAGE MONITORS. We asked the distributors to give us a few 'representative' models - they usually offer MANY more models and variations. This is a VERY broad market!

## JARGON EXPLAINED

Before amplifiers started to appear in the back of loudspeaker cabinets, we called a speaker that needed an external crossover 'Active'. Anything with an internal crossover was, and is, referred to as 'Passive'. Now the self amplified box is sometimes erroneously referred to as 'Active', when it should really be called 'Powered'.

If you're wondering about crossovers, then this is the circuitry which splits full range audio into high and low frequencies, to feed the transducers: the woofer (speaker) or bass driver (low) and tweeter or horn with compression driver (high).



DAS PF-115



DAS DS-12

## UNPOWERED

This is the traditional loudspeaker cabinet, WITHOUT an internal amplifier.

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### ACOUSTIC TECHNOLOGIES

Australian manufacturer. +61 7 3376-4122

### CELESTION

UK Brand, now distributed by Network Entertainment Technology. 1 800 645-081.

### DAS

Spanish manufacturer, imported and distributed by Magna Systems for some years. Call +61 2 9417-1111.

**DAS PF-115 \$1,100**  
15" and horn, 100 x 80 degrees coverage, 600 watts program power. 131dB SMP at full power. The Pf Series comprises a line of compact systems designed for beginning musicians and mobile DJ's. The cabinet material used for the Pf cabinets called Complex Aggregate Board (CAB). Lightweight and rigid, it eliminates unwanted vibrations that cause sound coloration. The

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**DAS DS-12 \$1013**

12" and horn, passive. 300 watts, 129dB SPL. Dynamics Series unique design permits tripod mounting and attachment to walls or ceilings using optional rigging hardware that facilitates permanent installation. The use of structural polypropylene in tandem with comprehensive wall reinforcement provides for an enclosure that is not only durable, but exhibits superior acoustic properties for sound that is natural and transparent.

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### EAW.

A leading concert system manufacturer in USA.

EAW is distributed by Production Audio Services, +61 3 9415-1585.

**KF300e RRP \$8,595.00**

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FINE PRINT: All the words, specs and prices were supplied by the Australian distributors of these products. So, errors may arise which at time of printing (May 25th) are unspotted. Prices may rise. Where no model info is given, it's cause we didn't get it.



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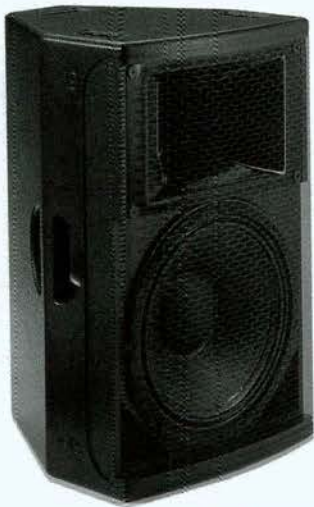
For more information about the revamped ASe Series, visit us at [www.eaw.com](http://www.eaw.com). In addition to detailed product descriptions about this already successful family of loudspeakers, you will also find downloadable datasheets. Or, call 508-234-6158 and request an ASe lit pack.

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EAW JF260z RRP \$7,195.00  
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FR129z RRP \$2,250.00  
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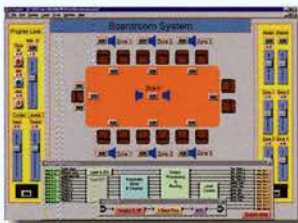
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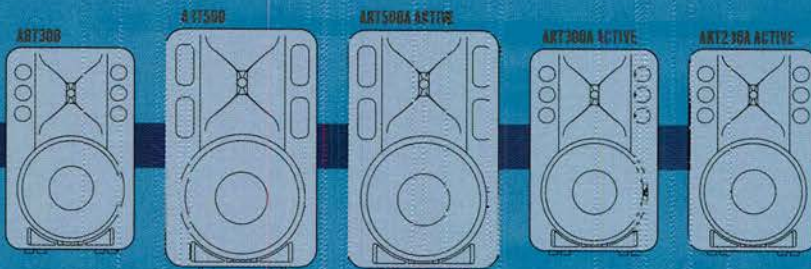


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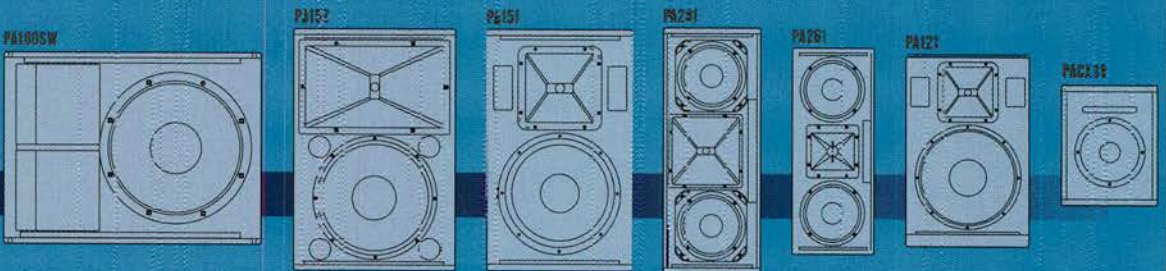
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Sx500+ two-way 15-inch 400watt full-range system. DL15SX 15-inch woofer. Asymmetric 75° x 60° constant-directivity high-frequency horn with DH2T 2 compression driver aims down 10° and helps direct sound at the audience when vertically stand mounted. Horn loading of the woofer controls the coverage pattern down to nearly 500Hz for higher vocal intelligibility and musical clarity. Biampable. Suspension points accommodate optional Mb700 set of three forged eyebolts. Mb600 horizontal array kit available for side-by-side arraying of two systems. RRP\$1899.

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**JBL. Market leading US brand, part of Harman Audio Group. Distributed by Jands, +61 2 9582-0909.**

MP215 15 2 Way Loudspeaker  
M Pro is a new portable reinforcement series from JBL split into two distinct sections, the MP2xx and the MP4xx Series. The MP215 is the first of the MP2xx speakers, and features a 15 2 way design with a large format 70 x 70 degree wide dispersion horn, 250 watts of power handling and JBL's SonicGuard protection circuit for the compression driver. The MP215 is finished in a durable carpet finish and comes with an integral pole mount. \$1295 including GST.

MP410 10 2 Way Loudspeaker  
The MP410 is the first of the MP4xx speakers, and features a 10 2 way design with a large format 70 x 70 degree wide dispersion horn, 300 watts of power handling and JBL's SonicGuard protection circuitry. With a

usable response to 70Hz, it can be used by itself or augmented with a subwoofer such as the MP418S. The MP410 is finished in JBL's patented DuraFlex finish for toughness and speaker longevity. \$1695 including GST

MP225s Dual 15 Subwoofer

The MP255S is bandpass dual 15 subwoofer designed to complement the MP2xx Series speakers. Being a bandpass design, no crossover is required, and depending on your existing amplifier, can even be powered from your existing system. The MP255S is finished in a durable carpet finish, and comes supplied with castors for easy of mobility. \$2295 including GST

SRX 4722X/F.

The SR4722X 12" two-way compact trapezoidal speaker featuring passive / bi-amp powering options, 600 watts power capacity and 85 x 85 degree dispersion. Finished in JBL's Duraflex coating toughness and speaker longevity. Available with fly tracks top and bottom for quick rigging. from \$3395 including GSTwoofer.

**KLIPPSCH. US brand, now distributed by Network Entertainment Technology. 1 800 645-081.**

**MACKIE:**

**USA company, who now own RCF in Italy. Distributed by Australian Audio Supplies, +61 2 4388-4666.**

Mackie C300 \$1295.

300-Watt Passive Speaker System

The C300 is a portable 2-way PA speaker designed to compliment Mackie PPM Powered Mixer Series. 1.75-inch high frequency compression driver & 12-inch long-throw low frequency transducer. 300-watt power handling.

Mackie S500

500-Watt Passive Speaker System

The S500 is a rugged 2-way PA speaker designed to compliment Mackie PPM Powered Mixer Series. Features include; wide dispersion, ultra low distortion HF; 127dB peak output; RCF precision titanium compression driver with 3-slot, optimised geometry phase plug and independent active electronic HF protection circuitry & separate breaker protection for woofer. 15-inch woofer with high temperature inside/outside coil technology. 500 watt peak power RRP \$1695

ART 300 12" High Output Passive

Light weight, yet powerful professional passive design with quality RCF woofer, modified constant directivity horn with RCF compression drivers and LICC crossovers. 80° x 75° constant-directivity horn with 1" exit compression driver. 12" high-gauss woofer.



Mackie S500



JBL MP 215 and 225 sub



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These days the actual wattage (watts) and the quoted frequency response are somewhat difficult to ascertain. Example: watts RMS, or watts PEAK or watts PROGRAMME POWER are all expressed selectively. A better indication is peak SPL (sound pressure level) but even so, this can be overstated or expressed at differing distortion levels.

Likewise frequency response, is often quoted simply as a range - say "60Hz to 15kHz". Problem is, sometimes the variation factor may be left off the spec, eg: the box MAY well produce 60Hz, but at -6dB compared to higher frequencies. Which means MUCH less 60Hz than you may prefer or need.

*Rely on someone who knows, and read those specs carefully.*

Compact, semi-trapezoidal lightweight polypropylene enclosure. RRP \$1295

**MACKIE ART 500**

15" High Output Passive. Light weight, yet powerful professional passive design with quality 15" RCF woofer, modified constant directivity horn with RCF compression drivers and LICC crossovers. 80° x 60° constant-directivity horn with 2" exit compression driver. Compact, semi-trapezoidal polypropylene enclosure. RRP \$2295

**MARTIN AUDIO.**

Long established market leading UK brand, distributed by TAG. +61 2 9810-5300.

W0.5. Retail Price: \$1,695.00

8" 2-way trapezoidal PA speaker with 1" Compression Driver/CD Horn. 117dB peak SPL. 70Hz-18kHz. Pole Mount and OmniMount Fittings.

BlackLine F12. Retail Price: \$2,095.00

Full-range 12" 2-Way Passive Speaker: Dual Use FOH/Foldback Speaker with Rotatable CD Horn, Tripod Mount, 65Hz-18kHz, 300w

AES Power Handling, 80° x50° Dispersion, 97dB Sensitivity, 126dB Peak, Speakon Inputs, 10xM8 Hanging Inserts, Laminate Birch Ply, 571 x 400 x 364 (HxWxD). 21Kg.

BlackLine F15. Retail Price: \$2,795.00

Full-range 15" 2-Way Passive Speaker: Dual Use FOH/Foldback Speaker, Rotatable CD Horn, Tripot Mount, 55Hz-18kHz, 400w AES Power Handling, 80° x50° Dispersion, 99dB Sensitivity, 129dB Peak, Speakon Inputs, 12xM8 Hanging Inserts, Laminate Birch Ply, 690x470x443 (HxWxD). 2.5Kg. BLACK..

W3. Retail Price: \$5,995.00

15" 3-Way Active Trapezoidal Cabinet: 15" Bass, 6.5" Mid and 1" HF; Mid and HF with Passive Crossover, 55Hz-18kHz, 131dB Peak SPL, 65° x 40° Dispersion, Pole Mount and 12 x M8 Flying Inserts, 32Kg.

**NEXO. Niche manufacturer of high quality systems. Distributed by Group Technologies, +61 3 9381-4911.**

Nexo PS8 / PS10 FB or FOH

PS8 + LS 400 sub bass. Max output 127-131dB full bandwidth. Remarkable performance from such small lightweight boxes.

# NF-1 Series

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Here are nearfield reference monitors meticulously designed to be completely neutral, to offer the widest frequency range, to minimise listening fatigue and to allow you to accurately pinpoint and analyse all aspects of your creative output.

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**SPECIFICATIONS**

	NF-1	NF-1A
Speaker Units		
HF Unit	20mm Soft Dome UFLC diaphragm tweeter	20mm Soft Dome UFLC diaphragm tweeter
LF Unit	160mm HP diaphragm woofer	160mm HP diaphragm woofer
Frequency Response	50Hz - 40kHz	50Hz - 40kHz
Sound Pressure Level	89dB/W (1m)	105dB/W (Max/Rated input)
Power Handling	120 watts (program)/60 watts (RMS)	120 watts (program)/60 watts (RMS)
Size	240mm x 340mm x 274mm	240mm x 340mm x 320mm
Output		
(Low Frequencies)		60W (typical)
(High Frequencies)		60W (typical)



# SPIRIT M SERIES

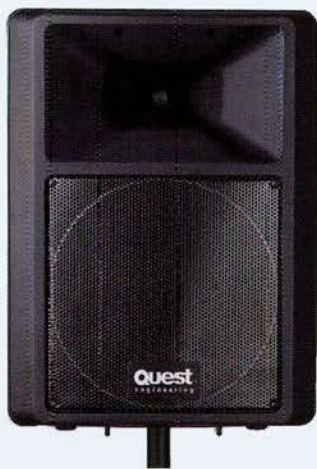


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*Small Speaker Systems*



Quest QS350



Turbo TCS35



Turbo Impact 50

Nexo designed, low magnetic emission Neodymium drivers and constant directivity asymmetric horn (Horizontal 50 to 100 deg and Vertical 55 deg), gives long throw performance while retaining smooth in fill coverage. Boxes weigh only 7.5 kg and can be rigged with a variety of mounting systems. RRP \$1,995.00

**Nexo PS10 Multi Purpose System**  
The PS10 dispersion, architecture and weight-balance are designed for optimum arrayability. Asymmetrical dispersion horn extends versatility to problem solve difficult acoustic environments. Can be safely be driven by amplifiers over 500 watts yet functions as ultra compact FOH or stage monitor. High power LS 500 sub max output 134 DB yet weighs only 33 kg. RRP \$3,295.00

**PEAK AUDIO.**  
Distributed by CMI, +61 3 9315-2244.

**PHONIC.** Long established, cost effective range.  
Distributed by CMC, +61 2 9905 2511 .

**QUEST ENGINEERING.** Distributed by Group Technologies, +61 3 9381-4911.

**QS350**  
Made from high-density crack resistant polyethylene, the QS350 is a high performance classic PA or Music application enclosure. High-powered long throw bass driver delivers punchy bass with excellent low mid control. Sophisticated passive x-over-protection circuitry that results in better phase response and top end protection. RRP \$785.00

**QS450**  
The QS450 is the 15i version of the 350 with the addition of more power handling and fuller bass response. All boxes contain 10mm flying points and fit most available hardware. RRP \$895.00

**Renkus Heinz.** Prominent American brand,

recently taken on by Audio Sales & Marketing. +61 2 9585 1011

**Turbosound.** Market leading UK manufacturer. Distributed by Audio Telex Communications, +61 2 9647-1411.

**Impact 50**  
The smallest enclosure in the Turbosound range is also the most popular ! The reasons are simple, it's a big clean sound from a very compact enclosure. The Turbosound Impact 50 is a passive 2-way enclosure featuring a 5" LF driver and a .5" tweeter. Normally this type of enclosure is limited to light background music but the Turbosound Impact 50 is used in pubs, theme parks and even front fill for jazz gigs. This is one of the best small PA boxes Turbo has ever designed (and that's saying something!). Styled in high density polyethylene, the Impact 50 is available in a huge array of colours and incorporates it's own very neat bracket. The Impact 50 is available in 16 ohm or 100v versions. Retail \$480.00 inc GST

**Impact 110**  
Mainly used to compliment the ever popular Turbosound Impact 50, the Impact 110 sub woofer is a very punchy sub woofer. The size of the Impact 110 is very deceptive. A small enclosure featuring a single dual-coil 10" driver amazes all with it's huge 125dB SPL and its ability to reproduce down to 50Hz with ease. The Impact 110 features left and right inputs and passive crossovers for loop out connections to your Turbosound Impact 50 or Impact 80 speakers. Retail \$1749 inc GST.

**TCS35**  
The newest addition to the Turbosound TCS Contractor Series is fast gaining a reputation as the best performer in it's class. Featuring a 8" driver and 1" tweeter, the Turbosound TCS35 has recently outperformed some competitor's 12 and a horn enclosures. A smooth hi-fi style response from a elegantly

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3002	1500	900	550	\$3,795	\$3,395!
3402	1700	1100	700	\$4,395	\$3,895!



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designed, birch plywood enclosure, with a huge array of mounting options the TCS35 is excellent for nightclubs, pubs, conference centres and more. Max SPL 121dB. Retail \$2299.00

TCS56

The biggest seller in the Turbosound TCS Contractor Series, the TCS56 features a 12" LF driver and 1" HF compression driver. Built from birch plywood and attractively styled, the TCS 56 offers installers the convenience of both speakon and terminal strip inputs. The TCS56 has recently been installed in a variety of applications from churches,

auditoriums and even nightclubs where it's 131dB peak SPL proves it's worth. The TCS56 has a dispersion of 60 x 40 degrees with another version (TCS59) offering 90 x 60 degree dispersion. Retail inc GST \$3699

**Yamaha. Largest pro audio manufacturer in Japan. Distributed by Yamaha Music Australia, +61 3 9693-5111.**

S115IV

The use of a cast aluminium basket 15" Woofer and 2" Titanium compression driver ensure detailed musicality as well as high power handling. Trapezoidal enclosure ensures easy array alignment and transport-



Turbo TCS56



Yamaha S115IV

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More Jargon!

**DISPERSION:** The dispersion figures quoted affect the high frequencies only, and are usually at a 'given' frequency, say 2kHz. It's VERY hard to control low frequency dispersion, although some manufacturers, notably Meyer, have managed to engineer this in recent times.

**THE CABINET:** Some of these cabinets are noted as being of 'Birch Ply' or even just 'Ply' construction. It's accepted that Birch Ply is the superior of the sheet finishes, and particle board the worst. Because it is heavy and can become waterlogged. Many are built from MDF sheets. Some are plastic. Listen and compare, because: *sound matters!*

*Small Speaker Systems*



ARX SPL 8

ability. As with all Club IV series speakers it features a rugged carpet finish, metal corner protection and steel handles as well as the pole mount socket. Also available as SM15IV floor monitor version. 500Watts program/1000Watts peak power handling. \$1295 rrp each

**Yamaha S15E.** With a 15" bass driver and 90x40 degree compression driver horn, the S15E delivers a level of performance well above it's price point. As with all SE Series speakers, it features a heavy duty carpet finish, metal corner protection, a steel reinforced strap handle and pole mounting socket. 250Watts program/500 Watts peak power handling. \$995 each

**S112IV.** With features such as 12" woofer using a flatwound copper voice coil and Curvalinear Cone for increased sensitivity and stiffness, and a 2" Titanium compression driver that offers the largest magnet structure in its class, the ClubIV 12" is a perfect speaker for those in need of musicality and power in a smaller enclosure. As with all Club IV series speakers it features a rugged carpet finish, metal corner protection and steel handles as well as the pole mount socket. 300 Watts program/ 600Watts peak power handling. \$1095 rrp each

**S12E.** With a 12" woofer and 1" compression driver, the S12E has a level of performance above its price competitors. As with all SE Series speakers, it features a heavy duty carpet finish, metal corner protection, a steel reinforced strap handle and pole mounting socket. 250Watts program/500 Watts peak power handling. \$795 each

**ZECK.** German brand, from Audio Sales & Marketing. +61 2 9585 1011



JBL EON 15 G2

**POWERED**

These feature an AMPLIFIER inbuilt into the cabinet. So, you run a signal cable and a power lead to each speaker box.

**ARX.** Australian made. ARX Systems Pty Ltd +61 3 9555 7859

Model: SPL 12. \$4065.

Compact self powered bi-amped loudspeaker system with onboard amplifiers, 24dB crossover and ISC system protection. Rugged all ply trapezoidal cabinet with rigging points. 12" (305mm) LF driver, 60mm diaphragm Ferro-cooled HF driver. Just connect a signal and AC power

Model: SPL 10 \$3743.

Compact self powered loudspeaker system

with integrated amplifier, 24dB crossover and ISC system protection. Rugged all ply trapezoidal cabinet with rigging points. Co-axial 10" (255mm) LF driver, 50mm diaphragm Ferro-cooled HF driver. Ultra user-friendly - just connect a signal and AC power

Model: SPL 8 \$1476.

Details: New ultra-compact self powered loudspeaker system with integrated amplifier, 24dB crossover and ISC system protection. Trapezoidal cabinet, steel mesh grille. Co-axial 8" (205mm) LF driver, Ferro-cooled HF driver on integral waveguide. Ultra user-friendly - just connect a signal and AC power.

**DAS**

**Spanish manufacturer, imported and distributed by Magna Systems for some years. Call +61 2 9417-1111.**

**DAS DS-15A \$1,700 HOT SELLER!**

15" and horn Powered version from Dynamics Series range. 150w low, and 50w high freq. amps inbuilt. Overload LED, signal present LED, mic, line and master level controls, speaker stand socket and hanging points supplied. Can be used on side as floor monitor. 24 dB / octave Linkwitz-Riley Crossover inbuilt.

**DAS ST-8A \$1464.**

Compact self powered speaker system, loaded with 8" bass and 1" h/f transducer, 150w low and 50w high amplifiers, internal crossover. 120dB SPL, 100 degrees dispersion on both horizontal and vertical plains. Balanced xlr in and loop thru, plus 6.5mm jack.

**EAW. Leading US concert system manufacturer. EAW is distributed by Production Audio Services, +61 3 9415-1585.**

EP2 RRP\$12,740.

Compact, self-powered, 2-way, Full Range System. 1.4-in exit/75mm voice coil Neodymium compression driver on wave guide plate. LF: 1 x 15-in. Vented Close Coupled Power Module provides ideal processing and powering.

**JBL. Market leading US brand, part of Harman Audio Group. Distributed by Jands, +61 2 9582**  
EON15 G2 - 15 2 Way Powered Speaker **HOT SELLER!!!**

2001 sees the release of the Generation 2 EON speakers (known as G2s) with numerous improvements over the original models. The EON15 G2 is a bi-amplified 2-Way loudspeaker featuring double the power over the original EON models, with 300 watts for the LF and 100 watts for the HF driver. Also expanded are the input facilities now featuring 1 switchable mic / line and two discrete line inputs, with a global 2 way



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*Small Speaker Systems*



Mackie SRM 450 (above) and new stablemate, the formerly RCF and now Mackie Industrial ART 300A below.



Meyer UPA-1P

system EQ. Improvements have also been made on the cosmetics a new toughened steel grille and a new copolymer black scratch resistant enclosure material. Accessories available include hanging and flying brackets, and padded bags for portable applications. \$2495 including GST.

**EON10 G2 - 10 2 Way Powered Speaker**  
New 10 EON from JBL Professional following on with the EON Generation 2 feature set. Bi-amplified 2-Way with 125 watts for HF and 50 watts for HF, 1 mic/line and 2 line inputs with global EQ, the EON10 G2 is suited for speech and music reinforcement for small venues, and can be augmented with the EON Sub G2 for larger applications. \$1895 including GST

**EON Sub G2 - 15 Powered Subwoofer**  
The EON Sub G2 is a compact single 15 powered subwoofer ideal for augmenting the bass reinforcement of smaller full range speakers. With 250 watts of power, phase reverse and both line level and speaker level inputs, the EON Sub G2 is a versatile performer for applications requiring solid low frequency performance. \$2495 including GST.

**MP418SP - 18 Powered Subwoofer**  
The MP418SP is an integrated 600W JBL pro woofer with a Crown CE2000 2 channel amplifier with 660 watts per channel. One channel is dedicated to powering the internal woofer, while the other amp channel can be configured to drive either a second (unpowered) sub, or a full range satellite speaker such as the MP410. An unpowered version (MP418S) is also available. \$4995 including GST (\$2495 unpowered)

**MACKIE: USA company, who now own RCF in Italy. Distributed by Australian Audio Supplies, +61 2 4388-4666.**

**Mackie SRM450 Active 2-Way Speaker System.** The SRM450 cranks! It has tight bass to below 55Hz and detailed articulate high frequencies out to 20,000Hz. Features include; ultra wide audience coverage; multi-cell high-dispersion horn aperture; damped titanium HF compression driver; FR Series power built-in 400 watts RMS actual power; built-in electronic equalisation, phase alignment, time correction and protection circuitry. RRP \$2295

**Mackie SRS1500 Active 600-Watt Subwoofer System.** While under two feet high, the SRS1500 can crank out up to 127dB of tight, floor-shaking, chest-thumping, hair-parting bass, all the way down to 40Hz. 127dB SPL, 600 watts of FR Series amplification, 15-inch cast frame RCF LF transducer and built-in electronic stereo/mono high-pass crossover network. RRP \$2495

**Mackie Industrial ART 200A**  
12" Active Speaker, light weight, yet powerful professional active design featuring matched bi-amplifiers with tuned signal processing and quality RCF woofers. Features include: 90° x 70° constant-directivity horn with 1" exit compression driver; internal bi-amplifier: 120W LF, 40W HF, and driver-optimized electronic crossover. RRP \$1895

**ART 300A**  
12" High Output Active. Features include: 90° x 70° constant-directivity horn with 1" exit compression driver; Internal bi-amplifier: 300W LF, 60W HF, and driver-optimized electronic crossover. RRP \$2295

**ART 500A**  
15" High Output Active. Light weight, yet powerful professional active design featuring matched bi-amplifiers with tuned signal processing and quality RCF woofers. Features include: 80° x 60° constant-directivity horn with 2" exit titanium compression driver. Internal bi-amplifier: 400W LF, 100W HF, and driver-optimized electronic crossover. RRP \$3495

**MEYER Sound. Market leader in upmarket powered boxes. Australian offshoot is Meyer Sound Australia, +61 7 3252-4493.**

**UPA-1P:** response +/- 4 dB 65 Hz - 16 kHz. -6 dB @ 60 Hz & 20 kHz. 700 Watts (350 Watts/Channel). LF 12" cone driver; HF: 1.4" throat, 3" diaphragm compression driver. RRP \$6,700

**UPA-2P:** response +/- 4 dB 65 Hz - 16 kHz. -6 dB @ 60 Hz & 20 kHz. Amplifier power 700 Watts (350 Watts/Channel). LF: 12" cone driver; HF 1.4" Throat, 3" diaphragm compression driver. \$6,700.

**UPM-1P:** Response +/- 4 dB 60 Hz - 16 kHz. -6 dB @ 58 Hz & 18 kHz. Amplifier power 350 watts (2 Channels; 225 & 125 Watts). (2) 5" LF cone drivers, 1 Titanium dome tweeter. \$3,150

**Peavey Architectural Acoustics. Division of Peavey Corporation. Distributed by Audio Telex Communications, +61 2 9647-1411.**

**Impulse 200P**  
A bi-amplified powered speaker enclosure which delivers a massive 200W to the woofer and 125W to the horn. This compact yet powerful enclosure includes a processed bass signal for increased bass punch, mixed microphone & line balanced transformer-less inputs, combination line - level connectors (dual 1/4" TRS & M/F XLR), and a separate microphone input jack (female XLR) with phantom power and a volume control. It is featured in a huge number of hire systems around Australia and is probably best known



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Yamaha MS400 powered

for its intelligibility. Retail inc GST \$2229.

### Impulse 500P

A bi-amped molded enclosure, providing 440 watts to the woofer (15" Black Widow) and 300 watts to a compression driver (22XT). Inputs include one male XLR, one combo female XLR and a RTS phone jack and separate switchable female XLR microphone input. The IMP500P also features a molded stand adapter, fly points top and bottom, level control and three molded handles. Retail \$2899.00

### SMART SPEAKERS.

From CMI, call +61 3 9315-2244

The SMART Active Series provide a wide choice of speakers suitable for the discerning musician. The SMART series incorporate dynamic amplifiers with MOSFET technology: this has the advantage of high reliability, high power output, reduced weight. Light weight and powerful.

SMART 15A	\$1349
SMART 153A	\$1550
SMART 12A	\$1069
SMART 15SA	\$1369

**YAMAHA.** Distributed by Yamaha Music Australia, +61 3 9693-5111.

### MS400

Yamaha's newest powered speaker. 15" bass driver mated to a 300W amplifier and 2" compression driver with a 100W amp. Multiple Mic/Line inputs and parallel line output and equalization functions ensure that system connection is simple. Mounting points allow for wall, ceiling and batton mounting, as well as the traditional pole socket. \$1995 rrp each.

**ZECK.** German brand, from Audio Sales & Marketing. +61 2 9585 1011.

## STAGE MONITORS

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**ARX.** Australian made. ARX Systems Pty Ltd +61 3 9555 7859

### CELESTION

UK Brand, now distributed by Network Entertainment Technology. 1 800 645-081.

**DAS.** Spanish manufacturer, imported and distributed by Magna Systems for some years. Call +61 2 9417-1111.

### dB Technologies.

Distributed by CMI, +61 3 9315-2244.

**EAW.** Leading US concert system manufacturer. EAW is distributed by Production Audio Services, +61 3 9415-1585.

SM84 RRP\$9,280.00

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1.4 in/75mm Exit Neodymium HF (40° x 90° coverage pattern). Angles up 53°. Suits Concert Tours, Corporate Events, Major Televised Events, Cathedrals and Live Music Clubs.

SM15 RRP\$7,445.00

High output, two-way stage-monitor system. 1 x 15-in LF, Vented horn-loaded 1.4-in/75mm Exit Neodymium HF (40° x 60° coverage pattern). Angles up 53°. Applications include: Concert Tours, Corporate Events, Major Televised Events, Cathedrals and Live Music Clubs.

SM12 RRP\$6,895.00

High output, two-way stage-monitor system. 1 x 12-in LF, Vented

1.4 in/75mm Exit Neodymium HF (40° x 60° coverage pattern). Angles up 53°. Applications include: Concert Tours, Corporate Events, Major Televised Events, Cathedrals and Live Music Clubs.

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EAW SM200

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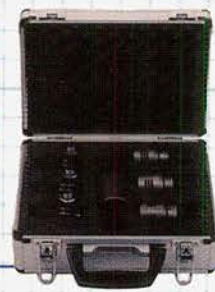
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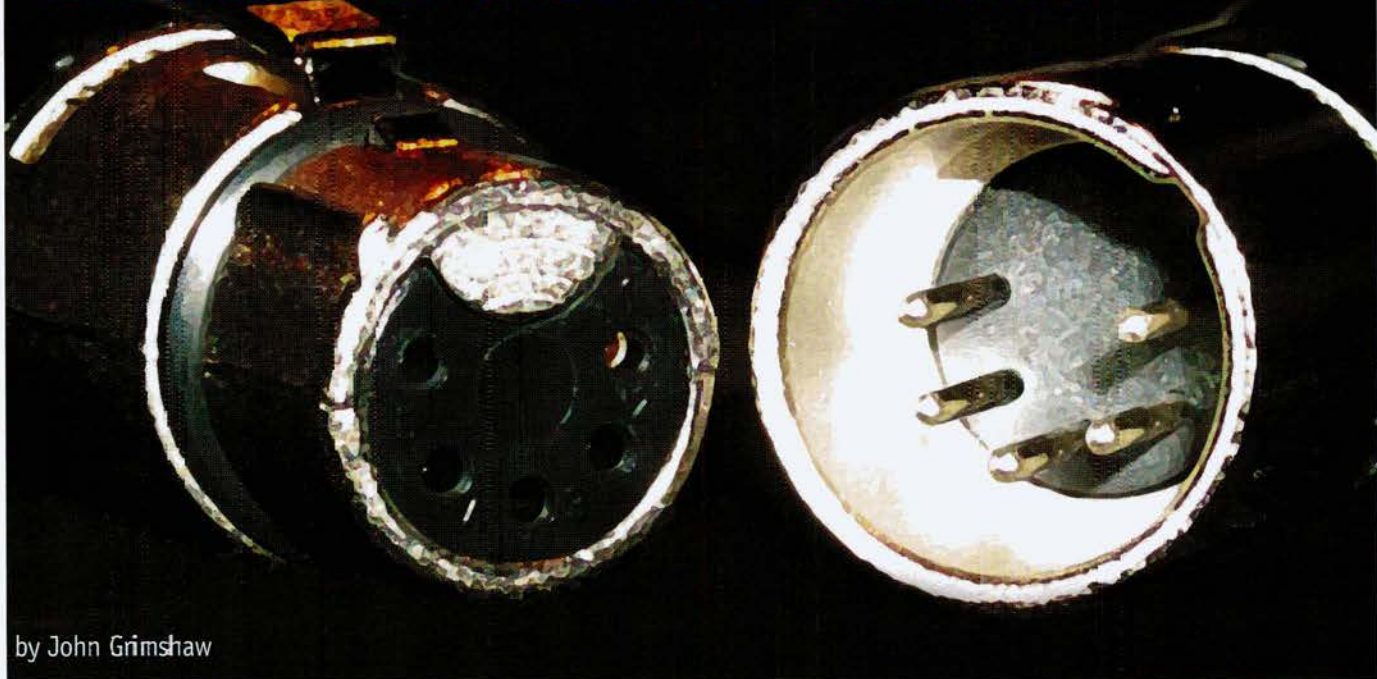
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## Evolution of the DMX Standard



by John Grimshaw

Last year, we reported on the first release of the draft DMX standard to replace the simple DMX512/1990 version. It was optimistically given the nickname DMX512/2000. Now we are well into 2001, and the US standards organisations have just completed another call for submissions of the newly revised draft.

**DMX** as a lighting control standard was adopted internationally after its introduction in 1986 by USITT (United States Institute for Theatre Technology). The DMX512/1990 version made some minor revisions, and has been used in increasingly more complex situations ever since.

In 1998, USITT decided that it was time to update the standard. This came as a result of increased use of the data standard for moving lights and colour scrollers, and various manufacturers using the little used pins 4&5 on the DMX XLR for high current power. USITT passed control for updating the standard to ESTA (Entertainment Services and Technology Association). ESTA's Technical Standards Committee (TSC), who are accredited by the American National Standards Institute (ANSI), went to work on the standard, and after considerable consultation, released the first public draft of the revised standard early in 2000.

The issues covered by the standard had grown significantly, with the original seven page standard being usurped by a 70+ page draft. (this draft was reviewed by myself in the Feb2000 issue of Connections) Public comment and re-drafting has led to the newer, streamlined 50+ page version.

According to Karl Ruling (Technical Standards Manager at ESTA), somewhere around 150 comments were submitted during the public review that recently ended in April. As a result, "the implications for manufacturers of DMX

equipment are that there will likely be a further delay to the completion of the standard."

While this process of drafting and revision is underway, USITT has taken steps to have the standard (when complete) considered for adoption by the international standards body, IEC. So in 1999, a proposal to make DMX512 an international standard was approved by IEC Technical Committee 34, with the proposed standard called "Entertainment Technology - USITT DMX512-A (IEC 62136)".

When the revision process is complete, the finished draft will be sent to the IEC. They follow a complicated system of processing an application before giving official recognition. However, USITT are confident that the process will ultimately take 6-12 months to rubber stamp the proposal - more or less as submitted (ref: [www.usitt.org/DMX/IEC.DMX.htm](http://www.usitt.org/DMX/IEC.DMX.htm))

With the moves towards an international standard already underway, it is expected that manufacturers internationally will move quite quickly once ESTA complete their work. Every manufacturer will be affected, as they will all need to make adjustments to at least some part of their hardware, software, labelling or documentation to claim compliance to the standard.

### The Latest Draft

If you were to ask how much impact this new standard was going to have on the industry, the short answer is 'not much', but this does depend on a few factors. While the basic form of

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This power supply for Colourset Scrollers uses five pin XLRs for sending power and data to scrollers. Under the new standard, this device could not claim to be compliant with the standard.

lighting data as it currently stands will remain unchanged, there is so much scope for manufacturers to make their own version of DMX for various purposes, including feedback from devices, you could put money on the fact that systems from different manufacturers will not integrate with each other.

Connections asked Nicolas Moreau of ENTTEC Pty Ltd (a local manufacturer of DMX devices) for his opinion on the latest draft, and he said much the same thing.

"This new standard is basically an add-on to the original DMX512 spec released in 1990. Old DMX512 equipment will be compatible with new equipment, and that will not push manufacturers to update their designs. We might see a change later down the track if some functions of the new standard end up being useful and widely adopted. But then again as most of these functions (eg: 2 way communication) are manufacturer dependent, every one will probably want to brew his own DMX." Multiple 'Enhanced DMX' Versions

The draft allows for three systems of 'Enhanced DMX'. The types being discussed now are:

- normal DMX on pins 2&3 and return DMX on 4&5. In this situation, the return DMX signal

can be an entirely new signal generated by one or more devices to return info back to the control position.

- normal DMX on pins 2&3 and bi-directional data on 4&5. The bi-direction data can be used for remote data feedback and control. An example of use could be a remote unit that uses the second line to control and/or update the main desk.
- the DMX on pins 2&3 is slightly modified, allowing limited return data on the main DMX line as well as bi-directional data on 4&5

Each of these will require the 'arrow' labeling to identify the type of DMX. According to the draft, each of these will still allow the current DMX equipment to read the data without any problems. However, mixed types of Enhanced DMX or even same type from different manufacturers are unlikely to be able to work together. Nicolas tells us that this is a potential problem.

"My other concern is the labelling and understanding of the enhanced DMX512 (P33) by riggers - they are the ones who will have to identify the single and double arrows on the back of the console tucked away in a dark spot."

One of the most important aspects to this draft is the provision for devices on a DMX

DMX technology and wall plates in installations will all need to display what type of DMX those outlets are configured for.

DMX testing devices are unlikely to be changed by Enhanced DMX until it becomes clearer how the main lighting manufacturers are going to use it.



## What is in a name?

Karl G. Ruling, the Technical Standards Manager at ESTA made the point to Connections that the working name "DMX512-A" that is currently being used in the industry is not accurate, and could end up confusing some people. The ESTA standard, when it is finalised, will be "E1.11-????", where ???? is the year the standard is finalised.

Certainly, this is not a very descriptive title for those of us used to seeing "DMX512/1990" describing the previous standard. When we suggested to Karl that the industry would probably continue to call the data standard "DMX512-A", Karl firmly planted his tongue in his cheek and replied, "The industry could call the standard "Fred" if it wants, but it will have the designation 'E1.11-some year' because that's the way the ANSI designation convention works.

"I'm sure some people will call it DMX512-A, but this will lead to some confusion when people go to Global Engineering Documents (as an example of one vendor) and type in 'DMX512-A' into the designation field, and come up with nothing. Of course, this might be job security for those who know the secret that 'DMX512-A' is a fragment of the descriptive title and is not the designation. They will be wizards."

Karl went on to tell us that the reason USITT gave the project to ESTA was so that it could make DMX512 an official part of the American National Standard Institute (ANSI). Of course there could be further confusion when people start calling the standard "ANSI DMX" or some variation of this.

Connections suggested to Karl that, to help save confusion, maybe there should be consideration for an "official" shortened version of the title, so that publications like this and user manuals can refer to the standard without being ambiguous (ie: E1.11-2002) or overly verbose as is the current title - "BSR E1.11, Entertainment Technology -USITT DMX512-A Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories". Imagine if we wrote that every time we meant "DMX512-A"!!!

Maybe "ANSI E1.11-????/DMX" could be a good short working title. However, until a new name is adopted, Connections will continue to refer to the old standard as "DMX512/1990" and the new one as "DMX512-A"

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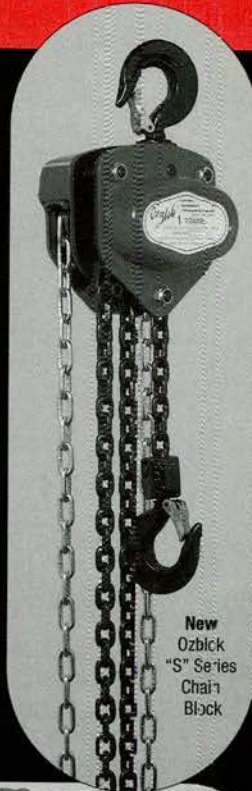
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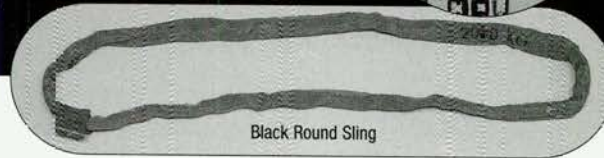
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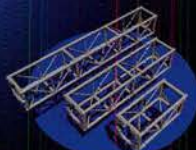
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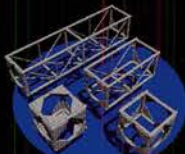
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## DMX Under Review

### Dr G's Point Of View

It is clear to me that 'Enhanced DMX' as it currently stands in the draft is unlikely to survive in the long term unless all manufacturers only have one 'Enhanced' version to choose from, and the use of it is strictly laid out so that any Enhanced DMX device can be used with any other Enhanced DMX device.

The strict 'interoperability' of the previous version of the standard was why it was universally accepted and used. By diluting the standard, users will be condemned to wasting additional time sorting out DMX problems, or specifying equipment from only one manufacturer to ensure perfect interconnection.

While this is clearly to the benefit of the larger equipment manufacturers, it is not in the best interests of the people that have to work in the field.

What I would like to see is the data on pins 4&5 be a bi-directional stream where two things happen:

- 512 channels of return data from remote devices (corresponding to their normal DMX channel) that gives up to 255 pre-defined replies about how that device/channel is working. These replies could be 'circuit overload', 'movement stuck', 'all ok', 'currently resetting', 'moving to position', 'circuit current reduced from expected level', etc. Given time (and lots of input) I'm sure a working group could come up with many generic messages – maybe even the maximum 255. Some kind of patching option would be needed for devices using the same channel, but programming boffins should be able to come up with a solution to this one problem.
- the main DMX source can give one of a number of pre-defined, irregular instructions to channel(s) as required. These instructions could be anything from 'reset', 'ignore main DMX signal', 'power off', 'power on', etc. Again, a working group could sit down and think up the instruction set – and in this case there is no 255 instruction limit, but those instructions should be universal.

On another point, I certainly commend the writers of the standard for strictly defining what types of XLRs can and cannot be used, and the situations where RJ45s can and cannot be used. However, it would have been good of they could have made provision for devices where power and full DMX could be sent on the one cable, and specify that type of connector – maybe the less common 6 or 7pin XLRs?

network to report back to the control position. The draft specifies 'how' this data can be transmitted, but not exactly 'what'. It will be up to manufacturers how they implement this data talkback or feedback. The obvious problem is that manufacturers will all create their own talkback standard. Nicolas also picked up this problem:

"Talkback (alternate start codes), great in concept - at last the dimmers or fixtures will be able to tell the console or a management system that something is wrong, they are over heating or the fixture has reached it's position. But [...] this is manufacturer dependant, I can't see ETC using the same protocol as Strand or High END sharing ideas with Martin!"

#### The Use Of Connectors

The standard clearly specifies what signals can be put on a 5pin XLR, and also states that power (for scrollers etc) cannot be placed on this type of plug. This was done so because the accidental connection of such a device to equipment designed to use pins 4&5 as data would cause catastrophic destruction to the circuits of that device.

The draft says that no other type of XLR can be used to carry DMX. This includes 3pin XLRs – currently used by many manufacturers, as well as 4pin XLRs often used by scrollers to provide data and power in the one cable.

There are special cases where RJ45 connector can be used. The RJ45 is the 8pin version of the modular 'telephone type' plug – now commonly used by Ethernet devices. They can be used in fixed installation situations where they are not

#### The proposed wiring standard for DMX on RJ45:

Pair	Wire#	Color	Function	DMX512 Pin
2	1	white/orange	data 1+	DMX512 Pin 3
	2	orange	data 1-	DMX512 Pin 2
3	3	white/green	data 2+	DMX512 Pin 5
	6	green	data 2-	DMX512 Pin 4
1	4	blue	Not assigned	
	5	white/blue	Not assigned	
4	7	white/brown	Signal Common (0v)	DMX512 Pin 1
	8	brown	Signal Common (0v)	DMX512 Pin 1
Shield		drain		

normally accessible or regularly used. The draft also specifies that RJ45s can be used for patching and data distribution devices, though only in areas with controlled access.

This proposed standard conforms with the wire numbers/colours defined for other standards. It also allows for wires 4 and 7 (used as telephone voltage in another standard) to be used for some DC low voltage requirements.

#### Electrical Characteristics

Another point raised by Nicolas Moreau of ENTTEC Pty Ltd was the "the new version has a better definition of Electrical interface - this will remove ground loops and other similar problems." Nicolas went on the say that, "Unfortunately, probably not to many manufacturers will adopt the new designs due to the per unit cost involved."

What Nicholas is describing is the draft's specifics on earth grounding, proper electrical isolation, specific disallowed receiver 'topologies' (circuits) and electrical protection. These points are considerably more thoroughly explored in this draft compared to the 1990 standard, and have the potential raise the quality standard of compliant DMX devices.



ESTA have recently completed testing of DMX signals on numerous cable types, including Cat5 cable. According to documentation on the ESTA website, the series of tests compared the DMX512 handling characteristics of DMX rated cable (the cable was actually rated for EIA-422, which is the data standard from which DMX was born) to a standard Category 5 unshielded twisted pair (UTP) cable. They also carried out 'radiated emission' tests.

The results of these tests were that the Cat5

cable was as good at transferring data as the specially designed cable. However, the report also recommended that such cable should be installed in metal conduits that were properly grounded – 'free air' installations of Cat5 cable open the possibility of errors due to EMF induced voltage and therefore should be avoided.

The actual results and plot graphs of these tests can be found at:

[www.esta.org/tsp/DMXoverCat5.htm](http://www.esta.org/tsp/DMXoverCat5.htm)

# VIDEO DISTRIBUTION

The criteria for this report was simple - devices and components that help to move or distribute video signals. We broadened the scope of this report slightly to include video distribution systems.

## Altinex DA1907SX



The DA1907SX is a high resolution 1 in 2 out VGA (VGA-UXGA) distribution amplifier designed to simultaneously feed a local monitor and a

distant monitor or projector. It features a minimum bandwidth of 400MHz, 2 buffered outputs, and a power/signal present indicator for easy trouble shooting.

Housed in an ultra compact enclosure with setup instructions printed on the cover, it is ideal for laptop use. Buffered local output does not require the use of termination plugs. All VGA connectors are female to prevent broken pins which male connectors are susceptible of. Supplied with 3ft VGA cable.

- \$557.70 inc GST  
 AXIS Audio Visual Pty Ltd: +61 3 9761 2688

## Altinex DA1706SV

The DA1706SV is 1in 6 out DA designed to allow non-simultaneous connection of a single C-Video or S-Video source to as many as six different display or recording devices. Compatible with PAL, NTSC and Secam, its high bandwidth of 350MHz allows it also to pass high resolution monochrome computer video signals.

The dual purpose of the DA1706SV makes it ideal for rental houses, used for C-Video for some events and S-Video for others. The internal universal power supply ensures safe and reliable operation. The 1-U high, rack enclosure allows it to be mounted in a rack or under the table.

- \$826.10 inc GST  
 AXIS Audio Visual Pty Ltd: +61 3 9761 2688

## Analog Way Smart Booster

Smart Booster is 1 in 3 out combination distribution amplifier combining four different types of video signals, Composite Video, S-Video, Component Video and VGA. Each video input source is buffered and split into 3 outputs. All outputs are amplified and designed for extended cable lengths.

Featuring bandwidth of 300MHz for all inputs it can be used to distribute any high resolution signal, including HDTV. Housed in a 1-RU rack wide enclosure, it represents a space and power saving module as it eliminates multiple boxes. An audio version of this product is also available.

- \$1925.00 inc GST  
 AXIS Audio Visual Pty Ltd: +61 3 9761 2688

## Inline IN3262DS

The IN3262DS is a high res VGA and stereo audio distribution amplifier designed to amplify and split a computer's VGA video and stereo audio signals to two data grade display devices. Featuring 15-Pin HD VGA standard connectors for input and outputs, the IN3262DS connects directly to VGA computer graphics cards and data displays.



A 6' long removable VGA input cable is included with the unit. For applications requiring a longer input cable, an IN8000 Series high resolution VGA extension cable may be used to extend the input source up to 50' away from the distribution amplifier.

The IN3262DS output signals have the same sync format and polarity as the input signal, ensuring excellent operation with a wide range of scan rate compatible CRT, LCD, DMD, ILA, D-ILA, HDLV, and plasma data display devices.

- \$ 907.50 inc GST  
 AV Technology Pty Ltd: +61 7 5531 3103

## Inline IN3252HR



The IN3252HR is a 1-In 2-Out distribution amplifier and line driver designed to

amplify and split one RGBHV signal to two data monitors, data projectors, or other RGBHV compatible output devices. The IN3252HR offers extremely wide band-pass characteristics, 600 MHz Video Bandwidth, ensuring compatibility with analogue video signals at any resolution and refresh rate.

- \$ 1210.00 inc GST  
 AV Technology Pty Ltd: +61 7 5531 3103

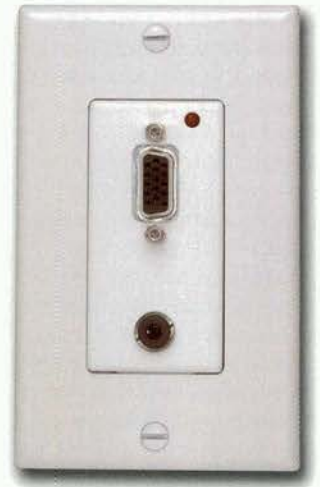
## Kramer VM-3Vxl

The Kramer VM-3Vxl is a full bandwidth, state-of-the-art 1:3 video distribution amplifier, designed for studio and other demanding applications. The VM-3Vxl splits a single input source into three identical outputs with no discernible signal degradation. The VM-3Vxl receives an external 12V DC feed, and is housed in a very compact enclosure, making it ideal for field use.

- \$ 330.00 inc GST  
 AV Technology Pty Ltd: +61 7 5531 3103

## IN-1110/IN-1111

The IN1110 Twisted Pair Video Transmitter and IN1111 Twisted Pair Video Receiver combine to



## Altinex Intera ISC2000 HOT SELLER

The ISC2000 is a wall mounted DA that allows a single VGA to UXGA source to be buffered and amplified for long cable use. Housed in a one gang enclosure, it makes for an easy installation. With a bandwidth of 350MHz it makes it compatible with virtually all computers.

Featuring 3.5mm audio, it will convert unbalanced signals to balanced levels, to allow extended audio cable runs and reduce possible noise interference. The ISC2000 also features a power/signal present indicator, which assists in determining whether video output from a laptop has been enabled. Available in white and beige.

The ISC2000 has been designed for the majority of typical installations found in today's AV environments. Simple in operation it has been optimised for laptop use. The ISC2000 forms part of the Altinex Intera series, which allows expansion to include other AV connectors. From 1 gang in size it can grow to as large as 4 gang with as many as 20 AV connectors. The wall plate is finished in a US style Decora faceplate and is also available in a Clipsal 2000 series version.

- \$968.00 inc GST  
 AXIS Audio Visual Pty Ltd:  
 +61 3 9761 2688

Video Distribution



**Kramer VM-9YC HOT SELLER**

The Kramer VM-9YC is a newly updated high performance 1:2 distribution amplifier for s-Video (Y/C) signals, which also provides controls to compensate for signal losses and phase shift inherent in long cable runs. There are two buffered outputs carrying identical signals, however they each use different connectors. The first features the 4-pin connector, and the other uses the dual BNC format. For local monitoring or for expanding to larger systems, a looping 4-pin connector is provided which is not affected by the front panel controls. Front panel controls allow separate adjustment of gain for luminance and chrominance, along with phase shift for chrominance and high frequency EQ for the luminance channel.

Bandwidth exceeding 320MHz ensures transparent performance even with specialized high-resolution signals. The VM-9YC is rugged, dependable, and is housed in a convenient desktop sized enclosure which can also be rack mounted using the RK-80 kit, which holds two units in one vertical space.

- \$ 715.00 inc GST  
AV Technology Pty Ltd:  
+61 7 5531 3103

create a video transmission system for sending high resolution RGBHV video signal up to 1000 feet (300 meters) using Category 5 unshielded twisted pair (UTP) cable. The IN1110/IN1111 twisted pair video transmission system lets A/V system designers and installers take advantage of the compact size, flexibility, and extremely low cost of CAT5 UTP cable.

- \$ 3217.50 inc GST for the pair  
AV Technology Pty Ltd: +61 7 5531 3103

**Inline IN-1124/IN-1130**



The IN1124 Twisted Pair Transmitter/Distribution Amplifier and IN1130 Twisted Pair Receiver/Distribution Amplifier combine to create a transmission and distribution system for sending high resolution RGBHV video signals and audio signals up to 500 feet using Category 5 unshielded twisted pair (UTP) cable. The IN1124/IN1130 twisted pair video/audio transmission system lets A/V system designers and installers take advantage of the compact size, flexibility, and extremely low cost of CAT5 UTP cable. By using one IN1124 transmitter and four IN1130 receivers, the VGA and audio signal from one source computer can be split and amplified to drive a local monitor plus up to 8 additional displays.

- \$ 3190.00 inc GST for the VGA only pair
- \$ 3960.00 for the VGA and Stereo Audio pair  
AV Technology Pty Ltd: +61 7 5531 3103

**Extron CVDA 6**

Extron's CVDA 6 MX and CVDA 6 MX DUAL are one input, six output composite video (line



video) distribution amplifiers. The CVDA 6 MX Dual has two one-input, six-output

distribution amplifiers housed in one enclosure. Any video source (ie. Camera, VCR, laserdisc, etc.) with an NTSC, PAL or SECAM video output can be split into six different independently buffered and amplified outputs and driven up to 150 feet (45 meters).

- \$805.20 CVDA 6 MX
- \$1,368.40 CVDA 6 MX DUAL  
RGB Integration Pty Ltd: +61 8 8299 0799

**Extron SVDA 6 MX**



This is a one input, six outputs S-video (S-VHS or Hi-8) video distribution amplifier. Any video source (ie.

Camera, or VCR) with an NTSC, PAL or SECAM S-video output can be split into six

different independently buffered and amplified outputs an driven up to 150 feet (45 meters).

- \$805.20  
RGB Integration Pty Ltd:  
+61 8 8299

0799

**Extron ADA 6 Component**

This is a one input, six output distribution amplifier. This distribution amplifier is compatible with RGsB, HDTV, component video, S-video, and composite video. With 180 MHz (-3dB) RGB video bandwidth, the ADA 6 Component is designed for distributing buffered signals to multiple HDTV or other high-resolution display devices through-out a showroom or home while maintaining original signal integrity over long cable runs. This distribution amplifier includes an internal power



supply with an IEC connector

- \$1,598.30  
RGB Integration Pty Ltd: +61 8 8299 0799

**Extron Digital Video Distribution Amps**

Extron's two direct digital distribution amplifiers. D/2 DA4 DVI for DVI (Digital Visual Interface) and D/2 DA4 for DFP (Digital Flat Panel), are one input, four output distribution amplifiers. The D/2 DA4 DVI and D/2 DA 4 accept DVI or DFP signals, respectively, from a computer and distribute up to four identical, independently buffered outputs for cable runs of up to 15 feet. The D/2 DA4 DVI and D/2 DA4 accept transition minimized differential signaling (TMDS) DVI and DFP signals, both at a bit rate of up to 1.6 gigabits/sec/color

- \$2,978.80 D/2 DA4 DVI version
- \$2,978.80 D/2 DA4 DFP version  
RGB Integration Pty Ltd: +61 8 8299 0799

**Extron P/2 DA2 PLUS**

This allows the user to run the output of a computer to two displays. The P/2 DA2 PLUS is a one input, two output high resolution VGA distribution amplifier with 270 MHz (-3dB) RGB video bandwidth, capable of driving any VGA, SVGA, XGA, SXGA, UXGA computer signal a distance of up to 250 feet using Extron's high resolution VGA cable. Including a standard VGA input cable, the P/2 DA2 PLUS provides the ability to split a VGA, XGA, or UXGA input into two outputs.

- \$632.50 P/2 DA 2 Plus
- \$1,828.20 P/2 DA 4 Plus
- \$2,288.00 P/2 DA 6 Plus  
RGB Integration Pty Ltd: +61 8 8299 0799

This report is continued on pg 85

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M1000 = 330w per Ch at 8 ohms



By John Grimshaw

# NEC's 5000 Lumens... ...the SX6000



<b>Brightness:</b>	5000 ANSI lumens
<b>Contrast:</b>	250:1 ANSI contrast
<b>Native Resolution:</b>	1280x1024
<b>Imaging Type:</b>	3 panel DLP
<b>Lamp Type:</b>	1kW Xenon (1000hr life)
<b>Dimensions:</b>	560x682x308 (WxLxH)
<b>Physical Weight:</b>	43kg
<b>Speakers:</b>	none
<b>Vision Inputs:</b>	2x Composite; 2x S-Video; Component; 3x RGB (2x 5BNC & 15pinHD D); SDI
<b>Vision Outputs:</b>	SDI
<b>Vision Source:</b>	All standard TV, and computer signals up to UXGA
<b>Other Features:</b>	variable lamp control down to 4300 ANSI Lumens (increases lamp life), IR Remote up to three units at the same time.
<b>Operating Noise:</b>	58dB SPL (‘A’ weighted at 1m from air vent)
<b>Price:</b>	Projector \$99,000 (ex GST) TL2Z Lens \$10,368 (ex GST)
<b>Lamp Replacement:</b>	\$4,860 (ex GST)

**T**he newest NEC projector is sure to please a number of people looking for a device capable of being used in large venue applications. The NEC SX6000 overtakes the XT5000 as NEC's the top of the line projector. Offering increased resolution and brightness over the XT, the SX maintains many of the features and look of the super-seeded model.

There is no doubt that this projector is aimed at the top end of town, and the hire companies who support the major events and tours. For the owners of the XT5000, the first advantage is that they share the same lens range. At this scale of projectors, you would expect your lens to cost around \$11,000 (inc GST), and the ability to use previous stocks of lenses is a significant advantage.

Of the projector itself the unit has a 1280x1024 3-chip DLP imaging system. It uses a 1kW xenon arc lamp to produce the very bright output of 5000 ANSI Lumens in 'super-bright' mode, and optionally down to 4300 Lumens in 'normal' mode.

The image quality was quite good. Setting up and testing the unit was in its native 1280x1024, using an analogue RGB source. By the end of the set up and testing, colours were well saturated and image detail was stable in nearly all test circumstances.

In the unit tested there was a very slight registration issue. The red pixels were very slightly visible below and to the right the green pixels. This mis-registration was less than a tenth of a pixel width, and so could be considered within tolerances required for an

'excellent' image. It also appeared as if the blue image had a very slight "halo" effect. Typically this is caused by the lens optics in relation to the light source and the DLP chip, and is quite common in projectors.

One of the most difficult images for a display device to cope with is areas of extreme contrast side by side. While this issue is really a CRT problem (caused by progressive line scanning drawing the image on the  
(continued pg63)

### Pixel Registration

The image below is of two single rows of pixels. Note the very slight red glow below and to the right of the white line, as well as the distinct blue halo surrounding the white line.



### Image Ghosting

The above image shows the ghosting effect to the right of the text displayed. This is typically caused by the imaging software driving the display panels.

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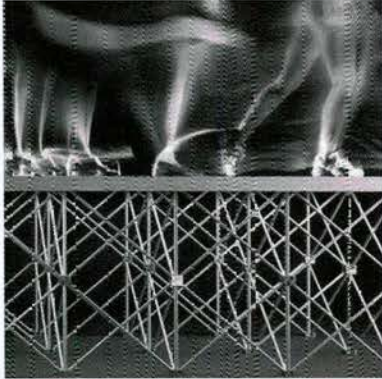
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NEC SX6000

screen), the electronics driving the DLP chips seemed to be similarly affected, causing ghosting that runs from left to right. Again, this problem only surfaced during extremes of testing, and is not a very detrimental issue during normal operation.

The one problem that was encountered which could not be easily corrected was with the contrast. One of the first stages of any projector test is setting up the unit to its best possible output according to a pre-defined setup routine. We use the Kaye Consulting Displaymate, as this gives our tests a reliable, repeatable starting point. The first few tests in its setup procedure are to do with brightness and contrast. One specific test allows you to adjust the contrast so that the shades of grey at the light and dark ends of the spectrum are equally catered for.

I was not able to achieve a 'perfect' image due to the amount of light being projected on areas that should have been black. The specifications indicated that the contrast ratio was 250:1 ANSI Contrast – a relatively low contrast ratio. Low contrast is one of the expected trade-offs from extremely high light output. In the realm of large format projec-

**Good and Bad Contrast**



Ideally, you should be able to adjust the image so that black is black, white is white and all of the greys are clearly visible.



The lower image is for illustration purposes only, and is exaggerated far beyond the contrast problems noted with this projector.

tion, this device's contrast is on the low side of 'average' – I would have expected slightly better performance from a DLP device. However, it is worth noting that this extraneous light output could be difficult to identify in typical applications.

Physically, the unit is big and heavy – definitely a 'two-person lift' device, weighing in at 43kg. The lens was simple

to install without instruction, and only required a screwdriver to remove the external lens shroud.

**Economies of Scale**

This projector is designed to appeal to the numerous hire companies that are avoiding the purchase of a single 10 to 12k ANSI Lumen projector in preference to two 4 to 5k ANSI Lumen stackable devices. For these companies, the ability to have the two devices as separate hire items helps to make the investment pay off faster. When stacked, they also give each other redundancy back-up if one fails while being used.

Two SX6000s (with lenses) would cost around \$220,000 - \$25k to \$30k cheaper than the single projector option. Each SX6000 costs about \$5 an hour in lamp life to operate.

**Dr G's Guide to How Bright is Bright Enough**

**Just how many ANSI Lumens do you need...**

**Under 1,000**

Boardroom/classroom presentations where fast and simple setup is the priority. Short throw (usually under 3m) to a screen size typically 2m diagonal, and lighting control of the room is very important. Ideal for instant presentations, small areas etc.

**1,000 to 2,999**

Larger screens (up to 5m diagonal) can be accommodated, however ambient lighting control would be essential. Great for 2m screens in light ambient conditions. Ideal for home theatre, boardrooms etc.

**3,000 to 4,999**

Good for standard large screen use (up to 5m diagonal). Bright enough to withstand a certain amount of ambient lighting in these applications. Usually too bright for small applications. The better projectors in this range are designed to be easily stackable and have lots of image control options. Ideal for video cinema, lecture theatres etc.

**5,000 to 9,999**

Big screen use only. All projectors built with this capability are stackable and have lots of image control options. Fan noise of the unit is significantly increased to keep the unit within operating temperatures. Ideal for corporate presentation work etc.

**Over 10,000**

Projector is capable of coping with extremely large image size or very bright/uncontrollable ambient conditions. Projectors in this range are very bulky, and usually require specialist technicians to set up. Ideal for large touring concerts, outdoor cinema etc.

**Input Array**

This device has more inputs than you can poke a stick at, and each are individually accessible as separate inputs on the menu.



Note the tractable carry handle, and the four 'feet locators' for stacking multiple projectors

**Rating...**

Ease of Use:	5/5
Set-up:	4/5
Image Quality:	3/5
Features:	5/5
<b>TOTAL</b>	<b>17/20</b>

# Singing In The Rain

## A Wet Winter for Sydney...



Australian version of classic musical takes off, as the crew deal with too much water on stage

**W**ith the lead up and opening night success of *Singing in the Rain*, you would suspect that the show had followed the usual timetable. You know the one - where the producers work at least a year ahead.

Not so. *Singing in the Rain* was only legally signed off in early January this year. Leaving 8 bare weeks until pre-production rehearsals! Plus, the show has been very well received by critics and public alike. So how did they do it?

Technical Director Richard Martin explained the process. "David (Atkins, producer) and myself were working on the Olympics. I went to see the US production in October in San Jose.

It's a touring version - bus and truck, lot's of soft (drapes) and hardly any scenery. A basic design, load in two days before. I came back and told David it was a great show, but an ordinary production".

A week later, Atkins - widely heralded as the creative star behind the Olympics Ceremonies - and co-producer James Cundall of IMG, saw the show for themselves. They agreed it would need to be built in Australia.

The production was to be upgraded into a major musical, and the Australian version would thus be the largest and most ambitious version staged. The US version designer Michael Anania agreed to sell the design, and to oversee the local adaptation, by Design Associate Eamon D'Arcy.

Meanwhile, the producers had meetings daily with Richard Martin to define and improve the show. "David knew what he wanted, he had a miner's eye view of the show" says Richard. "It was a real short timeframe. If we had have bought the show from the US, it would have been easier in the time available".

Through November the thousands of threads were woven. Venues, casting, costumes, marketing, scripts and scores on the one side, lighting, audio, sets, design and mechanicals on the other. Budgets were made, remade and finessed. By December, the producer's were ready to select production vendors.

The set was to be built by two workshops, Adelaide Festival Workshop were responsible for 70% of the work, and ALM Pty Ltd constructed the other 30% in Melbourne. "I designed it all to break down not only for truck and sea containers, but also small enough for aircraft if required" says Richard.

### WHAT'S IN THE SHOW

Take a cast of 34, plus two boy children. Add 2,500 litres of pre warmed, treated water. 2,400 40 watt light globes (which took eight stage crew four hours to fit!) and an orchestra of 21. Add on 29 local, and 15 touring staff and crew, plus admin. Stitch and care for 350 costumes, build the set, hang 12 scenic clothes, one huge light up sign and six flippers, and you've got a show - minus sound and lights.

The sound and light package was decided when the producers decided in advance they wanted to use a V-DOSC styled system, in this case made up of DV-DOSC line array loudspeaker cabinets from Jands Production Services.

"David and James had heard V-DOSC in *Mamma Mia* and *The Full Monty*. The price wasn't over the top - Jands were pretty good, with a sensible hire approach. The lights ended up coming from Jands also, when a package was offered. Now that Jands have sold their lighting to Bytecrafft, they (Byte) implement it."

The lighting designer selected was, and is, the current hot choice, Trudy Dalgliesh. She happened to be a trifle busy at the time, with *Sound of Music*, *Shout* and *Annie* all running, starting, or moving. Production electrician Peter Herbert worked closely with her, and co-ordinated the set electric's.

Meanwhile sound designer Wyn Milsom devised a DV-DOSC rig, including a centre cluster of 10 cabinets. This necessitated the advance truss being split in half, as it was

By Julius Grafton

Trudie wanted the truss moved more to the house, so it sits about 4 metres forward of the sound, and off to each side.

Four DV-DOSC's are flown each side, and two floor stacks of 7 cabinets a side sit on top of two bass boxes. In an interesting departure from the line array principle of strictly vertical arrays, three single cabinets are used under the lip of the stage as front fills.

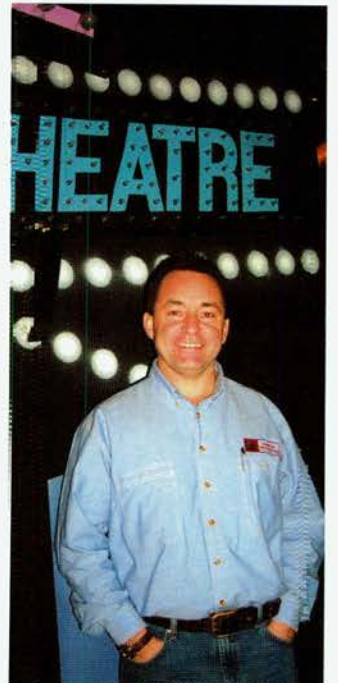
Associate sound designer and FOH engineer, Michael Waters finished off the design and installation when Wyn Milsom fell ill. He mixes the show on a Midas XL-4 console. There are 30 wireless packs utilised, some are changed amongst the cast.



(above) DV-DOSC Line Array as it is set up in the Lyric at Star City. There are left and right stacks of 7, as shown atop 2 bass bins, plus floor left, right and centre arrays.

(left) One of the DV-DOSC single cabinets installed below the lip of the stage, as front fill from the orchestra pit.

(below) Technical Director Richard Martin looking relaxed after opening night.



# Lots of Stuff

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On Stage

**Wet DPA Mics**

The miniature microphone of choice at Jands Production Services is now the DPA 1060 / 1061. And on this show, special treatment is required for the wet scene. A special 'Aquatic' kit comprising a thin latex film is added, it is acoustically transparent for frequencies over 100Hz, says show audio designer Wyn Milsom. And yes, the wet scene is sung live, not done to tape.

The two 1,250li water tanks pre-heat the water for the rain effect to a comfortable 42 degrees.



Up in the air is a sizeable lighting rig, primarily featuring Vari-Lite devices of the VL-5, VL-5 ARC, and VL 6B persuasion. Conventional luminaires comprise 250 ETC Source Four's, and there are 58 scrollers in use. 56 Mini Strips do the cloth lighting task, these are loaded with either EYS or EJS dichroics.

Finally, the lighting system is all driven by a Whole Hog II console. There are three Lycian 2k followspots, and a handful of stray fresnels drifting about.

Previously, we mentioned about 2,400 lightglobes, 100,000 watts worth, which occupy about 45 desk channels and do all manner of chasing, fan and pattern work.

These were a late addition, when David Atkins decided to - add them, just 5 weeks out from opening! They make up the scenic elements of the finale. The job of inserting all those globes - can't you just imagine it? Apparently, the pile of discarded globe cartons needed to be seen to be believed!

Luckily, Richard specified the lamp scenery sit in touring frames, so that 8 people wouldn't

be required for four hours every time they needed to be rigged or de-rigged.

**THAT SPECIAL EFFECT.....**

Everyone talks about the water. Out back are two oversized hot water systems, each containing 1,250 litres. The water is treated by Nalco Australia, who test for bacteria. After filtering, it is UV disinfected.

The rain comes from a flown rain curtain, water is pumped up from the tanks and also to the downpipe on the set. The set moves forward for the scene, and has a floor which is like a containment dish. Shallow storage tanks underneath catch the water, which is pumped back to the heater tanks.

The temperature is set at 42 degrees, which suits lead Todd McKenney. Naturally by the time it falls as rain, it is a little cooler than that. McKenney stomps and splashes around, so the orchestra have become rain savvy and understand when to move what out of the way. A 34 litre wet vacuum quickly soaks up spillage, which Richard has estimated at no more than 15 litres each time. How's that for planning precision?

Or this: in the surprise finale, the cast all get wet. In their yellow raincoats. So, upon leaving the set they discard raincoats while standing on rubber mats, and chuck their wet gear into Otto bins. Talk about organised!

The professionalism of this production impresses, it will leave Sydney in September and run at the Melbourne Regent, shoehorned onto that stage. Richard has already figured he will need 15 trucks for the run south in springtime.



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*The Punter's Perspective*  
by John Burfitt

**In** the history of entertainment, there have been too-many-to-mention great stage musicals which have made it as classic movie musicals.

However, it has been a rare to find a movie musical, which was written directly for the screen, make the transition from the cinema onto the stage - and most have met with only varying degrees of success. Singin' in the Rain, however, has proved to be an exception.

The 1951 movie about Hollywood in the 1920s, as talkies replaced the silent movies, is acclaimed by many as being the greatest movie musical of all time. The show certainly had some pedigree to live up to. The stage version became a monster hit on London's West End, and that is exactly what I predict this show will do as well as it tours Australia for the rest of the year.

Director David Atkins has adopted a very smart strategy in making the move from screen to stage - he has given the punter exactly what they want to see. If you loved Singin' in the Rain on the screen, you will love Singin in the Rain on stage.

Singin' in the Rain is less of a stage musical and more of a stage impersonation of a movie musical. The show looks just like the movie, sounds just like the movie with the same score and the addition of only a few other numbers, the choreography is reproduced straight from the screen. The performances are virtually direct copies of the characters made famous in the movie by Gene Kelly, Donald O'Connor, Debbie Reynolds and Jean Hagen. Every look, movement, gesture and dance step is there. If you want the movie, you are going to get it on stage at the Lyric Theatre.

It is very hard to take something that was designed to be shot by cameras in the wide expanses of a studio with days, often weeks to film them, and shoehorn them onto the stage into a show. The tight little scenes that are so easy to do on screen are a little more problematic on stage, especially when Act One alone consists of 14 scenes. With some brilliant staging by designers by

Michael Anania and Eamon D'Arcy and technical director Richard Martin, the show is kept flowing effortlessly from one scene to the next.

The sets are superb and on opening night some of them - like the movie studio soundstage scenes - earned their own deserved applause. The grand scale of the lavish sets add dynamic, bold colour and spectacle to the proceedings. The fly tower and wing expanses of the Lyric have been used to their best advantage as scenery constantly flies in and out, or is pushed in from the side - and I know the effort they were going to because from my seat on the side aisle five rows back, I could see everything that was happening.

The result of fast changes & using numerous areas for small scenes added to the consistency and flow of the show. If only the same could be said of script which, at times, becomes so bogged down in its faithfulness to the movie script that it sometimes grinds along and the gags fall flat. It is said that Atkins overhauled the original script, but it could still do with some judicious cuts.

One of the problems of faithfully using the original script and the original choreography is that it barely gives the performers a moment to breathe and sometimes their split-second costume changes in the wings and reappearance on stage are almost as impressive as the dazzling singing and dancing.

The ensemble is universally terrific and some of the best stage dancers in the country have been assembled for the show. They are very strong. And thanks to Trudy Dalgleish's great use of lighting, every scene is well and appropriately lit and the stage certainly never looks dull. The combination of the great sets, lights and costumes makes for a visual feast.

And as for the rain? Well, it looked good if you just stared at the middle of the stage. From my side seats, the effect was somewhat diminished as I could see where the rain began and ended. However, it created a great puddle for McKenney to jump around in and splash himself silly.

John Burfitt is an entertainment reviewer and writer who has worked in all facets of the performing industries. He is currently Features Editor of TV Week, as well as Musical Theatre & Cabaret Writer for The Sydney Star Observer.

John has also worked as a performer and director in a variety of productions, ranging from PACT Theatre to the Enmore Theatre and the Closing Ceremony of the Olympic Games.

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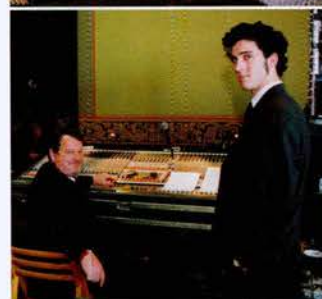
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Show Director Annie Reid and Lighting Director Tim Hall



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Noel Bennet and Sebastian Gault from Mcleans on Monitors



Haycom Video Team of Wayne Nietz, Rod Morrison & Richard Danko

To commemorate the opening of the first federal parliament at Melbourne's Royal Exhibition Buildings in 1901, a joint-sitting of federal parliament took place on May 9th, 2001 - 100 years to the day.

The event, attended by 6000 of Australia's highest ranking dignitaries, was tendered out in July last year. Of the five event companies that applied for the job, Peter Jones Special Events was the successful tenderer. They established a second office to cope with the prestigious event.

"It was a great phone call when we heard we'd won it, but it was also very frightening," said Event Director Peter Jones. "We've done a lot of large events but this one is on a different level."

The core event team consisted of Peter Jones (Event Director), Jon Smith (Executive Producer and designer), Jim Brewster (Production Manager) and Gemma Arnold (Event Producer).

Jointly funded by State and Federal government, the cost of A Nation United and its two accompanying events - A Sense of Place, a multi faith celebration, and a VIP's cocktail party held at the new Melbourne Museum hosted by Steve Bracks - came in at around \$3.5 million. Jon Smith explained around half of the overall budget was spent on additional staffing, infrastructure and management from an OH&S perspective.

"The biggest difference between our event and 1901 is that in 1901 they didn't have OH&S so they had 12,000 guests. There was no amplification of sound or images and the audience stood without being able to hear or see anything. And that's a big departure from what we're doing."

"The challenge in this building is to safely seat 7000 so they can see & hear the proceedings. Plus we've got a symphony [with] a 120 piece orchestra and a 300 voice choir."

The first half of the programme was the official sitting of parliament in the building as it was in 1901, followed by a commemorative ceremony celebrating the achievements of

prominent Australians. Running between 2pm and 4pm, the programme included an additional two hours of pre-show entertainment inside and outside the building, provided by the tri-forces and the Victorian Youth Choir.

The guest list included the current and previous Governors General, all current state Governors, all current and former federal members of parliament, all state members of parliament, all past Prime Ministers, all municipal Mayors, and the entire federal and state judiciary including high court and supreme court Judges.

With so many VIPs in attendance, security was a major part of the overall planning. Risk assessment and security taskforces met weekly over a four month period to assess every possible angle of risk and security. For the two-week build up to the event the entire precinct was secured and all contractors and suppliers were required to go through an accreditation process including adhering to OH&S standards.

"This was probably the safest event site that has ever been put together in Australia," claimed Jon. "And it had to be, because if a bomb went off in this building on the day, you'd have to question how well the country would run. You'd potentially take-out every current parliamentarian and Judge in the country, so we've had to be incredibly thorough across all possible areas."

As EP and designer, Jon was determined to preserve the historic feel of the Royal Exhibition Buildings by restricting the rigging of technical equipment from the building itself, and ensuring that any equipment or structures did not detract from the heritage building.

"We could have filled the whole place with truss, which would have made it easier for our suppliers, but an artist has been commissioned to paint the event," Peter explained.

Based closely on the floorplans from 1901, the set-up included a main stage and two satellite stages for the orchestra and choir. The 6000 dignitaries were seated in the Great Hall and three large grandstands were erected on the upstairs balconies to seat the public contingent of 1000, and the Canberra Press Gallery. To help the heritage balconies take the weight of the grandstands, Sonny Adams Staging installed an additional 32 pillars to spread the load.

Tiny Good and the Showtech Rigging team provided a 26m wide by 4.8m deep Tomcat rig as the mother grid for the main stage, supporting a 16m tri-truss arch for the main screen, lighting, drapes and incidentals. Showtech also provided rigging and consulting services, scaffold, projector black-out boxes and specially designed lighting poles placed on the building's columns to protect the paintwork and heritage detailing.

ABC Radio and TV broadcast the official proceedings, and their OB facilities were used to mix the orchestra and the choir. Jim Brewster explained the acoustics of the building were so difficult to work in, sending a clean signal to Grant Walsh's PM4000 at FOH from the OB vans

was the only way to provide a proper mix for the audience. Audio was supplied by McLean Audio and consisted of 32 x McLean MP122s, 20 x JBL 4728/26, 4 x EAW KF750e, 4 x EAW SB750f, 4 x EAW JF260 and 4 x EAW JF80 as a distributed reinforcement system spread around the building on Yamaha delays.

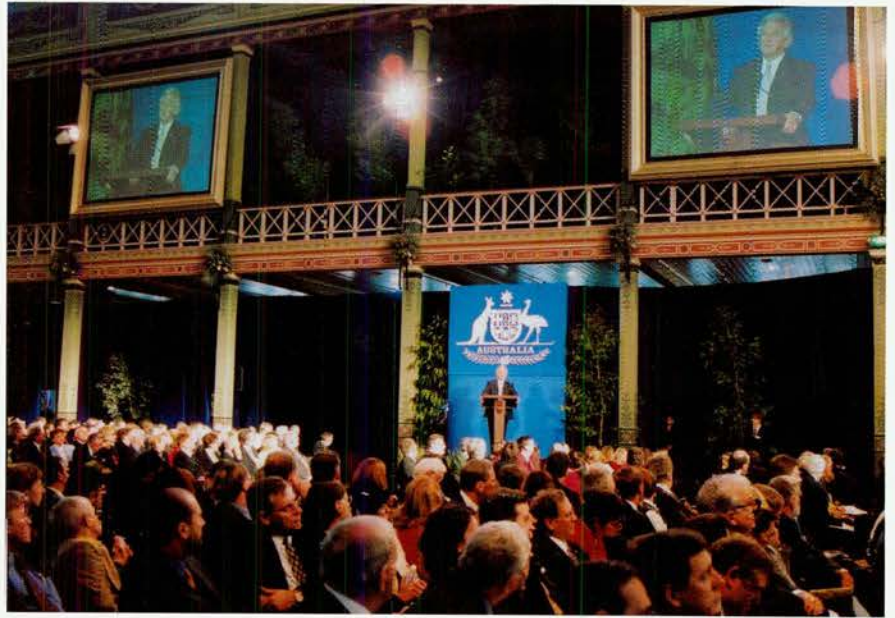
"As most people know with venues like this, the more PA you put in, the worse it gets," said Jim. "So we've kept it down by doing a distributed system and just keeping it above the level of someone talking in the room."

Haycom Staging supplied a powerful combination of projectors and screens to beam the 12 camera ABC shoot around the building. Three Hughes projectors were triple-stacked to provide images to the 20 x 15 rear screen above the main stage, and double-stacked Barco 6400s were used on another five 12 x 9 screens, with 12 large plasma screens also used in 'hard to see' areas of the building. Outside, two 20sqm Clipsal LED Superscreens and a Turbosound PA from Galjay Production Concepts were set up in the surrounding gardens for the assembled crowd to watch the proceedings.

Jim explained the lighting requirements for the event were extensive, though not in a theatrical sense. LD Tim Hall from Resolution X designed a rig to generally light the building while providing essential key-lighting for the ABC broadcast.

Communications were also extensive with around 450 staff working on the day. A seven channel Clearcom talkback system was required just to call the show and included two-ways, standard belt packs and a UHF wireless system.

"We could not have done the event without Liz Pain from Event Logistics. She helped devise how to handle a lot of the logistics and provided most



of our event staff on the day," explained Jon.

Being a government event, all suppliers had to tender using an exhaustive eight month process.

A few days after the event, Fete reported that all three functions ran smoothly and for all their planning and precautions, they ran without so much as a minor technical hitch.

"We would have loved to be able to ring up the people who organised the first parliament in 1901 because when you look at the logistics of what they did with 12,000 people, it's staggering," said Peter. "I doubt if we'll be here in 2001, but it will be interesting to see what they do in another hundred years for the next anniversary of Federation."

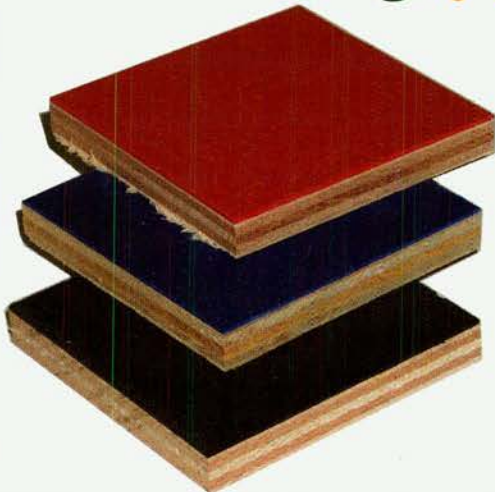
- Mandy Jones



Left to right:  
Jim Brewster (Production Manager)  
Jon Smith (Exec Producer & Designer)  
Peter Jones (Event Director)

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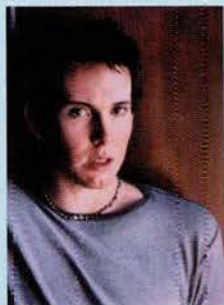
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## NATIONAL TRACKING GUIDE

## C H A R T S



ARTIST Sean Ikin

SINGLE *Honeymoon In Vegas*  
 PRODUCED By Joe Hardy  
 ENGINEERED by Paul Gommersall  
 STUDIO Festival Studios  
 MASTERED by William Bowden @  
 Festival Mastering



ARTIST One Dollar Short  
 SINGLE *Board Game*  
 RECORDED by Greg Stace & Andy  
 Beck @ Powerhouse Studio  
 MIXED by O.D.S & Greg Stace  
 @Powerhouse Studio  
 MASTERED by Steve Smart @  
 Studios 301



ARTIST: Zed  
 SINGLE: *Renegade Fighter*  
 PRODUCED by David Nicholas  
 ENGINEERED by David Nicholas-  
 Assisted by Nic Manders  
 STUDIO: Revolver Studios,  
 Auckland NZ  
 MASTERED by Don Bartley @  
 301 Mastering  
 MIXED @ Mangrove Recording  
 Studios, Australia  
 PRO TOOLS by Nic Ned Manders,  
 Andy Lynch & Adrian Palmer

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<b>A#Sharp</b> Jeff Cripps +61 2 913 9988	2 Track Analogue/32 Track Digital		
The Bellhops	Jeff Cripps	Jeff Cripps	CD
N.Y.K	Jeff Cripps	Jeff Cripps	CD
Big Toy	Jeff Cripps	Jeff Cripps	CD
Swing Sation	Jeff Cripps	Jeff Cripps	CD
Rivers & Roads	Mark Worrall	Mark Worrall	Demo
<b>Damien Gerard</b> Marshall Cullen +61 2 9555 1710 - 2"	2 Track Analogue/ Pro Tools. Digital		
Pete Wells/Angry Anderson	P Wells/Angry	Russell Pilling	Rec + Mast - Live Album
Teddy Sexuuls	Marshall Cullen	Russell Pilling	Compilation Album
Simon Holmes	Simon Holmes	Russell Pilling	
Heatwave3	Norma O'Hara Murphy	Russell Pilling	Compilation Album
X-Steve Lucas	X-Steve Lucas		Mastering Live Album
<b>Feral Studios</b> Jon Robertson +61 2 6299 322 30	Track Analogue Recording & Digital Mastering		
Juggernaut 101	Jon Robertson	Jon/Quinn	Album
Di Flynn	Jon Robertson	Jon Robertson	Album
Exhibit A	Jon Robertson	Jon Robertson	Album
Simone Pekethman	Jon Robertson	Jon Robertson	EP Tracks
Kandi Doz It	Jon Robertson	Jon Robertson	Album
<b>Floating Point Studios</b> Martin Eckel +61 2 9318 1550	Music Mixing & Recording Studios		
Pnau	Peter Mayes	Peter Mayes	Single Mixing
L'More	Sam & Nick Littlemore	Peter Mayes	Single Mixing
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Dan Brodie	Phil McKellar	Phil McKellar	
Waikiki	Tim Whitten/Waikiki	Tim Whitten	
Ghostwriters	Rob Hirst	James Cadsky	
<b>Rockinghorse</b> Anthony Lycenko +61 2 6688 4009	Neve 48 Chan, Studer 24 Trk, Pro Tools Mix 24		
The Cruel Sea	Magoo	Magoo	Album Tracking
Noosphere	Jeff Lovejoy	Jeff Lovejoy	Album Tracking
Junkbeats	Dave Brammah/Anthony Lycenko		Single Remix
Craig Ross	Craig Ross	Michael Worthington	Album mastering
<b>Sound Level</b> John Soane +61 2 9552 3200	24 Track Digital		
Grinspoon	Jorden Brebach	Jorden Brebach	Demos
Izadora	Izadora	Jorden Brebach	Demos
ABC	Michael Yezerski	Jorden Brebach	Soundtrack
ESN	Jorden Brebach	Jorden Brebach	Mix Down
<b>Soundwarp</b> Meredith Brooks +61 2 9905 7144	Mastering		
Ben Jones	Ben Jones	Meredith Brooks	Album
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Doug Cameron	Richard Lush (P)	Richard Lush (E)	Mixing
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**C H A R T S**



**ARTIST Wendy Mathews**  
**SINGLE Beautiful View**  
**PRODUCED by Michael Szumowski**  
**ENGINEERED by Danielle McWilliam**  
**MIXED by David Hemming @ Tiger Studio, Sydney**  
**MASTERING: Don Bartley @ Studios 301**

**Studio News**

**DEX BUSY**

Among the latest projects swamping the guys at Dex Mastering recently, are remasters for Walt Disney Records, an EP for Dan Hall (ex Taxi Ride) and a new album for the Joe Chindamo Trio which reached No 1 on the Japanese HMV chart in February and has just been released in Australia, through Newmarket Music.

This album was mixed to 1/4" 2-track analogue and mastered directly from that - something the band was rapt with and the engineers at Dex would love to see more of!

New restoration software has been added to the Layla and Sadie 24.96 suites to cope with demand. Dex also masters direct to Exabyte tape in DDP format for CD manufacture, which is the preferred and most reliable format for many CD plants. (Masters on DAT and CD-R often undergo a transfer process to Exabyte at the plant. This obviously increases production time, but has been thought by many in the industry to actually have an affect on the sound. A contentious issue!).

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Julieanne Saler	Peter Kennard	Counwright/Mark Worrall	Album
South Sydney Youth services	Lindy Morrison	Danny Golightly	EP
J Edgar Groover	J Edgar Groover/Danny Golightly	Danny Golightly	EP
Caviar	Caviar/Mark Worrall	Mark Worrall	EP

<b>The Vault</b> James Cadsky +61 2 9555 8298 SSL, 48 Track Analogue, Pro Tools Mix Plus			
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Rachel Holmshaw	James Cadsky		
Paul Green	James Cadsky		
The Ghostwriters	James Cadsky		

<b>Velvet Sound Recording Studios</b> Dave McCunn +61 2 9267 2915 24 Track 2" & 64 ch Pro Tools 5.1 Mix Plus			
Ides of Space	Wayne Connolly	Wayne Connolly	Album Mixing
Dark Order	Dark Order	Adrian Grigorieff	Album Track+Mix
Brooke McLymont	Charles Fisher	Daniel Clinch	Album Tracking
Billy George (USA)	Jeff Lenham	Daniel Clinch	Album Tracking
The Devoted Few	Wayne Connolly	Wayne Connolly	Album Track + Mix

**Queensland**

<b>Coral Sea Studios/Select Sound</b> +61 7 4059 2888 Jan Sarchfield			
Rita Mills	Nigel Pegrum	Nigel Pegrum (E)	Album
David Hudson	Nigel Pegrum	Nigel Pegrum (E)	Album
David Hudson/Ashley Dargon	Nigel Pegrum	Nigel Pegrum (E)	Album
The Thing in The Wheelchair	Diane Cilento	Nigel Pegrum (E)	S/track for Play

<b>OPM Studios</b> Daniel Seymour +61 7 3374 0066 Adats & Logic Audio with Mackie			
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Alchemy	Craig Thompson	Daniel Seymour	Album
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Ming Van Acker	Dash Mclvor	Dash Mclvor	Single
Kaylene Newton	Dash Mclvor	Dash Mclvor	EP

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Lot 34	Eric Vandersande	Dianne Burns	Mastering
Freeman	Eric Vandersande	Paul Jackson	Mastering
Swanky Dee	Andrew Hines	Dakota Crouch	Editing

**Victoria**

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Little Murder	Craig Pilkington	Craig Pilkington	Album Mixing/Post Prod
Killjoys	Craig Pilkington	Craig Pilkington	Album Tracks

<b>Backbeach/Elevation</b> Mark Rachele +61 3 5988 6948 24 Track Analogue/Digital/Pro Tools			
Madison Avenue	A Van/J Cource	Mark Rachele	Remix
Superphonic	Oakes/Rachele	Mark Rachele	Single
Renee	Mark Rachele	Mark Rachele	Single
Earth	Earth	D W Norton	
6 <sup>th</sup> Element	Cam Denny	Mark Rachele	Single & Remixes

<b>Baker Street Studios</b> Allan Neuendorf +61 3 9888 8084			
Compliments Of Gus	Compliments Of Gus	Allan Neuendorf	Album
Paul Colman Trio	Paul Colman	Phil Gaudion	Album
Jan Bentley	Allan Neuendorf	Allan Neuendorf	Album

<b>Dex Mastering</b> Adam Dempsey +61 3 9372 2266 Pro CD Mastering & Audio Restoration			
Zeek	Darryl Shallard	Adam Dempsey/Ken Shulman	EP

ARTIST	PRODUCER	ENGINEER	SESSION
Broderick Smith	Chris Corr	Adam Dempsey	Album
Peter Mumme	Peter Mumme	Ken Shulman	Installation Soundscape
Theresa Band	CAAMA Music	Adam Dempsey	Album
Beheaded	Beheaded	Adam Dempsey	EP
<b>Edensound Mastering</b> Martin Pullan +61 3 9682 9066 Focusrite 'Blue' Mastering Suite at Metropolis Melbourne.			
Jimmy Barnes	Drew Thompson	Martin Pullan	Live Double Album
Deep Purple	Drew Thompson	Martin Pullan	Album
Oksana	Sasha Dulov (Moscow)	Martin Pullan	Single
Merri May	Merri May Music	Martin Pullan	Album
<b>Honeyface</b> Mark Hilton +61 3 9507 2067 Digital recording, Mixing & Mastering			
Dom Jurcec	Mark Hilton	Mark Hilton	Album
Tom Griss	Mark Hilton	Mark Hilton	Album
<b>Lo Ricco Sound Studios</b> Marcello Lo Ricco +61 3 9701 6220			
Al Taweel	A Taweel/M L Ricco	Marcello Lo Ricco	Demos
David Bleir	D Bleir/M L Ricco	Marcello Lo Ricco	Demos
Jason Crewes	J Crewes/M L Ricco	Marcello Lo Ricco	Demos
Doctor Smunk	Doctor Smunk	Marcello Lo Ricco	Demos
Freeza		Marcello Lo Ricco	Live - Rec+Mix
<b>Metropolis Audio</b> Sally Rodrigues +61 3 9696 2111 48 Track Digital - SSL Room			
Deep Purple	Brian McMahon	Brian McMahon	Live CD - Mixing
Jimmy Barnes	Brian McMahon	Brian McMahon	Live DVD - Mixing
<b>Shanty Town Music Studio</b> Alec Lewis +61 3 9380 5884 Recording, CD Duplication + Post Production - Cubase & Pro Tools.			
The Great Elevators	Alec Lewis/Emily Rogers	Alec Lewis/Emily Rogers	EP
Yamamoto	Alec Lewis		Demo
The Ice Cream Hands	Alec Lewis	B Sides	
<b>Studio 52</b> Paul Higgins +61 3 9417 7707 Two Major Music Production Studios Studio C is in final building stages.			
Cash Backman	Trevor Carter	Trevor Carter/Mitch Kenny	Album Mixes/Mastering
Dutch Tilders	Trevor Carter	Trevor Carter/Mitch Kenny	Album Pre Production
Airspace Media	Ed Nimmervoll	Mitch Kenny	V/Overs
Killjoys	David Badrich	David Badrich	Album
<b>True Form Recording</b> Neil Gray +61 3 9391 0907 Mackie HDR24/96, Soundtracs 36 Ch Inline Console			
Kutcha Edwards	Ross Wilson	Neil Gray	Mixing
Roger That	Neil Gray	Neil Gray	EP
Klinger	Klinger/Neil Gray	Neil Gray	Single
Eddie Would Go	Neil Gray	Neil Gray	EP
Stonewall	Neil Gray	Neil Gray	Single
<b>Wombat Rd. Recording Studio</b> Barrie Clissold +61 3 5145 4204 24 Track Digital + Mastering & Duplication			
Jarrold Hackman	Barrie Clissold	Barrie Clissold	Demo CD
Funky String band	Peter Datty	Barrie Clissold	Mixing/CD Mastering
Jodie Lee Unstead	Unstead/Clissold/Ewarth/Twite	Barrie Clissold	Demo Tracking
R Sanderson	R Sanderson	Barrie Clissold	Memorial CD

**Western Australia**

<b>Poonshead</b> Rob + Sam +61 8 9339 4791 Audio Recording/Production/Mastering			
Juno	Rob Grant	Rob Grant	Recording
The Outhouse Rockers	Rob Grant	Rob Grant	Recording
Rachell Pirnie	Rob Grant	Rob Grant	Mastering
Interim	Rob Grant	Rob Grant	Recording/Mixing
<b>Revolver</b> Vic Manfrin +61 8 9272 7505 32 Track Music Facility			
Simon McArthy	Simon Mcarthy/Ben Glatzer	Ben Glatzer	EP Mix
Dragwire	Dragwire/Ben Glatzer	Ben Glatzer	Tracking
Cartman	Cartman/Ben Glatzer	Ben Glatzer	Single Tracking & Mix
Thumb	Thumb	Ben Glatzer	Mastering
Sissy Bar	Sissy Bar	Laurie Sinagra	Tracking
<b>Sonic lab</b> Mark Whitehouse +61 8 9375 3902 Audio & DVD mastering			
City Of Albany	Jay McDaniel	Mark Whitehouse	Federation Concert 2001
Cartman	Ben Glatzer	Mark Whitehouse	EP Mastering
WA Museum	Fran Sweetman	Liam Collins	DVD Surround Soundtrack
Music Design Systems	Tim Count	Liam Collins	DVD Showreel
<b>Witzend</b> Alan Dawson +61 8 9336 1888 16 track Analogue + 8 Track Digital			
Heads We're Dancing	Alan Dawson	Alan Dawson	Album

**CHARTS**



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**SINGLE** What The Day Brings  
**PRODUCED** David Darling  
**ENGINEERED** Jeff Peters  
**STUDIO** Sony Studios, LA

**PROFILE**



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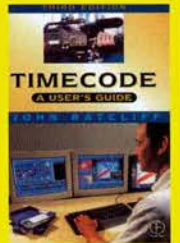
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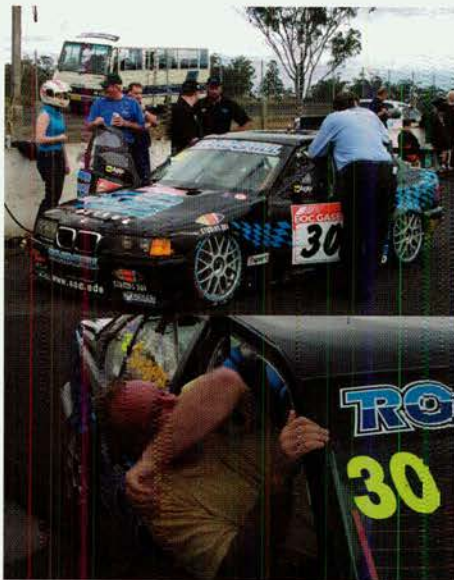
## Race Day for Studios 301

Studios 301 recently had a corporate day at the race track. 301 and SAE co-sponsor a Super Tourer car – a BMW 320i. The day involved getting driven around the race track by driver, **Luke Searle** at a very hectic pace.

Hurting around the race track in the passenger seat of this very fast car is one of the most scariest things you can do – as John Grimshaw discovered when he took up 301's invitation to the day.

**Tom Misner**, the man behind 301 and SAE, was also given a ride around the track. Much to the delight of the invited crowd, Luke chose this particular moment to test the car's uncontrolled spin attributes.

After the ride, Tom found (as we all did) that getting in and out of these vehicles is not easy – and certainly not graceful!



## New Staff...

### General Manager for Philips Lighting

Philips Lighting have announced that General Manager **Stephen van Wessem**, who has been at the helm now for over seven years, has tendered his resignation. Over the past three years, Van Wessem has also managed both the Australian and New Zealand of the Philips Lighting operations.

Stephen has decided to pursue a career outside Philips and will take up the position of Chief Executive Officer of Jaycar Electronics, as of July 2001. All at Philips wish him the best of success in his new position.

Philips Lighting is happy to announce that **Kenneth Ng** (right) will replace Stephen as of 1st July 2001. Kenneth comes from the Asia Pacific head office in Hong Kong where he has been responsible for the Asia Pacific marketing strategy.



### New Sales Manager at ULA

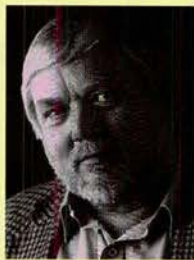
Universal Lighting & Audio (ULA) Pty Ltd have announced that Mr **Dave Jackson** (left) has been appointed to the position of Sales Manager – ProVision. Based out of ULA's Melbourne facility, Dave's wide production experience and strong product skills will aid him in supporting the SGM and Avolites products.

In Melbourne Dave will be assisted by Product Support Specialist, Mr **Luke Hall**, and in Queensland by ProVision Sales Representative, Mr **Blair Terrace**.

• Ph: +61 3 9310 4999

~ VALE ~

**Jamieson Lewis**, a Melbourne based lighting designer, passed away unexpectedly this May from a sudden heart attack. He was 58.



Jamieson was synonymous with Melbourne Theatre Company, designing over 400 productions in his 25 years as resident lighting designer. He also designed lighting for opera companies

throughout Australian and New Zealand. His last design was for MTC's production of 'Art'.

Jamieson was a facilitator at WAAPA's Lighting Master Classes, and was a recipient of the Greenroom Award for Outstanding Technical Achievement to Australian Theatre. He will be greatly missed by the industry.

Another person who departed earlier this year is **David Whitworth**, a lighting designer from Brisbane. Noted recently for his extensive work with the students of QUT's Technical Production (theatre) course, he will also be missed by the many people he has worked with in the professional theatre community. He died as a result of an accident while at home.

Connections would like to pass on their condolences to the family and friends of both of these well-respected industry people.

## ? Helpline confidential

I recently was asked to work on a job – if I could bring my own harness. While I did understand that this company was not rich enough to buy safety equipment for all crew, whose responsibility is the supply of safety gear?

There are certain jobs where people are employed under the assumption that they will bring the safety gear required to do a job – a rigger for example. However, in the vast majority of cases, it is up to the employer to see that they provide the safety gear required to do a job.

This goes for everything from earplugs, hard hats, safety glasses, and even harnesses. If an employer asks someone to do a job that is potentially hazardous and does not offer any protection to the employee, then that employer leaves the gate open for serious litigation if something goes wrong.

The flip-side to this issue is that if an employer does provide the safety gear, tells you to wear it and you choose not to then it is you that is held responsible in the case of an accident. This has serious implications if you hurt someone else in the accident.

To find out more about rights and responsibilities in this area, you can talk to the your local version of Workcover. In Australia, each state has a department responsible for work safety issues.

• **Resolve it! Write to Helpline confidential, c/o mail@conpub.com.au or fax +61 2 9876-5715**

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## Memories of Mr Methane



[Re your story on *Weird Mic'ing* in the last issue,] I remember being told the day before that he was coming in and that he was going to do a performance.

Normally when acts come into the studio's an Engineering person (me) would be on hand to make sure everything is OK. Well that day I was the person left holding the short straw.

This man - this Mr Methane - layed on his back and started taking these huge breaths of air. We all just started laughing, myself and Amanda Keller has tears running down our face before the first fart was even let go.

I'm sure a lot of people out there are wondering what we used to mic his arse. Quite simply really. An EV RE-20 on a table mic stand right near his cake hole.

After coming back from an Ad break, Andrew and Amanda have intro'd this guy and, my God, he cut loose performing - Smoke on the Water, Another One Bites the Dust and God save the queen, to take us out to the break.

By the time he finished I could hardly stand, tears were pouring out in laughter, and the smell - WOW words cannot describe!

As soon as Mr Methane left, Wazza the Rock Dog grabbed the Mic and was off, jamming it under any unsuspecting 2MMM employee nose all day. Saying: "Go on; smell the ana. Mic!"

Since then life has changed quite a bit. I now own my own Event Management Company and 2MMM among others are now one of my best clients. Which leads me to another interesting Mic Story.

2MMM Live at La Luna Brothel. That's right, an OB from a Brothel. There was basically three scenarios. The Spa Bath. Foursome, The lesbian sex on the queen bed, and a lucky winner who got a freebie on air with one of the lovely ladies.

The Spa bath was "interesting", unfortunately I had to lean over the spa to get the Shure Radio Mic to each of the naked ladies (bugger). The lesbian sex was a bit harder. We used two Shure Lapels wired up to two candleabras on either side of the bed and a Shure shotgun pointing up

the bed. As for the lucky winner well. Unfortunately he was a little drunk and couldn't quite get there for the finish of the add break so he had to fake it.

We've done plenty of stupid stuff. We once wired up David Rymer with Shure IEM and Radio Mic sent him up the Ski lift at Perisher and had him on air talking to a guy in Doonside doing burnouts in the street while David was skiing down the mountain. Awesome stuff.

• **Jason Owen, Day 2 Night P/L**  
Phone: +61 2 9889 7220  
Email: [jason@day2night.com.au](mailto:jason@day2night.com.au)

*Ed - The things people do!!! Thanks to Jason for sharing this tale - methinks you enjoy your work far too much. I'm just glad you gave me an excuse to run his picture again.*

## Rubber Chickens and Large Dead Fish

Re The Weird Files, (Connex May), further to the rubber chicken and the ice cream container, I also worked thru the punk era with a band whose lead singer had a percussion setup which he hit with a large dead fish. After a couple of 'numbers', the mic - a Beyer 201 - was nicely coated in a fine layer of fish ooze. As was the monitor wedge and mic stand. After, I confronted the 'singer' about the mess and suggested he clean it up. The response was that I could go and get stuffed. Funny part is, the idiot in question has entered the real world and now works in my industry for a company who try to sell me products!

• **Retired FOH man, Balmain NSW**

## More Remembrances of Weird Mics

Memories came flooding back as I read Duncan Fry's contribution on Weirdest Thing I've Ever Miked. I played Bass in *The People with Chairs up their Noses* but unfortunately I don't remember Greg Hughson. Apart from some house engineers, we had 3 live mixers; Tim Cole, Charlie Mao & Tony "Rat" Gilbert, during our short career, and we also worked with 2 recording engineers; Jim Atkins: ABC radio, and David "Daffy" Williams: York St Studios.

However it is possible that he might have mixed us at the Jump Club in Collingwood, our contract there stated that the headlining band's crew would also operate for us! (a very unusual benefit for a support act).

Or, he might have done some gigs after I left the band (I was kicked out for taking things too seriously! and replaced by a keyboard player named Bevan).

The kick drum was indeed a steel oil drum, 18 gallon, we did  
(cont over)

## More On Industry Training Please

We have just introduced a vocational Music Industry Skills course at our school and are currently building up resources and reference material. Our students and staff were very impressed with the coverage and appearance of your magazine.

Of particular interest to us was the article on Industry Training and the profile 'A Day in the Life of a Studio Engineer', as our students are currently researching the different careers available in the industry and the training required for these - for which there appears to be very little written information elsewhere.

The girls' vote went unanimously to 'Touring Kylie', but they were also amazed (and somewhat fazed!) by the enormous amount of high-tech equipment featured throughout the magazine.

'Connections' is a valuable resource for our course; please continue the vocational education features and job profiles.

• **Jane Cateris, Co-ordinator, Music Production Skills, Canterbury Girls' High School**

*Ed - We have every intention of pursuing more industry training articles, and would encourage suggestions from our readers for areas or institutions you would like us to cover.*



*"People With Chairs Up Their Noses" - a band with serious percussion issues*

by *Tiny Good*

## You Want To Be A Rigger!

What does it mean to be a rigger and have a rigging certificate?

**To** start with, it means you are more responsible than most people you work with for safety and work procedures. It means you are the one most likely to be taken to court by Workcover if an incident occurs due to fall from heights, loads failing or any other structural failure on a site you are present on, whether it is part of your job or not.

It means you will have to do work that you can not charge for - more so than any other part of the production. It means you will be paid less than most of the other "technicians" on the crew because most production people don't see the riggers as anything more than trained gorillas with a bit of rope.

Rigging in general has changed a lot in the last few years mainly due to the changes in Workcover legislation. Rigging used to be a skill that was taught and inspected much the same way as an apprenticeship.

There was an entrance examination that included a medical and fitness examination. There was a period of school training, followed by a period of on the job experience with a fully qualified rigger who then had to sponsor you ticket. The inspectors also used to have more of an advisory role than the "sort it out yourself" guys you meet today. This is not that they don't know, or don't want to help, it is just they are legally tied up so as not to become liable themselves.

These days almost any person who wants to rig can get a ticket just by passing the exam. The rest they learn as they go and are usually only checked after an incident or by engineers attached to local councils, or venues. It is known by Workcover as "self regulation" and basically means go for it but make sure you can prove it to the coroner if something happens.

"Self Regulation" also has a legal "out" for Workcover in that the legislation states that all persons, prior to operating an unfamiliar piece of equipment, must seek equipment specific training. This means if you have never done it

before and it goes wrong, you have to prove you had been instructed in the safe way of doing something or you are in the wrong regardless of your ticket.

In our industry how many times do we do exactly the same thing exactly the same way? I know that I do vary a few rigs that are the same weights on the same points with the same other loads around it, so my preparation needs to be spot on.

So what does it mean to be a rigger in the entertainment industry? You are responsible for any system you put in the air whether ground support or hung from an existing structure. You are responsible for proving, if questioned, that ALL of the system is within the specifications, this means the point, the structure above, the truss, the load including the lights, sound, AV, Pyro, Crew weight, set weight, and wind loads if applicable. You will also be expected to advise on safe work practices both at heights, and in the area under a suspended structure, and to enforce those practices.

All the proof needs to be documented not just verbal and working it out in front of the inspector or engineer WILL NOT CUT IT!

Rigging is a skill as much as lighting, sound, AV, Scenery, or any other part of our industry. Skills are learned, and practiced over many years - you do not just do a course and then you are a master.

The way to learn is to look and listen. There are a lot of good riggers in our industry. The old ones with the knowledge, and the new ones with the drive, but there are a few who think "do the course and go for it. I've got a ticket, I'm a rigger."

I hope they read this and do the time to get it right all the time, and for those who would like to try, great - but take the time to learn the skill not just the theory. The first thing they tell you at rigger's school is they can not teach you to rig using only the theory behind the physics.

The rigging information contained here is the opinion of Tiny Good based on industrial training as a rigger, and job experience. No liability is accepted for use or misuse of this information.

### Letters (continued)

consider a 44 but it was way too large! I don't recall the plastic ice cream container, however we did have an oil can which was a "work in progress"; its tone continued to change as it was beaten out of shape! We were also pretty proud of the "snare" consisting of a metal letterbox filled with cutlery. Other parts of the kit included an ironing board, a cast iron U-bend, and a number of glass bottles. Our "drummer" was the same Jim White who went on to play for Dirty Three & Venom P Stinger, the rest of us went back to our day-jobs! Miking the "Junk kit" was never an issue, Kick & Overhead was all we requested and always worked a treat, there was never a problem with top end.

Daffy Williams did some interesting stuff with 2 mics on the 18 gallon drum, a mic inside (D12 or M88, I can't remember which) & a

shotgun (Senn ME80) in front about 2m away; it required a bit of fine tuning with distance and phase but the result was a very satisfying "crack". Jim Atkins also got some very spacious sound at a live recording with a pair of PZMs gaffed together as an overhead (XY) pair. In addition to 2 (or 3) mics the Kit also required a D.I. as Jim also used either a Syndrum or a Casiotone. If it was a house engineer doing the sound, I would take delight in saying that the D.I. was for the U-bend! After seeing the "junk kit", most people would believe anything. The rest of the band was very conventional; electric guitar, saxophone, bass and 3 vocals.

•

Mark Barry, live sound engineer  
mark@bssound.com.au

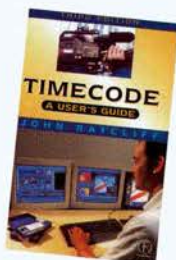


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Recent radical changes in timecode technology, location shooting and post-production working practices have been brought about both by the fragmentation of the television programme making industry and by a dramatic increase in affordable digital transmission and editing equipment and systems. With the expansion of non-traditional television service providers (cable, satellite and video-on-demand) almost anything goes as far as shooting and editing formats are concerned. Timecode: A User's Guide is an indispensable reference for anyone needing to get to grips with the many aspects of timecode, whether inhouse or on location.

The third edition of Timecode takes these changes into account, to now include:

- timecode and DVD, LTC & VITC in HANC packets in the serial digital TV interfaces
- timecode in IEEE1395 (Firewire)
- timecode and digital video cassettes
- new recording formats of DVD, DV mini cassettes and D6 are included
- 4:3 scanning for wide-screen films-standards updated
- new material to cover new working practices
- new appendices to cover the global LF time data transmissions and time data embedded BBC transmissions.

Advice is also given on avoiding and remedying faults and errors.

### MASTER OF YOUR DOMAIN By Donte D'One \$29

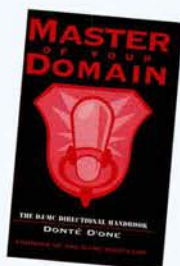
Donte D'One has written an informative handbook for up and coming DJs and MC's as well as for those already established. Covering critical points that every DJ/MC, young and old should consider. From public speaking to marketing, advertising, attire, equipment, organisation, trouble shooting, radio, promoting, fees and salaries, voice-overs, slam and beat mixing.

With professional training courses in four states and over nineteen years of radio, TV, DJ and MC experience, Donte is always looking for new ideas and trade secrets to pass along to FPD (Future Professional DJs). His writing style has been described as personable and funny with an emphasis on professionalism. This directional handbook will show you how to become one of the most versatile DJ/MCs in the industry. Preparing you for the new millennium.

Plus an added bonus each copy of *Master of your Domain* contains a fifty dollar voucher to be used at any Boot-Camp training location across Australia.

So if you're serious about being a P.O.P. (professional organised personality), the don't just stand there soldier!..Buy this book!

If you're not...then memorise these words.  
 "Would...you like fries with that?"



### THE DJ FACTOR By Donte D'One \$29

In this book the Sarge covers CD burning, promoters, the click, retailers & distributors, racism, the Beat mixing myth, drugs, money management, DJ software, intelligent lighting, DJ slanguage, things that make you go Hmmm, plus much more.

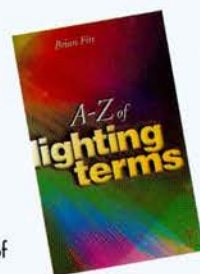
As always, Donte has included Rego forms and discount vouchers to the DJ/MC Boot Camps across Australia.



### THE A-Z OF LIGHTING TERMS By Brian Fitt \$52

The A-Z of Lighting Terms will be of use to all those in the industry, particularly students, who have heard expressions or terms and wondered what they meant. Although most technical books have glossaries, this book has expanded on many of these terms using illustrations to clarify some of the more complicated principles, formulae and laws.

There is much common ground between American and European terms and practices and this book aims to give a transatlantic flavour. Training in the lighting industry is very much by experience and hopefully, this publication will be a good basis for the theoretical and practical side of lighting.



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# Inside SAE

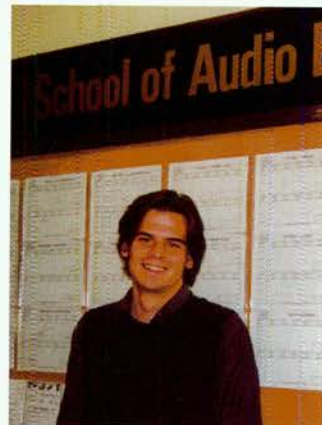
Julius Grafton visits the Sydney SAE college, and finds a multinational student body enjoying some cutting edge equipment

SAE is the current name of the School of Audio Education, a large international chain of colleges founded by Tom Misner in Sydney. These days Misner is becoming somewhat a studio mogul, his 301 facility is the largest in Australia, and is the anchor studio of a fledgling international chain.

Today SAE International Technology College operates 32 colleges on every continent except Africa, and boasts 14,400 enrolled students as we go to press. It is far and away the largest audio multimedia college in the world.

The student mix in Sydney (the largest of five Australian colleges) is approaching 40 percent foreign, as the transfer aspect allows enrolled students to move between SAE locations. Clearly this is attractive, since overseas study in - say - America, is the desire of some Australian students, while many overseas students clearly enjoy study in Australia.

*(continued on next page)*



SAE Sydney manager **Marco Bettelli** is a course graduate (as are all SAE teachers) and previously established the Athens SAE operation. "If you can make it in Athens, you can make it anywhere" he quipped.

## Letter from a job hunter

I am 22 years old, and currently unemployed.

In July of 1999, I successfully completed certificate IV in audio engineering at SAE Melbourne. Apart from some live mixing at odd venues, and writing unsolicited applications to almost every studio in Victoria, have not been able to get a job in the industry.

I have recently been in contact with some classmates from SAE, and found they are in the same predicament as me, being; there are not too many jobs around for starting-out audio engineers, and, the qualification, that we paid \$ grand for, doesn't mean squat.

I know about 301 only taking successful SAE students, but, has 301 got enough room for the amount of students that go through that place?

I think potential students of SAE etc, should be warned about this. They (SAE) are churning out a lot of engineers, who, like myself, will end up on the dole queue.

P.S. - Any advice?

**Andrew Jackson**

[andrewjaxsn@optushome.com.au](mailto:andrewjaxsn@optushome.com.au)

Head of Audio at SAE Sydney, **Craig Howard**, makes a point in class.

SAE require their teachers be graduates, and have a job placement scheme in operation. The debate about job opportunities within the recording industry rages on - we know there are very few assistant engineer positions available in this part of the world.

But a Certificate or Degree course (SAE offer several varieties) does carry weight in some sectors. SAE graduates often find work in the audio visual industry, in venues, and broadcast. Our visit also unearthed a growing number of students who do a course for their own projects - typically musicians who are keen to expand their own recording facilities.

Head of Audio at SAE Sydney, **Craig Howard**, decided to do a course several years ago as a change of career. He had run an audio production company for ten years or so in the 1980's, and was initially wary about committing time and money to SAE. He enquired around the traps and pitfalls beforehand.

The Sydney SAE facility occupies an entire building in Wentworth Avenue, and boasts modern 8, 16 and 24 track studios, as well as a multimedia floor where every student has access to a computer. It has a good feel to it.

Courses range from 24 weeks part time (A\$3,490) to a Bachelor of Arts (Hons) Recording Arts - which is an intensive two year program, shaving a year off a traditional degree. There is a new Digital Film program.

SAE isn't for everyone, but it is most definitely worth investigating.

[www.sae.edu](http://www.sae.edu)



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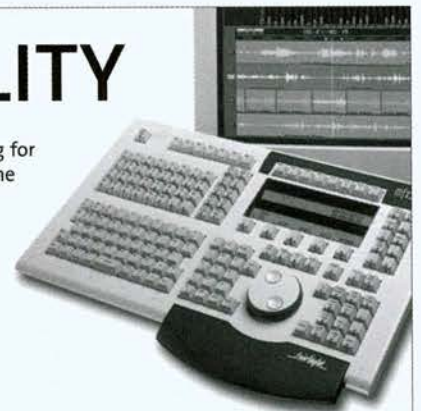
- Recording systems and processes
- Mixing console theory and practical usage
- Multi-track recording for acoustic and electronic music
- Signal processing, special effects
- Sound for the screen
- Post production

### FAIRLIGHT MF3 PLUS ADVANCED OPERATORS COURSE - 3 DAYS (\$800)

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*fairlight*



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## THE DEATH OF BENTHAM

I can imagine that there are many people reading this column who are puzzling about the title - who was Bentham and why devote a column to him? The reason is simple; Fred Bentham is generally regarded as the father of modern stage lighting equipment.

The Bentham name became famous from the late 1940's through his editorship of 'TABS' a freely issued journal published worldwide several times each year by Strand Electric from London and which had early learned the trick of the soft sell - what is now inelegantly referred to as 'advertorial'. 'TABS' announced Strand's new equipment but unusually also explained how to use it; it carried essays on technical subjects and significantly explored new theatre building illustrated with good photographs and distinctive plans. 'TABS' became a collector's item, an archive of architecture and a unifying force for lighting people long before either the Association of British Theatre Technicians (ABTT) or the Association of Lighting Designers (ALD) were formed.

For those of us who couldn't get enough of 'TABS' dropping through the letterbox was manna from heaven and it was eagerly devoured. Its style set the pattern for such publications for decades and its idiosyncratic use of article titles remains with many writers (especially this one) to this day. 'TABS' under Bentham published many seminal articles, one about a young Richard Pilbrow's lighting of 'Baal' was probably the first to print a lighting ground plan (decades before stencils and CAD) coupled with photos of each scene and a description of what the lighting designer had intended and what equipment had been used. For me, and I suspect many others, this lighting stuff suddenly made sense.

As a young student I was dragooned into attending monthly meetings of the new ABTT held in the basement theatre of Strand Electric in London's Covent Garden. As my colleagues and I descended the stairs we were faced not only with a sea of faces, none of which we knew, but also a benign looking gentlemen attending a table filled with cheeses and wine. This, we later learned, was Bentham's associate 'B' Bear. Somehow, by the time we had glass in hand 'B' had steered us to meet a person with similar interests. As someone who had constructed a model of the London Palladium and specifically of the motorised dimmers I found myself talking to Bentham, the creator of the Palladium's famous organ lighting console. It seemed to me at 19, incredible that, within minutes I could meet such a person and wondered how he would react to a student. My fears were groundless, Fred recognised a fellow lighting enthusiast and that was all that mattered to him, then and throughout his life. Many years later I was honoured to lecture (badly) on sound at his famous King Street free lectures, the walls of the theatre being covered with the theatre plans I had studied in my younger days.

Bentham's contribution to stage lighting could not have been achieved without the devoted team which followed him, but his was the energy, the vision and the passion. He wasn't always right, and he was especially sensitive to accusations that he wasn't a lighting designer

as such. Plus there was an almost Churchillian tendency to be spectacularly wrong or spectacularly right, but he enjoyed being controversial so either was fine!

From the mid 1930's he and his team began to improve Strand's range of equipment by learning about the latest developments elsewhere and from this time the company began to look like an international concern. They spent considerable time in theatres learning about lighting and understanding the problems, thereby building a special relationship with customers which lasted decades. Strand's great strength was that they listened, most of the time, so their equipment was designed not by software architects but by people often working in the theatres at night. Fred and his team rationalised an almost haphazard range of equipment and made a quantum leap from batch manufacture (which could be easily customised) to mass production for mass markets.

Under Bentham the prototype of the modern profile spotlight emerged (and of course the ubiquitous Patt 23!), Britain learned about beamlights, control systems became remote from their dimmers, thyristor dimmers were introduced and computers were first used to record stage lighting. Much of this would probably have happened as the inevitable consequence of time but Bentham's achievement was that these developments had a relationship to each other and to what the industry wanted, they had a theme and a style unique to Strand.

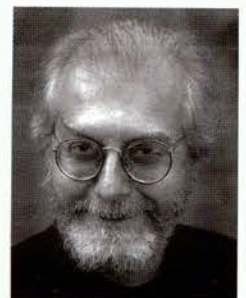
McCandless delivered his formative book on stage lighting in 1932, Ridge and Aldred theirs in 1936 and Percy Corry his in 1954 but for many of us the first lighting bible was "The Art of Stage Lighting" which Fred first delivered in 1968. Stronger on equipment than on lighting design the book remains the best source of information about how and why Strand's range was designed the way it was, and thus forms the basis for today's ranges.

Bentham's sensitivity about his lighting design background was understandable given that he created an entertainment called 'Colcur Music' in which a Compton cinema organ would play carefully selected music whilst back-to-back Fred at his Compton/Strand light console organ would play lighting changes on a sympathetic set of draped muslin and rostra. The ease of access, which the light console afforded, meant that effects could be produced at random and as the music and the setting stimulated the designer. Not only was this to become impossible in later lighting controls, because of the need to pre-program, but it also presaged the kind of controls which concert lighting would produce decades later.

Bentham was, by comparison with today's world, a rare being, a technician-inventor who was also an executive. He got his hands dirty and it showed in the quality of his work. And it shows in his legacy and in the deep affection of all those who knew him.

Face to black.

For more info on Fred Bentham and the early days of Strand Electric, see "Sixty Years of Light Work" published by Strand Lighting in 1992 and also "The Art of Stage Lighting" by Fred Bentham the Third Edition of which was published by Pitman in 1980.



## Jet Lag

Waiter, there's my head in the soup

**If** you've travelled overseas by plane, then you will have almost certainly experienced the strange disorientation known as jetlag. It's a very logical problem - your body has moved faster than time on the ground and your internal body clock is all messed up. You're awake when you should be sleeping, working when you should be resting, and eating at all times of the day and night. When you put your head on the pillow, it's not surprising that sleep can be a long time coming.

And next day there's the '4 o'clock syndrome', where around about that time in the morning you're suddenly wide-awake, raring to go. The converse effect occurs at that time in the afternoon; suddenly you feel as though someone is pouring a giant bucket of sleep over your head and you are powerless to resist. This can be very disconcerting for anyone you might be talking to, as without warning you slump onto the nearest chair, table or floor!

Luckily it doesn't last forever, and your body gradually adjusts to the new settings, but it can take time. How much time depends on the person. Her indoors says that it takes her about two weeks to get adjusted to a new time zone - not much help if you're only there for a week!

So how does the (show) business traveller cope with the typical short-term 'plane-meeting-dinner-hotel-meeting-plane' business trip on the other side of the world? Where you don't have the holiday luxury of lazing around for a few days getting used to things, but have to jump right in at the deep end?

Many people have their own personal method, but a lot of them involve copious amounts of alcohol, which may not be the best thing if you have to front up to a breakfast meeting. Having breath with all the knock-down power of a charging rhino is not generally considered to be world's best practice in deal making!

However, I'm now going to share with your Dr Dunk's very own beat-the-jetlag blues, a tried and tested method that works for me, so there's every possibility that it'll work for you.

How much would you expect to pay? Well put away that credit card, old buddy, because this long suppressed secret knowledge of the ancients is given to you absolutely free! (Plus postage and handling charges, but we'll also throw in one free donut flipper at no extra cost).

For me, the typical business trip consists of the plane trip, setting up the exhibition stand, maybe dinner with the local people, then back to the hotel to sleep. The next few days are filled with all-day work on the stand talking to potential customers, followed by packing up the stand and getting on a plane to go home. Not much time to get acclimatised.

There are two things I never travel without - one, my own pillow, and two, earplugs, and three, a duty-free bottle of Baileys... alright, three things I never travel

without (cue voice saying "I didn't expect the Spanish Inquisition!")

Once on the plane, I'll eat, watch a movie, and then prepare to sleep at the normal time I would at home. Then I'll close my eyes and put in the earplugs. I find that the earplugs deaden the plane noises, which, depending on where you're seated, can range from engine/wind noise, through to the clatter of dishes, crying babies, and all points in-between. In this way I can get at least six hours sleep, or more, depending on when breakfast or the next meal is served.

When the plane lands, I try to immediately drop myself into whatever the local time is. I'll check in at the hotel, and then go for a walk around town, make a few phone calls, do anything except sit around. Doing nothing is the worst possible option, because it allows the body to slip back into its normal routine.

When it's around nine or ten o'clock in the evening, or when my eyes won't stay open any longer, I'll go to bed. And this is where the pillow comes in, because there is nothing like sleeping on your own pillow. The thickness, the feel, the bounce, (the smell?) are all exactly what you're used to.

When I toured the backblocks of country Victoria and NSW with a truck and a PA, sleep was very precious, a typical night being in bed at 4 am, up again at 8 am to drive the truck to the next gig. The standard of accommodation at this level of the industry left a great deal to be desired, and I soon learned that if I had my own pillow, I went to sleep almost immediately. If I used the pillow that came with the bed, then I tossed and turned all what was left of the night.

Pillows were either like chunks of wood, or filled with old truck retreads, or were too big or small. Even if they were OK, they were just not what I was used to, and there was no time to get used to something new. Call me a sook if you like, but you always sleep better with your own pillow!

So I use my own pillow, and I'll re-use the earplugs. In fact, I'll use the earplugs every night that I'm away.

They can take a couple of minutes to get used to, but it's well worth persevering with wearing them, because they instantly put you into a de-sensitised cocoon, buffered from all the strange sounds, plumbing noises, slamming doors, people yelling, etc. that make up the typical large hotel at night.

You also get the hypnotizing effect of listening to your own breathing, which sends me off to sleep within a minute or so. And more importantly, I stay asleep all night. No 4 o'clock syndrome, just a solid 8 hours, which sets me up for a hard day's work being nice to people!

There you have it - Dr Dunk's Anti Jetlag cure. Try it yourself if you're travelling soon. Sweet dreams!



## Who is doing what?

### Dynalite *(continued from page 11)*

that the Dynalite product did not focus on. So, therefore purpose of the amalgamation was to supplement the Dynalite product - not replace it.

By the following month, one side gave notice to the other that the distribution contract would be terminated. Both allege that it was the other side that ended the contract. This move stepped up renaming of Dynalite (UK) to iLight Ltd and the creation of iLight Group, as well as the development of competing products. David Kerr, who managed Dynalite (UK) heads up the new company as iLight group plc chairman and managing director of iLight Ltd.

With no outlet for Dynalite products in the UK, Gunton established a wholly owned subsidiary company, called Dimtek Ltd. With legal wrangling between the two main players still occurring, Gunton was not going to be able to trade as Dynalite in the UK. However, he did retain the brand rights for the name, so late in 2000 "Dimtek Ltd - Exclusive Distributor of Dynalite products" was born.

Gunton put Jon Theis in charge of the setting up of the company. Gunton tells us that he and Theis are now in negotiations regarding their future dealings. Exactly what this means is not yet clear.

Dimtek organised an employment consultant to advertise jobs for the new company. This resulted in three other former Dynalite (UK) employees joining. There has been some speculation from the UK that these people went to Dimtek with considerable knowledge of the plans the new hybrid company, iLight, had. However, Gunton assured Connections that there was nothing improper about the employment, simply that these people applied for the jobs and had the product experience Dimtek needed.

After several months of regrouping, iLight was officially launched in March 2001. According to their web-site and the launch materials, there is not a very big product range - yet.

- John Grimshaw

### AVFX *(continued from page 10)*

After the proposal was made to the staff, they were asked to prepare a list of the 'ideal' equipment needed to stock the new firm. Following this, serious money was then invested to fill the shopping list. A decision was made early on by the management to not only stock the company with equipment that was state-of-the-art, but to carefully roadcase, itemise and database every item so that longevity and quality of the investment was maintained.

Apparently the time between 17 April and 1 May, the new factory at Coopers Plains was a hive of activity as stocks of the brand new gear arrived, and the facilities were prepared. Meanwhile, the objectives and the positioning of the company were being planned.

Their stated intention is to be a 'wet hire' company. They want to avoid simple 'dry hires' of equipment, and focus on event support and management as well as providing high end equipment and experienced technicians to operate it. AVFX have invested in considerable amounts of technology, including a brand new Trinity live mixing and vision processing device.

## MARKETREPORT

### Video Distribution

Continued *(from pg 58)*

#### Video Commander UTP (ZVL0019),

The AV Transmitter Module - UTP (ZVL0019), when used with its companion receiver, the AV Remote Receiver - UTP (ZVL0009), transmits full-specification video over greater than 1000 metres of Category 5 or 500 metres of voice-grade telephone cable. Return serial control, two line audio and two mic inputs with independent AGC are also included.

Unlike other devices, because this system fully compensates for cable losses you can send multiple composite video signals on the same multipair cable without any crosstalk or signal degradation. Designed for trouble-free operation, it rejects hum caused by earth potential differences and is toughened against lightning damage.

- \$330.00 ZVL0019
- \$330.00 ZVL0009

Command Integration +61 2 9940 0676

#### Video Commander Modular Switcher

Designed primarily for presentation system use, Modular Switcher is such an amazingly simple idea, you'd wonder why no-one's thought of it before. Using just a screwdriver and 3 different parts - input cards, output cards and cardframe - in a few minutes you can assemble an RGBHV plus audio switcher or router of any size up to a practical limit dictated purely by physical size.

The Modular Switcher concept allows dealers and system integrators to economically meet a huge variety of requirements - especially the unusual ones - immediately from stock. A compact, flexible form factor makes decentralised switching practical, simplifying wiring and eliminating the need for the usual source-end drivers.

Modular Switcher Input Card (ZTR0100) - \$214 each (You need 1

input card per output). Modular Switcher Output Card (ZTR0200) is \$170 and the Modular Switcher Cardframe (ZTR0300) is \$192. Each cardframe fits 12 cards in any combination. As you would expect, multiple cardframes can be linked to create larger systems.

- 6 in - 1 out - \$1650
- 4 in - 2 out - \$2249
- 5 in - 3 out - \$3921

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#### Video Commander Media Retrieval System

Operating entirely on standard structured cabling systems, Video Commander is a highly cost-effective, more flexible alternative to traditional RF-based distribution systems. Requiring no coax, amplifiers or modulators, Video Commander uses distributed router technology to cleverly sidestep conventional system bandwidth limitations and provides the highest quality results.

As well as providing destination-end control of source devices, Video Commander now permits destination-end source selection - like "channel surfing", but better because now the users selections can be centrally managed, limited or over-ridden. Compatible with existing analog and new digital monitors and sources, Video Commander is ideal for VOD, pay-per-view and public information systems.

- Prices range for typical systems, excluding remote controls for each output are 1 in - 8 out system - \$7851.80, 8 in - 24 out system - \$19,789. Each additional group of 8 outputs increases price by approx \$4499. Each additional input increases price by approx \$418 (+ \$1485 for each group of eight inputs). Remote control handsets - \$129.80 each

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[www.icia.org](http://www.icia.org)

**SMPTTE (Broadcast)**  
July 10–13. Sydney  
[www.smptte.org](http://www.smptte.org)

**PRO AUDIO & LIGHT Asia**  
July 12 – 14 – Singapore  
[www.pala.asia.calendarone.com/](http://www.pala.asia.calendarone.com/)

**INFOCOMM Japan**  
29 – 31 August – The Big Sight, Tokyo  
[www.icia.org](http://www.icia.org)

**PLASA**  
9 – 12 September – London  
[www.plasa.org.uk](http://www.plasa.org.uk)

**INFOCOMM EUROPE**  
12 – 14 September – Cologne, Germany  
[www.icia.org](http://www.icia.org)

**AES 111th (Audio)**  
21 – 24 September – New York  
[www.aes.org](http://www.aes.org)

**LDI**  
2 – 4 November – Orlando, USA  
[www.aes.org](http://www.aes.org)

**NAMM (Music/Audio)**  
17 – 20 January, 2002 – Anaheim, LA  
[www.namm.org](http://www.namm.org)

**ENTECH 2002**  
4 – 6 February, 2002 – Darling Harbour, Sydney  
[www.conpub.com.au](http://www.conpub.com.au)

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...Add Your Own Power

# Introducing the All New JBL MPRO Loudspeakers. A Merging of Looks, Legacy and Laminar Flow.

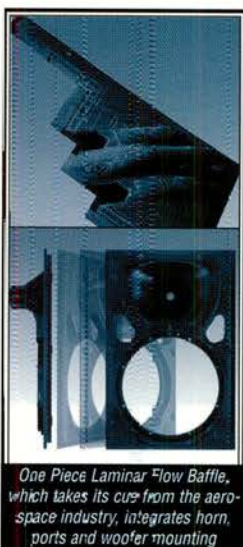


Fast and simple - your "Powered by Crown"™ JBL system is ready to go in seconds.

You're looking at a speaker fashioned by more than two generations of JBL engineering. What you can't see, however, is even more amazing. Like a unique Laminar Flow Baffle™, whose principles

have their roots in aerospace engineering. A design so refined it will actually reduce distortion caused by turbulence and diffraction. It's an MPRO exclusive.

MPRO exclusives don't end there. Consider our new generation of high performance, transportable subwoofers designed to outperform your wildest imagination of how good low end can sound. Case in point, our new premium MP418SP combines the exclusive, one-two punch of VGC™ (Ventured Gap Cooling) and Crown amplifiers in a single, compact, portable enclosure. This remarkable product is more than a powered subwoofer; it's actually a complete and flexible sound system.



One Piece Laminar Flow Baffle, which takes its cue from the aerospace industry, integrates horn, ports and woofer mounting.

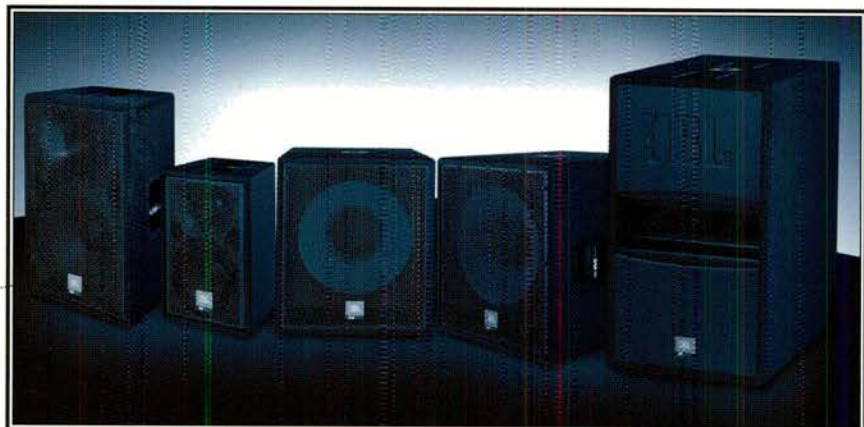
The MP418SP features a built-in, two-channel amplifier module that delivers more than 1,300 'Powered By Crown' Watts of performance while also eliminating the cost and hassle of amp racks and external crossovers. All this in an enclosure less than 24" tall. What's more, you can pole mount your favorite two-way speaker on top of the MP418SP for an unbeatable package of performance and coverage.



Self-powered and convenient - the MP418SP and MP410

Prefer to use your own amp? The MP255S dual 15" subwoofer uses a dual tuned chamber design to put all its energy where you need it - *in the low end*. Plus, with its heavy duty casters, great styling and tough plywood carpet-covered enclosures, the MP255S is the new high-end sub in the lower-end price class.

With all that said, the best way to experience MPRO loudspeakers is at an authorized JBL Professional retailer. For more information, visit [www.jands.com.au](http://www.jands.com.au) and follow the links or call (02) 9582 0909.



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# Stage Zoom 1200

# Why?

Because of its Power,  
wide-ranging Graphics  
capabilities, Colour System  
with countless combinations  
and superior Optic System.  
And it is the most exclusive  
because...

Because  
it has interchangeable heads,  
allowing it to be used as a Spot  
or Wash.

Because  
it has the most uniform light beam.

Because  
it has variable progressive  
frosting, with extremely effective  
wide beam.

Because  
it has 4 indexed prisms,  
which can be combined with  
the indexed gobo system and  
continuous colour mixing.

Because  
it has hot lamp re-strike.

...Because the brightest heads  
can change  
the world.



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