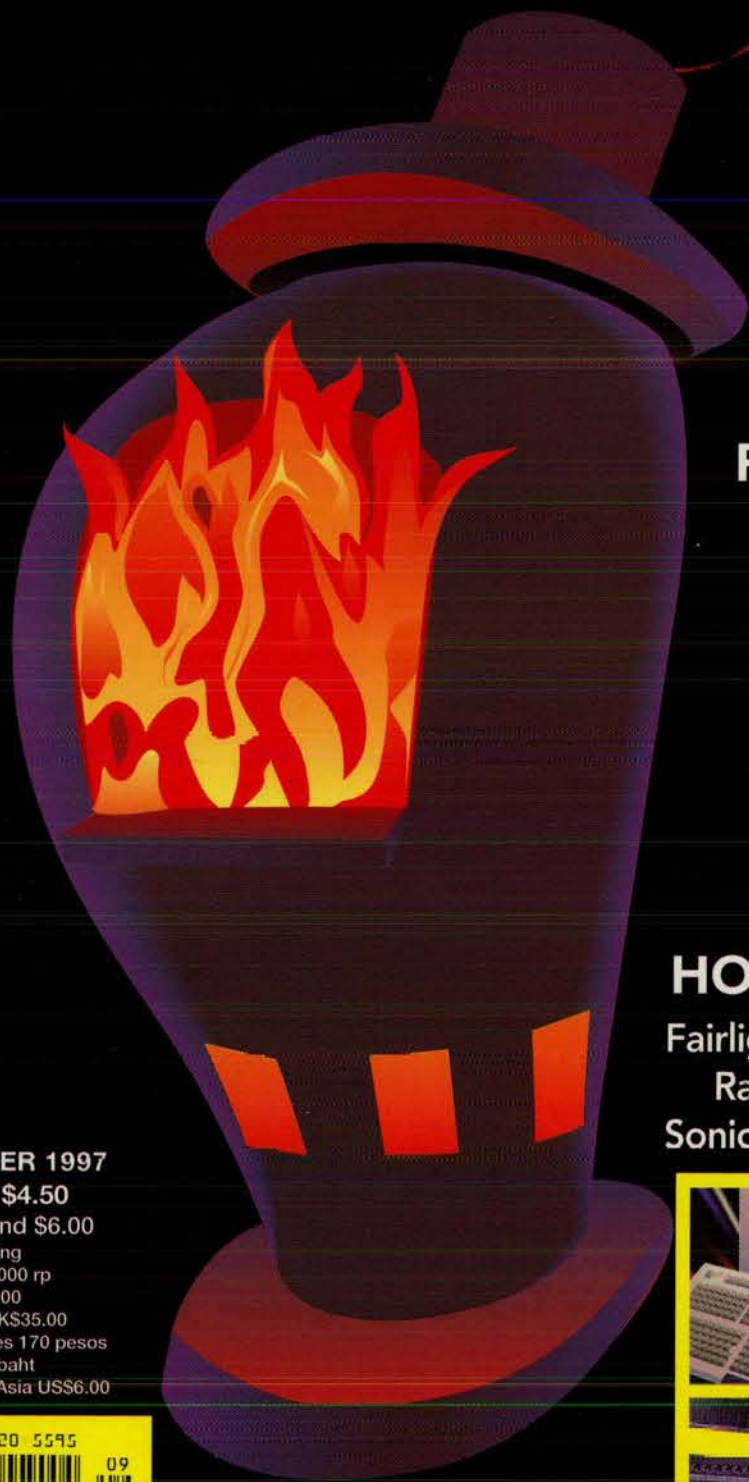


HOT STUDIO & REPLICATION PULL-OUT

# Connections

THE ENTERTAINMENT & TECHNOLOGY MONTHLY



# HOT

PAGES OF RAD NEW PRODUCTS, STRAIGHT FROM THE OVEN!

## HOT BUYERS GUIDE

Loudspeakers, Fog Machines

## HOT PRODUCT REVIEWS

Fairlight MFX3plus, EAW KF Speakers, Ramsa Digital Mixer, ProTools PT24, Sonic Solutions Studio, JEM HOT 2000



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# Connections™

NOVEMBER 1997. Number 49

THE (HOT) ENTERTAINMENT TECHNOLOGY MAGAZINE

## FAIRLIGHT DOMINATE AES

**New York:** Does the fact that FAIRLIGHT has opened an office in New York mean that this Australian firm have arrived? It's not the icon of the city that never sleeps, nor even the party they threw for 400 people - with the rented Wallaby lying in a cage and licking his nuts all night. It's all about what happened at the AES.

Three years ago I interviewed Fairlight chief David Hannay at the AES convention in San Francisco. At that time they were doing a lot of demo's and sure, selling some MFX systems. It looked good, but it was no secret that they were fiscally stretched to the limit. Hannay was a champ, he was by one part candid with me, the other coy. Yes Fairlight was talking equity partnerships with foreign firms; no, sister company Amber Technology wasn't being milked to fund development. Keep the story positive.....



Now that's academic, because on day two at AES New York, the firm had US\$600,000 worth of orders in the bag. Their stand was brassy, at 12 x 12m, and must have cost every cent of the profit  
(continued over)



## Ramsa deliver big heat for Yamaha

★ *New 24 bit digital mixer set to compete hard*

EXCLUSIVE FIRST LOOK FROM BUCK FREEMAN

**NEW YORK:** Hidden in a room at the Audio Engineering Society trade show was a hot new digital mixer from Ramsa which is set to seriously challenge Yamaha's 02R and 03D models. Scheduled for release before ENTECH, the new DA-7 offers 24 bit mixing. That's just for starters!

I attended a briefing on the DA-7 after convincing the Ramsa people that I would honour an embargo which expired on October 30th. I also managed to snag some pictures when left alone unexpectedly with the device, these may well be world scoop shots. Ramsa planned to distribute pictures to the media later on.

### OVERVIEW

This is a compact £2 inch cut, 8 bus digital mixer with full moving fader automation, snapshot recall of everything, and a lot of options

for connection to ADAT or Tascam or whomever's recording things you use. The 32 inputs are usually divided into 16 analogue and 16 digital on 'layers'. More on this shortly.

The pitch from Ramsa was very blunt.

"It sounds better than a Yamaha". They would say that.

"Also, people don't like scrolling through pages on screen to adjust the EQ". I put this to the test on the Ramsa: there are three rotary pots, giving true parametric equalisation, which means there is a cut and boost control, a frequency width 'Q' control and a frequency sweep or 'centre' control. Four buttons alongside change the band you're working with, so there is effectively a full four way parametric equaliser on each channel.

(continued page 12)

## Reviews:

### ProTools 24



**EAW**  
KF 650  
&  
KF850  
at work

### JEM HOT 2000 Hydrosonic fogger



## BONUS: PULL OUT STUDIO & REPLICATION DIRECTORY

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Subscriber rewards: see page 14



**John Lancken, with Trisha and Shaun Kerrigan**

## Fairlight (continued)

on those sales at the second day. Fairlight have over 100 units sold in Hollywood since April this year, and the New York office will stretch the market penetration. MFX3 is now claimed to be the standard platform for post production in the USA, a huge achievement for Fairlight. Offices are open in the UK, Germany, and France, with sales into Japan a very early export success.

An indication of their reach to the market is that Todd AO has purchased 45 machines to date - since way back in 1992.

The crew at Fairlight USA is headed by John Lancken, with former Melbourneite Shaun Kerrigan sales manager. Shaun recently became legally bound to his lady, Trisha, also from Melbourne. They did the deed (the legal one) in a chapel in Las Vegas.

Fairlight attracted large numbers to their demonstrations at AES, as indeed they do at all trade shows. People genuinely want to learn about MFX and Fame, and the legend has started to form. Fairlight make a strong case that they have an integrated, propri-

etary system which is inherently scalable. Audio is locked to vision, and processed through an intuitive user interface.

John Lancken explains: "Increasingly the audio post production industry is patterning itself on the MIS (Management Information Systems) model. The use of a Post Production facility in terms of the number of suites or workstations it has, but rather as an interconnected series of various aspects of a project - on an off-line ADR, dialogue editing, mixing and so on, all operating independently on their own schedules, with their own hierarchies of requirements, linked via the central server system".

Fairlight have an alliance with Techtronix allowing inter connectivity to their Lightworks video editing system, and via their Direct File Exchange Initiative, Ethernet 100 Base-T system connectivity and PCI card technology.

Whatever the future holds, Fairlight will carve out a growing slice of the audio workstation pie.

• See page 16: '24 bit Fairlight'

## ~INDUSTRY NEWS~

◆ **Yamaha Australia** raised profit this year on a lower turnover. Reporting 1997 fiscal year profit at \$2.68 million, (up from A\$2.63 million). Managing Director **Kevin Kobayashi** said the result was good, given that the business has been consolidated. Turnover fell to A\$49.08 million, down from A\$50 million the previous year. Yamaha project turnover of A\$53 million but lower profits of A\$2.6 million for next year.

◆ **Crest Audio** distribution in Australia has reverted to Produc-

tion Audio Services after a series of changes in the past two and a half years. Production Audio Services first lost the rights to distribute Crest amplifiers in April 1995 when Jands were named as Crest amplifier distributors for Australia. Then Production Audio Services regained distribution in tandem with Jands.

This difficult situation was resolved in September when Production Audio Services once again resumed exclusive distribution. **Graeme Stevenson** from PAS says they are delighted. Jands MD **Paul Mulholland** said: "The continued distribution of Crest was incompatible with the long term objectives of Jands". Jands took on Crest so as to cease manufacture of its own amplifiers, freeing up production capability for new dimmer rack products.

Jands are understood to be running at full manufacturing capacity, so return to local manufacture of amplifiers is not currently an option.

◆ **Gearhouse** has acquired Air Programmes International (API), the Adelaide AV products distributor, and formed Gearhouse Systems Pty Ltd. API general manager **Ron Boyes** is the Managing Director of Gearhouse Systems, who now plan operations in other cities.

◆ **Australian Audio Supplies** has appointed **Terry Memory** as National Sales Manager. Terry comes with a studio engineering background.

◆ **Acoustic Technologies** have opened a second hand section on their internet site to clear trade-ins from dealers. Go have a look: [www.aucoustic-tech.com.au](http://www.aucoustic-tech.com.au)

## TOOLTIME

The Leatherman Super Tool is great for leather wimmen too. Tech's everywhere have been discovering this thing, which as the picture proves is truly a combo tool.



• Priced at **\$A149**, from Connections: 1-800-635-514.

(Warning: we consider this tool is not suitable for musicians!)

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## Stevie Wonder delights at AES

By Julius Grafton

I know what a New York Police uniform looks like, but the monster bearing down on me at AES wore a uniform with a tin badge like none I have seen yet. He speared the crowded aisle in two, I started walking quickly backward to see why. Two smaller but equally determined minds followed flanking the music industry god who is Stevie Wonder.

Looking back it was insane, but my reflex action was to dig into the backpack for the Nikon.

By this time we are in the foyer at the Javitz Centre, and I'm trying to walk backwards, while holding an open backpack and aim a Nikon.

The entourage is pulling a great deal of attention as it heads at great speed for the escalator. The crowd are AES people, and so typically of course this means audio trade. They are very knowledgeable of Stevie Wonder and many know he is a regular attendee at AES in the USA. He delights many by singing in different booths, trying out a lot of new products.

This crowd are also fairly familiar and at ease with celebrity recording artists, and here they see this idiot with a big PRESS badge trying to take Mr Wonder's photograph. The Press are on the nose. Especially any taking photographs.

Needless to say the big leader catches up with my clumsy backward pirouetting ballet and brushes me lightly aside. My grasp on the backpack fails and all a days paperwork, press releases, show guides, batteries, pocket tape machine, lens cap, film rolls, cards and stuff is strewn stage left on the tile floor.

Mr Wonder and mirrors sweep past as I shoot my one shot, glued to the spot where all my stuff lies - as the crowd collectively transform their gentle appreciation of the glimpse of Mr Wonder into irrevocable and group rage at the turkey paparazzi who got in his way! It's me.

The limo is thankfully graceful in departing and so the mass is distracted. I slide out the side door.

> **Giving a break. See p. 14**

## ICIA opens in Australia

"I urge consulting engineers get involved" says **Peter Blackmore** (pictured), President of the new Australian arm of the ICIA. Best known for their tradeshow InfoComm, ICIA also host an educational institute. One such institute session is scheduled for Sydney early next year. ICIA is a peak industry body for the audio visual and visual communication industry. Details from Peter's firm, AVDEC. Call (03) 9885-4833



## Crestron relaunch in Aus



Michael Rutledge, Randy Klein and Rosita Gisy

Crestron relaunched their control products in Australia recently. "We haven't had the right partners here", vice president Randy Klein told an audience of consultants in Sydney. "Crestron Australia doesn't exist, there is no affiliation whatsoever, it ceases to exist immediately" he asserted.

The launch was arranged by Soundcorp, the new Crestron distributor in Australia. "They offer a great reputation and experience" said Klein. "We are here for the long haul".

Crestron enjoys considerable market penetration against competitor AMX in most markets, and leads the market in some. But in Australia Crestron has lagged, according to Klein.

Soundcorp have established a Sydney office, headed by Rosita Gisy who formerly worked for Crestron in Germany.

Soundcorp manager Michael Lasa was firm that Soundcorp was separate to Rutledge Engineering, themselves a major user of Crestron type products. • -JG



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# road tested



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This established line of affordable amplifiers delivers superb, undistorted sound consistently - even into 2 ohm loads - thanks to Crest's legendary "overbuilt" power supply.

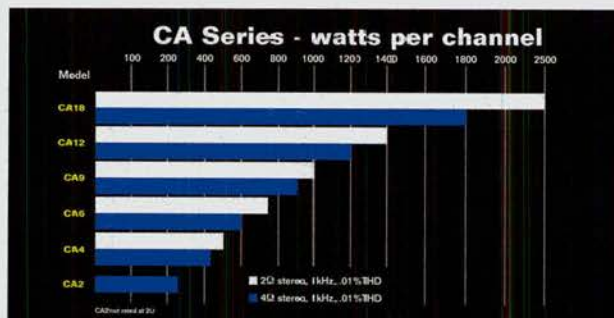
CA's keep their cool with the industry's most effective thermal management system, and provide fail-safe operation with Crest's unique TourClass® protection circuits. Every amplifier is subjected to the most rigorous quality control and testing procedures.

To top it all off, all CA amplifiers come with a five year warranty at no extra charge.

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**Crest Audio Web Site:** <http://www.crestaudio.com>

● **Neuman** have a very cool new condenser mic pitched direct at project studios (read: lower cost). The TLM193 has a Cardioid pattern similar to the U87, and is projected to sell at less than A\$1500.

● **TubeTech** has been added to the range handled in Australia by Amber Technology. This Danish firm make valve studio processing gear that looks way cool (as the trend) and have some models based on Pultec



● In the weird effects dept, **TC Electronics** Fireworks takes line honours.

● Talking about cheaper studio microphones, **AKG** have a new tube mic - the AKG Solid Tube Microphone (pictured left). It has a single polar pattern, large diaphragm, and a bass attenuation switch with a 20dB pad. Power supply is outboard, it

comes with a shock mount and a push button ground lift on the power supply. It should sell for less than A\$2000, and makes a good alternative to those dubious Chinese origin copy mics.

● **Event** attracted considerable interest with their Layla recording product, which is however still some time away. It got a tongue in cheek 'Foreplay' award from journalist Craig Anderton in the AES show daily, along with Tascam for their -almost here- digital mixer. Anderton went on to make a point that many manu-

facturers were promising to ship products 'soon' which had been 'released' at the NAMM show back in January. Vapourware vendors he says, and if they ran a magazine then this would be the June 1996 issue!

● **Roland** had a new baby, the VS-840 tucked away - I couldn't see it - which promises to bring recording to the masses. As if 30,000 VS 880 users were not enough. The Roland stand was very large and a lot of people were checking out new options and expansions for the (ENTECH award winning) VS-880.

● Weird noise dept: **Arboretum Systems**/U&I Software showed the MetSynth software synth, it had a graphic screen that showed you where the sound was heading while it went there. Very acid trip so sure to find flavour with the sample heads and DJs.

● Some years ago a major lighting manufacturer invented a new console with these bizarre tank tread escalator fader things that were lit from underneath. They looked great but didn't work very well for lighting. Now we know where the excess inventory went, because **Penny & Giles** are using them in their DC-16 digital controller (pictured). And, it looks great.



● **Mackie** have cut a deal with RCF (Radio Cine Furniture S.P.A.), the well known and well regarded Italian loudspeaker firm, to buy components. Expect Mackie PA speaker cabinets and larger studio monitors sometime soon.

>continues

## Coming in Connections:

# WHO'S WHO

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### February

**Hire and Production  
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## 1. FBX/Parametric EQ – List View

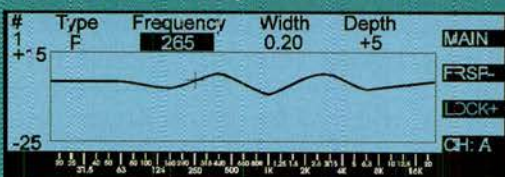
Tabular editing of 12 digital filters: switchable to parametric, fixed FEX, or dynamic FBX. Patented,

#	Type	Frequency	Width	Depth
1	P	265	0.20	+5
2	=	837	0.10	-3
3	=	1242	0.10	-6
4	C	C	0.10	-0

adaptive FBX filters find & eliminate feedback, providing more gain, improved clarity, and more wireless mic mobility. Adjustable FBX sensitivity and tracking.

## 2. FBX/Parametric EQ – Graphic Edit View

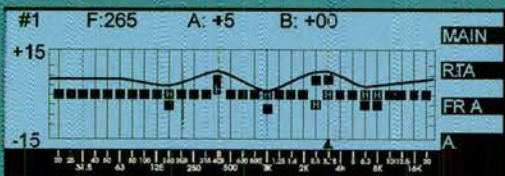
Click & Drag graphic editing of parametric filters; grab-a-filter or select any point on curve to edit using



cursor keys & datawheel. Shows response curve as you sweep filter center frequency, width, or depth. Filter ranges: 20 to 20kHz, -12 to -30 dB, 1/100 to one octave.

## 3. Graphic EQ

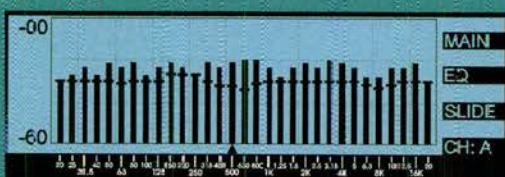
Edit 31 bands per channel simultaneously on same screen. View actual frequency response



curve as you adjust filters. Edit channels individually or LINK them together. Edit one channel and COPY it to the other. View POWER-Q curves or room curves.

## 4. Real-Time Analyzer

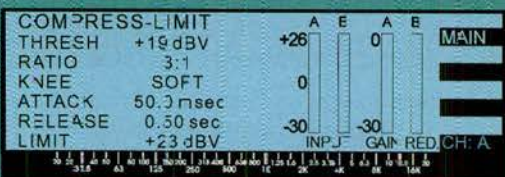
31-Band, digital, filter-based, 1/3 octave IEC. Choose A, B, or C weighting; absolute-normalized display,



slow/fast response; pink or white noise generator. Superimpose graphic EQ on FTA display\*\* for precise viewing and editing of frequency response.

## 5/6. Compressor-Limiter/Gate

Control compressor threshold, limiter threshold, compression ratio, attack & release time, gain and peak limit for each channel. View input and output levels, and gain reduction. Adjust gate threshold, attack, release



## 7. Digital Delay

Two 1x1 digital delays with 20 microsecond resolution. Input in feet, meters or seconds.

	DIGITAL DELAY
mSec	1.5 (1.5 - 50.0)
Feet	1.7 (1.7 - 56.7)
Meter	0.5 (0.5 - 16.7)

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\*patent pending



\*FBX and FBX Feedback Exterminator are registered trademarks of Sabine, Inc., and are the brand names of lines of automatic feedback controllers. Covered by U.S. Patent No. 5,545,665; Australian Patent No. 653,736; and Canadian Patent No. 2,066,662-2. Other patents pending.

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 HOBART: Tel: (03) 6228 6373 Fax: (03) 6278 1063  
 NEW ZEALAND: Tel: (03) 415 9426 Fax: (09) 415 9864

● **Sonic Solutions** announced the formation of the Advanced Audio Alliance, a group of leading record companies and studios who are collaborating with Sonic to develop tools and techniques for preparing content for DVD. They released SonicStudio DVD at AES as well, said to be the first digital audio workstation designed specifically to premaster audio for DVD. Wherever you looked at AES you saw Sonic Solutions / DVD - they have taken the high ground with this.

● **Neutrik** have a new XLR type connector, Eazycon - it is easy, extremely fast to assemble, has solder in place and crimps to the shield on your cable. Gold plated connectors and less costly to buy. This sounds good!

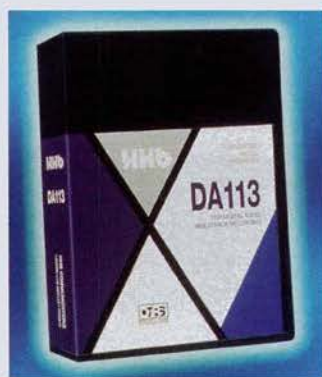
● **National SemiConductor** released a system on a chip, meaning a preamp with 3D sound on a microchip. Expect the LM4832 to turn up inside powered speaker boxes some year soon, giving designers the ability to adjust volume and EQ remotely. Australian manufacturer Creative Audio have taken this concept a step further with a new product (heard about, not seen at AES) which is a powered loudspeaker with onboard EQ, time alignment, time delay and all things processed remotely. The contractors friend!

● **DigiTech** showed the new VCS-1 studio dynamics processor, which squeezes two channels of 12AX7A tubes, full compression, de-essing, noise gating and peak limiting into a stylish 2RU chassis. It joins the VIP-1 dual tube preamp / EQ / Converter. These industrial strength valve devices hit the market at under A\$2000 and have some nice features.



● **Jim Oram** is a famous UK mixing console designer who has delivered some horrid looking products in the past (SoundTech Panorama was one) but he keeps coming back for more. This time out he has done something clever which other designers dream

about but then wake in fear thinking about the cost. The S48 BLISS is a no compromise, digital / analogue high end mixing console. Take no prisoners, this is a mixer where each channel strip is totally fully featured and has its own CPU for recall functions. So the audio stays analogue (like the Euphonix approach) but the desk operation is digitally controlled for instant recall. Unlike any other desk, this one looks and feels like a normal, albeit sophisticated, studio console. All the knobs and buttons are there. The dials have an LED ring showing status. Expensive.



● **HBB** continued to roll out new recording audio products, with a new DTRS 8 track tape - the DA113, which adds to their media range nicely (above). Their Genex GX8000 24 bit 96kHz hard disk recorder now has links to SADiE Octavia and SADiE digital audio workstations too.

● **JBL** have flagged a new range of venue and contractor loudspeakers, using a new compression driver, the 2447 with a 1.5" exit throat. The new range has a new finish which is very attractive and durable, and a great mix of models. Australian importer Jands are highly excited, saying

that the new products give them leverage like never before enjoyed with JBL. They are said to be extremely cost competitive and pitched directly at the mass market for installations and rentals, well below the Array series. Expect an ENTECH launch. -JG



**Hartley Peavey** is, of course, The Man. He told me in NYC that the idea behind his FUGE display at AES was to wave the company flag, not to write orders.

He was also seeking to better promote Media Matrix here in the USA, where it is selling well but is not as accepted as it is in Asia. "Audio Telex are kicking arse with Media Matrix" he said, referring

to sales down in Australia. Elsewhere in the region Media Matrix sells very well, "people in Asia are more receptive."

Media Matrix is a PC based system which handles all signal processing - before the amplifier. The ability to re-configure and re-part a system on screen makes it irresistible to consultants and system integrators. -Buck Freeman

## Steinberg harness SGI



**Steinberg** have previewed a new audio production approach which utilises Silicon Graphics computers, the most desirable of all workstations.

Called Nuendo, the Steinberg software is intended for professional post production, and utilising the SG workstation produces some staggering possibilities.

Standard on the Silicon Graphics Octane workstation is a 8

channel ADAT optical connection, for example.

Additional analogue and digital I/O's are standard, and extra audio cards can of course be optioned. SGI allows audio processing to 24 bits and at up to 96kHz sample rate.

Nuendo combines its Virtual Studio Technology with real time effects, with processing done in real time. Audio processing is performed entirely with floating point accuracy.

Silicon Graphics workstations are used in high end graphics, video and visual simulation fields, and utilise a MIPS R10000 processor. A variety of models from the Octane up are available. • -3F

**Brands and Distributors- HUGE Industry Directory next month!**

# UNFLINCHING ACCURACY AT AN AFFORDABLE PRICE

## INTRODUCING THE NEW MACKIE HR824 ACTIVE MONITOR SYSTEM

If you've been trusting the quality of your creative product to passive monitors, there's an astonishing revelation waiting for you. In our opinion, the active, bi-amplified HR824 is the most accurate near-field monitor available — so accurate that it essentially has no "sound" of its own. Rather, Mackie Designs' High Resolution Series™ HR824 is the first small monitor with power response so flat that it can serve as a completely neutral conductor for whatever signal you send it.



Real-time FFT laser vibrometry helped smooth and extend the HR824's treble transducer characteristics

Imaging and definition are compromised. The "sweet spot" gets very small.



Like biamped speakers, wave guides aren't a new concept. But it takes optimized internal electronics and a systems

approach to make them work in near-field applications.

The HR824's wave guide (Fig. B) maximizes dispersion, time aligns the acoustic center of the HF transducer to the LF transducer's center, and avoids enclosure diffraction (notice that the monitor's face is



perfectly smooth.) The exponential guide also increases low treble sensitivity, enabling the HF transducer to handle more power and produce flat response at high SPLs.

### Clean, articulated bass

Seasoned recording engineers can't believe the HR824's controlled low bass extension. They hear low frequency accuracy that simply can't be achieved with passive speakers using external amplifiers. Why?

First, the HR824's FR Series 150-watt bass amplifier is directly coupled in a servo loop to the 8.75-inch mineral-filled polypropylene low frequency transducer.

It constantly monitors the LF unit's motion parameters and applies appropriate control and damping. An oversized magnet structure and extruding voice coil lets the woofer achieve over 16 mm of cone excursion. Bass notes start and stop instantly, without "tubiness."

Second, the HR824's low frequency driver is coupled to a pair of aluminum mass-loaded, acoustic-insulated 6.5-inch passive drivers. These ultra-rigid drivers eliminate problems like vent noise, power compression, and low frequency distortion — and couple much more effectively with the control room's air mass. They achieve the equivalent radiating area of a 12-inch woofer cone, allowing the HR824 to deliver FLAT response to 42Hz with a 38Hz, 3dB-down point.

Third, the woofer enclosure is air-spaced with high-density adiabatic foam. It damps internal midrange reflections so they can't bleed back through the LF

cone and reach your ears. The typical problem of small-monitor midrange "boxiness" is eliminated.

### A true pistonic high-frequency radiator

We scoured the earth for the finest high frequency transducers and then subjected them to rigorous evaluation. One test, scanning laser vibrometry, gives a true picture of surface vibration patterns. Two test results are shown in the upper right hand corner of this ad.



The Mackie HR824 Active Monitor  $\pm 1.5$ dB from 42 to 20kHz

Figure C is a conventional fabric cone tweeter in motion. You needn't be an acoustic engineer to see that the cone is NOT behaving as a true piston.

Figure D shows our High Resolution metal alloy dome at the same frequency. It acts as a rigid piston up to 22kHz, delivering pristine, uncolored treble output that reproduces exactly what you're recording.

### Individually optimized

We precisely match each transducer's actual output via electronic adjustments. During final assembly, each HR824 is carefully hand-trimmed to  $\pm 1.5$ dB, 42Hz-20kHz. As proof, each monitor comes certified with its own serialized, guaranteed frequency response printout.

The HR824's front board has "ad used" edges to further eliminate diffraction; an "H" brace bisects the enclosure for extra rigidity.

Mackie is one of the few active monitor

Fig. C: Uneven fabric dome tweeter motion distorts high frequencies.



Fig. D: HR824 alloy dome's uniform, accurate piston motion.



manufacturers that also has experience building stand-alone professional power amps. Our HR824 employs two smaller versions of our FR Series M-1400 power amplifier — 100 watts (with 150W<sup>W</sup> bursts) for high frequencies, and 150 watts (200W peak output) for low frequencies. Both amps make use of high-speed, latch-proof Fast Recovery design using extremely low negative feedback.

### Tailor them to your space

Because control rooms come in all shapes, sizes and cubic volumes, each HR824 has a three-position Low Frequency Acoustic Space control. It maintains flat bass response whether you place your monitors away from walls (whole space), against the wall (half space) or in corners (quarter space). A low frequency Roll-Off switch at 80Hz lets you emulate small home stereo speakers or popular small studio monitors.

### Confront reality at your Mackie Designs Dealer

We've made some pretty audacious claims in this ad. But hearing is believing. So bring your favorite demo material and put our High Resolution Series monitors through their paces.

If you've never experienced active monitors before, you're going to love the unflinching accuracy of Mackie Designs' HR824s.

If you've priced other 2-way active monitors, you're going to love the HR824's price and accuracy.

### \$2995 A PAIR Recommended Retail Price

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### Science, not snake oil

Internally-biamped, servo-controlled speakers aren't a new concept. But to keep the cost of such monitors reasonable, it's taken advances in measurement instrumentation, transducers, and electronics technology. In developing the HR Series, Mackie Designs sought out the most talented acoustic engineers and then made an enormous commitment to exotic technology. The HR824 is the result of painstaking research and money-is-no-object components, not to mention thousands of hours of listening tests and tens of thousands of dollars in tooling.

### Flat response... on or off axis

One of the first things you notice about the HR824 is the gigantic "sweet spot." The detailed sound field stays with you as you move back and forth across the console — and extends far enough behind you that musicians and producers can hear the same accurate playback.

The reason is our proprietary exponential high frequency wave guide. Without it, a monitor speaker tends to project critical high frequencies in a narrow beam (Fig. A) — while creating undesirable edge diffraction as sound waves interact with the edges of the speaker.



HR824 Active Monitors accept balanced or unbalanced G and XLR inputs. Jacks & removable IEC power cord face

downward so that the speaker can be placed close to rear wall surfaces.

# MACKIE™

Australian Audio Supplies ☎ (02) 4388 4666 ♥ (02) 4388 4688 ■ E-mail ✉ sales@ausaudio.com.au

Write in Reader Service Number: 119

# Ramsa DA7 Digital Mixer

(continued from page 3)

I hit the 'select' button on channel 11, then press the top of one of the EQ controls. Viola- the screen display shows me the EQ! To change channels I just hit another 'select' button. Likewise the onboard dynamics - there is a deep range of compression, limiting and effectors which can be used on every channel, and the setup for each is just as simple.

## CHANNEL LAYERS

You can flip (that is a term we Americans use, meaning 'turn' or 'switch') between layers on each channel fader. This means fader one may control analogue input one, or digital input 1 (channel 17).

You may of course switch layers globally too.

In ordinary use Layer 1 would let the 16 channel faders to control 16 analogue audio inputs. Layer 2 would control channels 17-32, being the 16 digital inputs. Remember, this is done using one set of 16 motorised faders.

There is a third layer, for auxiliary groups, sends, returns and the 8 mix busses.

Best of all, there is a final fourth layer which is clever - it is user definable. If you want one channel to be a bus, one to be a fader or even to set up a midi fader, then you can do that.

You could, I am told, use the mixer as a front end for Pro Tools, if you set it up with 16 midi faders. Still with 24 bit A/D and D/A converters on the audio side!

## MOVING FADERS

Panasonic are the Japanese conglomerate who make Ramsa. They manufacture six different kinds of moving faders at present, I am told. The representative who briefed me was keen to make a statement about this:

"The cheapest model fader is the one you'll find on our competitors model, the one that chatters and makes so much noise. This (the fader on the DA7) is the most expensive, designed for this specific model. It feels like an expensive fader". Believe it or not.

Cheeky, huh?

## OUTPUTS

There are 8 individual bus outs, then left, right, direct and surround sound capability on the board. There are 6 auxiliary sends, all groupable in pairs- stereo or mono. Aux 1 and 2 have digital SP/DIF input and output.

Midi machine control is supplied. JL cooper are developing an automation package for Mac or Windows. This will be compre-



hensive, with track arm, disarm and control over everything.

On the back panel are four card slots. One is dedicated for a SMPTE time code card which is optional. The other 3 can be used for ADAT, T/Diff, AES/EBU, SP/DIF and Analogue cards.

This is where Ramsa have been clever because you could configure the console for 8 analogue inputs and 24 digital - by altering the mix of cards! A Tancern card will allow 2 consoles to function as one large control surface, everything being bi-directional on the consoles. Or use an AES-EBU card which would allow digital inputs across the board.

## FINAL WORDS

Naturally this is a prototype, but so too there were prototypes for everything we use in our daily lives. It's useful to know Ramsa have in fact built several very large digital mixing systems for theatre use in Japan, and do indeed have an excellent reputation with their analogue (conventional) mixers.

Indeed they have a respectable market share with their large concert mixing consoles, and more than several of these are used for stage monitors by leading production firms in this part of the world.

This mixer, if it works as promised, will erode the business Yamaha are building with the 03D, and spill over against 02R sales. At the top end, expect the new Mackie mixer to eat 02R sales also.

Price points are not firmly established, but expect the desk to sell at around A\$12,500. Delivery is expected early next year, which is not that far away - perhaps even an ENTECH debut.

**Australia:** • Ramsa audio, +61 2 9477-7377 **NZ:** Fisher & Paykel. **Sing** Panasonic Singapore. **Hong Kong:** Sheung Hing Technology

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# EXTRA SENSORY PERFECTION

The Wavefront 8 Compact - conventional? Forget it! If you want convention, you'll need to look elsewhere. With constructive coupling, true 55° constant directivity and distortion free mid/highs from our unique toroidal technology 6.5" cone driver, the Wavefront 8 Compact is anything but conventional.

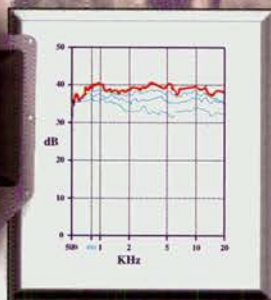
In fact, when we looked at the way most systems are designed one thing always stood out - they were very conventional, or in other words - ordinary! That's why no one arena system could really 'cut' it - until now.

The Wavefront 8 Compact incorporates unconventional technical advances in an extremely compact and flexible package. It can be stacked or arrayed to achieve both short and long throw for any size of venue. When flown in an array, its inversion capability together with constructive coupling of adjacent array elements enables it to throw further than conventional dedicated long-throw systems.

Coupled with the powerful impact of the ground stacked WSX horn-loaded sub-bass, the Compact leaps way ahead of its conventional competition in terms of sheer purity, and power. Until now, it has been impossible to combine such competing musical qualities as warmth with clarity or high sound levels with transparency. Martin Audio offers a new approach to eliminate these old compromises.

The combined high-mid and high section maintains true constant dispersion over its 55° horizontal coverage angle, as shown here in the off-axis response curve - ensuring smooth transition to the next cabinet in the array without beaming.

Furthermore, the toroidal technology loading of the 6.5" cone driver increases its efficiency whilst employing a much lower compression ratio than that of the more commonly used 2" exit compression drivers - so the W8 Compact does not exhibit the "O1" factor or "shout" produced by the high distortion levels inherent in these traditionally used devices. This means it can be driven harder and will run cooler at much higher levels than conventional systems.



For more information on how to experience less of the "O1" contact your local Martin Audio distributor.

## Wavefront 8C

Martin Audio Engineering Pty. Limited  
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## EAW launch KF900 series, ultra high Q PA

The KF 900 series is the state of the art for EAW - Eastern Acoustic Works, a major USA based loudspeaker manufacturer. This is project rather than a product, because KF 900 entails many parts which form system.

At this time there are four speaker cabinets. They are referred to as modules and comprise a long throw high frequency module; downfill high frequency module; mid frequency module and a low frequency module.

All together you start with a KF 900 array of flown loudspeakers in columns. Each column provides coverage of 30° horizontal, a 'wedge' of audience. The maximum sound pressure level (volume) to the farthest listening area determines the number of modules in each column. Are you with me?

Once established the array is then told what to do by a computer, which is a major part of EAW's approach to the KF-900. They call it PPST processing, or for you:

Phased Point Source Technology. This is where the theory and science get thick

The system controller is thus called the MX9000, and it sits between the mixing console and the amplifiers - and does everything required, including system equalisation. It is a digital controller, and EAW are at pains to point out it works at 32 bits and utilises a whopping processor. Because some previous generation digital system processors have slowed down the sound, as will always happen in digital audio. After all, the audio needs to get 'digitised', yes?

EAW recommend the QSC RAVE ethernet audio system for remote operation of the MX 9000 if required. Otherwise, hard wired analogue signals can be run out of the MX9000 to your amps, and

conversely from your mixer.

Out at the speaker boxes, each is shaped the same but loaded differently. Check out the diagram at left: The pair of KF930's at top are each packed with four 15" woofers.

The KF920 have three mid drivers, on three horn loaded flairs, again vertically stacked.

Third type in the stack is the KF910 with five compression drivers on board. That is it, one box with five drivers and five horns, vertically stacked. It is the third kind from the top.

The downfill module (at the bottom, of course) is called the KF911, and it has just two h/f horns on board. Very cleverly EAW have used a sweeping downwards horn mouth and arranged the lower driver to bounce off the upper wall of its horn. This gets to the area almost under the front of the cabinet without sawing a chunk off the bottom.

The promise is that here you

have a very tight dispersion system that is digitally controlled. The SPL and the long range projection are stated to be the best yet achieved by EAW, as are the overall response, balance and 'sound' of the system.

It's a major league PA, that is certain, and we look forward to hearing it sometime soon.

• **Australia: Production Audio Services, +61 3 9415-1585.**



## Meyer MSL 6 powered PA

First shown at AES, the MSL 6 (right) is intended for large scale vocal public address as a stand alone system, or for musical sound reproduction in combination with Meyer sub woofers.

It has an extremely tight 25° vertical and 30° horizontal dispersion pattern, and is loaded with three separate high frequency horns. Each high frequency horn is powered by a 2" throat, 4" diaphragm MS-2001A compression driver.

As with all recent Meyer releases, the MSL 6 is self powered - the amplifiers are built in. Mains and line level signal are plugged directly in.

The outside high frequency horns are powered separately to the centre horn, with separate control electronics. This has to do with the horizontal dispersion. There

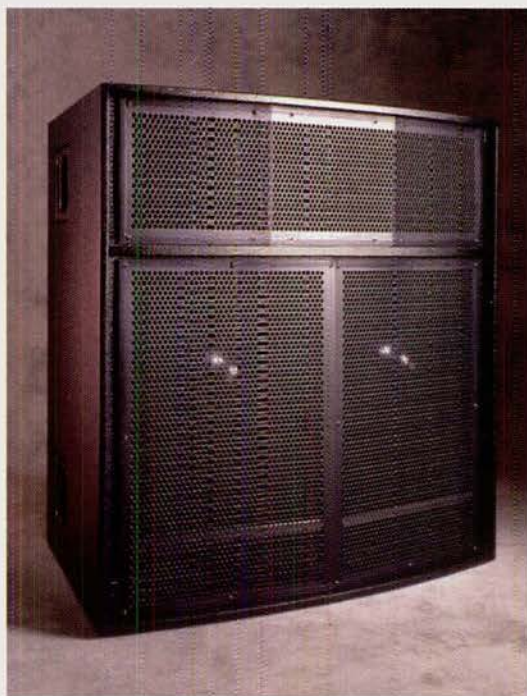
are 2 x 12" MS-12 speakers loaded on proprietary (Meyer designed) midrange horns beneath the high frequency section.

The internal amplifiers are Mosfet type, the mains draw is 7 amps continuous or 13a peak burst. The power supply is auto voltage sensing.

Frequency response is plus or minus 4dB 65Hz to 16kHz, maximum SPL is a staggering 145dB at one metre. The 30° dispersion and the tight arraying made possible by the rigging system means each additional MSL6 packed horizontally into an array increases horizontal dispersion by 30° - to an obvious maximum horizontal array of 12 units for 360° coverage.

The MSL 6 is compatible with Meyer's RMS; remote monitoring system, and the cabinet weighs in at 216kg.

• **In Australia contact System Sound +61 3 9529-7755 or Richardson and Devine, +61 7 3252-4433**



**Fairlight demo  
24 bit audio**

NEW YORK: Early this year we reported Fairlight had promised 24 bit audio for their MFX and FAME systems this year, and at AES they delivered it.

"We already implement 24 bit audio on digital inputs and outputs", says R&D chief Andrew Bell in a release provided at AES\*.

CEO (USA) John Lancken says the existing 40 bit structure employed by the FAME and MFX3 plus already allows for 24 bit I/O resolution to be implemented. 40 bit floating point processing is used in Timefx compression and expansion, real time crossfades and separate 4 band EQ on every clip, as well as automated track based EQ and dynamics in FAME. All word width formats including 16 - 24 bit audio are supported simultaneously. Mixed formats may exist within a project, and may be mixed, edited and cross faded transparently.

Lancken says existing FAME and MFX3 plus customers can upgrade easily and affordably so their systems can record and play 24 bit audio. • Julius Grafton

*\*I attempted to question Bell further on this, however he was dressed in a kangaroo suit and hopping around the aisle every time I saw him. Or maybe the actor in the suit had an Andrew Bell pass pinned on. I did see someone else with a technical query trying to get an answer from the fake marsupial, in vain.*

● **MFX IN USE, Page 36**

**Keep it simple!**

At trade shows like AES, the manufacturers usually have a press kit they will give us. Sometimes the releases inside bear little resemblance to the product they promote.

Most often the shame is that the PR flack has spent too much time listening to people within the company, and misses the whole thrust of the product. Often it would help if they would just tell us exactly at whom the product is directed!

**JBL show new midfield monitor**



NEW YORK: JBL were major players in main studio monitors for many years, until people turned away from big speakers because they built smaller rooms.

These days nearfield studio monitoring is standard, but getting more information is essential. Those little near field monitors were first supposed to supplement main monitors, not replace them outright.

Mastering engineers will tell you how they run a session tape and get a nice earth loop train or pane rumble, inaudible on a six inch speaker. Or the mix is

oversaturated in bottom end to compensate.

The new LSR32 marks JBL's return to monitoring for the masses, as this midfield design is sized 'right' for most facilities who are serious. It is a three way monitor with new loudspeaker technologies including a development called Linear Spatial Reference - or LSR, for short.

This is because every product designed in America needs an acronym. This magazine has ERO, which means 'editor raves on' But seriously - LSR makes perfect sense, because it offers a way to

measure loudspeaker data over a sphere which encompasses all energy released into a listening environment in every direction. Rather than just sweeping for response and curves on a single axis.

This has enabled JBL to claim extreme accuracy in the critical listening area, which is defined as with +/-15° vertical and +/- 30° horizontal of the mix position. Here JBL say the LSR offers a frequency response which is accurate to +/- 1.5dB.

LSR 32 is a three way monitor, loaded with a 12" neodymium woofer, a 5 inch mid and a 1" driver h/f device on a 60 x 100° horn. The woofer is crossover over at a low 250hz, and the mid and h/f devices are mounted on a cast aluminium sub baffle that can be rotated, providing horizontal or vertical placement, depending on your room layout.

Fourth order 24dB crossover slopes are achieved with an internal crossover, and the h/f level can be user adjusted above 4kHz. The LSR 32 is a good choice for new, higher dynamic range recording systems - and if you don't do it in 20 or 24 bits now you will soon. Because DVD is here. -JG

• **In Australia call Jands, +61 2 9582-0909.**

**Meyer HM-1S, powered studio monitor**



Earlier in the year Meyer Sound released a contracting speaker which featured a 7 inch cone driver with a concentrically mounted 1 inch soft dome high frequency

driver. Now they have a studio monitor version.

The HM-1S is self powered, again following a trend Meyer already established themselves. The philosophy is that every HM-1S worldwide will sound the same, given that external amplification is subject to so much variation in sound quality and also in power matching.

With internal amplification comes internal signal processing as well, or 'control electronics'. Essentially this comprises the active crossover for the high and low frequency drivers, frequency and phase response alignment circuitry, and most importantly -

driver protection voltage limiters.

There is a speaker output for an optional Meyer subwoofer as well, one subwoofer could be driven by two HM-1S monitors with summed mono amplifier feed from both.

Mains power to the unit comes in at 48 volts, so a Meyer mains power supply is required, which can be placed well away from recording equipment.

The cabinet finish is oak veneer, in black or natural wood. The speaker drivers are magnetically shielded.

• **Australia: System Sound +61 3 9529-7755 or Richardson and Devine, +61 7 3252-4433**

# The BLUE reward....

From the beginning you've spent your life, your energy and your career producing the finest audio you've known how. It's time you rewarded yourself with the tools necessary to produce the masterpieces experience tells you're capable of: The new dbx Blue Series.



## Blue Velvet: The 160S Compressor/Limiter

The 160S follows in the tradition of the industry-standard 160. The signal paths consist of high-precision input stages followed by the world's widest dynamic range (127db) voltage controlled amplifier - the dbx V8 VCA - and output stages with

precise phase alignment of all audio frequencies. Both hard-knee and classic dbx OverEasy® compression is featured. Digital Type IV Analog to digital conversion and analog extra high drive output cards are available as additional output options.



The new dbx V8 is based on the David Blackmer deci-linear VCA. Featuring 127db dynamic range and sounds very transparent.



## Electric Blue: The 786 Mic Pre

The 786 Solid State Mic Pre-Amp is designed to provide the purest reproduction of the microphone source as is electronically possible.

Featuring a dynamic range of 130db and Signal to Noise of 104dB, +48v phantom

power, 20db pad, phase invert and "Spectrum" a unique variable equalisation circuit within the mic pre-amp which enhances the high frequency spectral content of the signal, while maintaining phase integrity.



Classic, custom-designed, backlit VU's provide highly visible indication of all critical level functions



## True Blue: The 704 A/D Converter

Nick named the "Bad Boy", the 704 uses dbx's patent pending Type IV conversion system, with equivalent performance of 27 bit, for the widest dynamic range and most natural analog sounding conversion available. 8, 16, 20 or 24 bit output is offered,

and can be dithered and noise shaped using the numerous word reduction and preset and user-definable noise shaping options. AES/EBU, S/PDIF inputs and outputs as well as ADAT and TDIF outputs are fitted as standard.



For more detailed information on the Blue Series from dbx, call Jands now on (02) 9582 0909

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**NEW**



*a touch of excellence*

**from D.A.S Audio: the DYNAMIC DS-15 SERIES**



Designed with the aid of the most advanced computer moulding programs, the DS-15 is the latest achievement from DAS. This unit features a 15" low frequency transducer with a 3" high efficiency compression driver and CD horn assembly.

The DS-15 incorporates a new wider angle diffraction horn, the crossover introduces a driver protection circuitry which will be used in all future DAS sound systems where a 1" compression driver reproduces mid-high range frequencies.

The DS-15 is rated at 300 watts RMS into 8 ohms, and the sensitivity is 100dB (1W/1M). These beautifully designed high pressure injection moulded loudspeakers achieve superior acoustic properties, available in either white or black. The DS-15 series from DAS really are a touch of excellence.

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Write in Reader Service Number: 144



This quality line-up is just part of the great new range of powered and non-powered mixers from Inter-M. Featured here from left the CA8220 8/6 ch. 200w + 200w rack mount mixer; the CMX 2464 24 ch. 4 bus; the CMX 1642 16 ch. 2 bus CMX series mixers; the PC 1225 12 ch. 250w + 250w power mixer with digital sound processor; and the MX 1242 12 ch. rack mount mixer.

*Quality = Mix*

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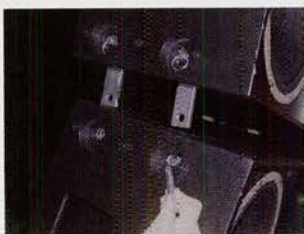
## Apogee strengthen amp range



Apogee Sound are in the top five loudspeaker system manufacturers in the USA, but unlike most of their competition they also make amplifiers.

Apogee introduced an amplifier with a digital controlled front end several years ago (DA series amps), and have refined and expanded the range since. The benefit is that software developed by Apogee can monitor and control their amplifiers. The latest version, Ampnet 98 was released in New York last month.

Barry Grzebnik gave me the rundown. Ampnet can be run from a laptop, and connects to each amp via a simple twisted pair cable. It reads all amp operating parameters and now has built in impedance load sensing. This is beneficial in fire and evacuation public address systems where some jurisdictions lay down strict guidelines for new public spaces. Germany and Singapore, for example, require that the evac system be separate to the normal PA, and impedance load monitoring will show that an announcement or tone is actually being transmitted from an amplifier.



fier.

It is the increase in amplifier models that Ampnet will now control that is the main improvement in Ampnet 98. "Apogee are now the only manufacturer who can control every amp in a building from their software" says Barry.

The Apogee MA series multi channel contractor amplifier is now controllable by Ampnet '98, an MA modular amp provides 8 x 200 watts, and come with various options like battery backup and 70/100v line

classis for transformer'd speakers.

SA and CA model Apogee amps can also be upgraded for Ampnet control.

As to the trend by Meyer towards putting the amplifier into the speaker box: "The old way is the best way" says Barry. "I'd be worried about putting an amp into a subwoofer, due vibration".

### • Apogee fly the Spherical Array kite

It was there, hung in a vertical array, but this is not a production loudspeaker system from Apogee. Yet. It is pictured above.

Looking suspiciously like a V-Disc array (see Connections August for info on this), the Apogee speaker cabinets had a very cool and quick rigging innovation, also pictured above. It works for single vertical arrays only, however.

• In Australia call **ESA Audio**, +61 3 9562-4605, elsewhere call **Apogee Sound Inc** +1 707 778-8887

## Community vent drivers

### Fan forced cooling for woofers and horns? Why didn't someone think of this long ago!

Community Professional Loudspeakers have introduced a concert PA system with a really innovative idea. Each component is fan cooled. The cabinet has a fan unit in the rear, with air ducts running straight into the back of the speaker cone drivers and the high frequency compression drivers.

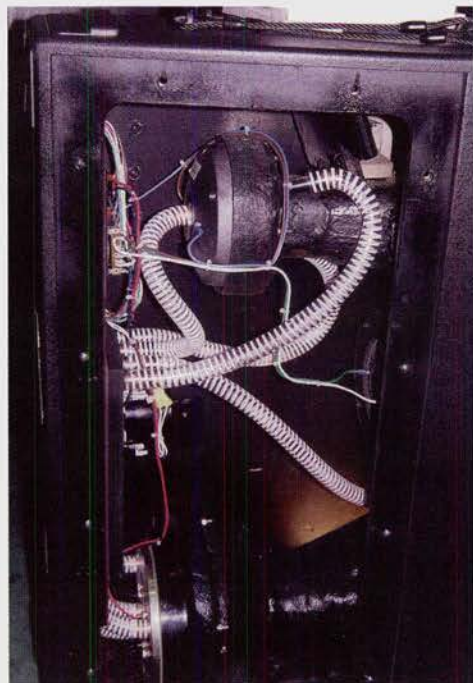
The Airforce concert system comprises five cabinets, with a subwoofer (loaded with 3 x 15"), and a trio of short, medium and long throw, mid/high range cabinets.

These each are loaded with horn devices, a mid horn using 2 mid compression drivers each with a 4" throat; 2 x 2.8" high frequency drivers, and 3 x 1" ultra high frequency drivers.

The low mid drivers extend from 300hz to 7khz, so there is no crossover point in the critical mid ranges. Two mid/high cabinets offer 30° horizontal dispersion, differing in vertical dispersion - one is 20°, the other 40°. The short throw version goes out to 60° wide x 60° tall. The sub cabinet is horn loaded with Community's triple spider woofer.

We said there were five cabinets in the range, the fifth is a shortened downfill module, with 60° dispersion for front rows.

System cabinet size is the same for subs and mid/highs, so con-



figuration is simple. Rigging is a very neat system, quick to use. System SPL and cabinet damping is said to be worth checking out, we look forward to hearing the new system soon.

• In Australia call **Horwood**, +61 2 9585-1011, elsewhere call **Community**, +1 610 876-3400

## Stevie W wows at TEC, and gives a guy a break

Fully appreciating the role professional audio has played in his career, Stevie Wonder gave a heartfelt speech at the TEC Awards in New York late September. With his voice quavering with emotion, he paid tribute to the industry.

"You guys gave us the tools, the tools we needed" he told the hushed crowd of industry types.

Wonder is a fan of the AES, and attends whenever he can, delighting the manufacturers with his

suggestions and enthusiasm. He regularly tries out new equipment in the field too.

A Stevie Wonder story I first heard about in August was confirmed at AES. In July Stevie Wonder arranged an after hours session at Sam Ash Music in New York, to look at hard disk recording systems. He attended with his son, and was served by a musician called Chris Burke.

(continued on next page)

## Wonder (continued)

Burke spent time and showed Stevie a lot of equipment. Burke was enthusiastic about the Fostex DMT-8VL, and told the star that it was the system he would buy himself one day when he had the money, as he had an old Fostex X-15 that he had worn out. Stevie then asked for two DMT's, each with a 1.3GB hard drive.

"As I was writing the sale up at the register" says Burke, "Stevie came up to the counter and gave me one of the DMT's. I thought 'Oh, no, he changed his mind'. But instead he told me, 'Here, you said this system is the best and you'd want one for yourself, so this is for you!'"

## What is it?

The Fostex DMT-8VL offers eight tracks of uncompressed 16 bit digital audio, with a complete eight channel mixer. It's a stand alone compact machine, with a large fluoro display showing operational status and allowing editing, such as cutting and pasting. It is designed for musicians, but is also a neat tool for small audio visual departments where quick and clean eight track recording is desired.

Recording time is related to hard disk storage size, and various options are available. See picture.



## Otari show new high end console

**NEW YORK:** Otari Advanta is a post production mixing console to challenge the top end of this market. With up to 256 inputs and remote ethernet operation, the console work surface is a masterpiece, designed in the USA in collaboration with a study group of users.

As you would expect, Advanta has 24 bit A/D and D/A, and is said to be 96kHz sample rate compatible. Up to three consoles can connect to the same audio processors remotely on the ethernet link. All processing is remote from the console, including the CPU.

Salient points: Advanta allows 16 physical paths per input section, each with 8 layered virtual paths for up to 128 input paths per input section. Up to 1024 virtual paths can be assigned on each console. It's routing heaven.

The 40 segment tri colour LED metres are user configurable and allow viewing of two parameters on each metre. They also impress the client! Internal DSP processing allows dynamics, filters, reverbs, flanging and stuff.

Bus and path resources can be allocated by the user. Naturally virtually all console operations can be stored and recalled, with frame accuracy. Most path controls can be automated.

Price is up where you would expect, at about a half gigabuck.

• **Australia: Amber Technology, +61 2 9975-1211**



## Paris prepares for 24 bit ProTools war

Ensoniq showed their new Paris system at AES, which could offer Pro Tools a run for its money. Paris allows 24 bit recording on Mac or PC, with a complete system approach from software through hardware.

The core system comprises an Ensoniq EDS 1000 PCI card, and a cross platform CD-ROM with the software, which will run on MacOS or Win 95 or Win NT. A 16 channel control surface is included.

Each EDS 1000 card allows real time access to 16 channels, with four bands of fully parametric equalisation, pan and fader control. There are eight assignable stereo auxiliary sends and 3 stereo auxiliary returns also.

The Paris software gives a neat graphic user interface for the system's 128 track digital mixer, complete with automation, parametric EQ, auxiliary sends, MIDI capabilities, timecode sync and of

course real time dynamic effects processing.

Paris will come bundled with different input and output options, the Interface 2 is a basic two channel external interface, while the Interface 42 has four analogue inputs, one SP/DIF digital input and output, plus external sync input.

A more powerful interface is the MEC (modular extension chassis), a five rack space external enclosure for a variety of user installable multi channel analog and digital input and output modules. These include SP/DIF, AES/E3U, ADAT OPTICAL, AND TASCAM TDIF formats, with video and word clock sync.

Paris is the result of long term joint development program between Ensoniq and Intelligent Devices.

• **In Australia call Electric Factory, +61 3 9480-5988.**

## Garwood Build Ear Monitor Range

Garwood have introduced new models to their Radio Station range of professional in ear monitoring systems. The Radio Station TS (Territory Specific) offers 16 onboard UHF frequencies and is a lower cost unit in the Radio Station range. Standard Radio Station IDS systems allow users to choose which country they are in, with the unit then providing pre determined frequencies which are both legal and sensible to use.

The TS comes pre configured with your best 16 frequencies for

your country. That's why it's called Territory Specific.

The PLUS 2 is a price point starter unit for in ear monitoring. It is a stereo UHF unit which allows a user to choose between 2 on-board frequencies. It has the standard Garwood features like on board noise reduction, variable slope compressor/limiter, and a mono/stereo switch.

The half rack width transmitter can be free standing or racked and has features to please broad-



casters, including a mic/line switch to match input gain and 48v phantom power at the mic inputs. It can also work on 12v

DC as an option, to suit. The PLUS 2 is supplied with ear monitors and a dedicated dual channel cast aluminium belpak receiver.

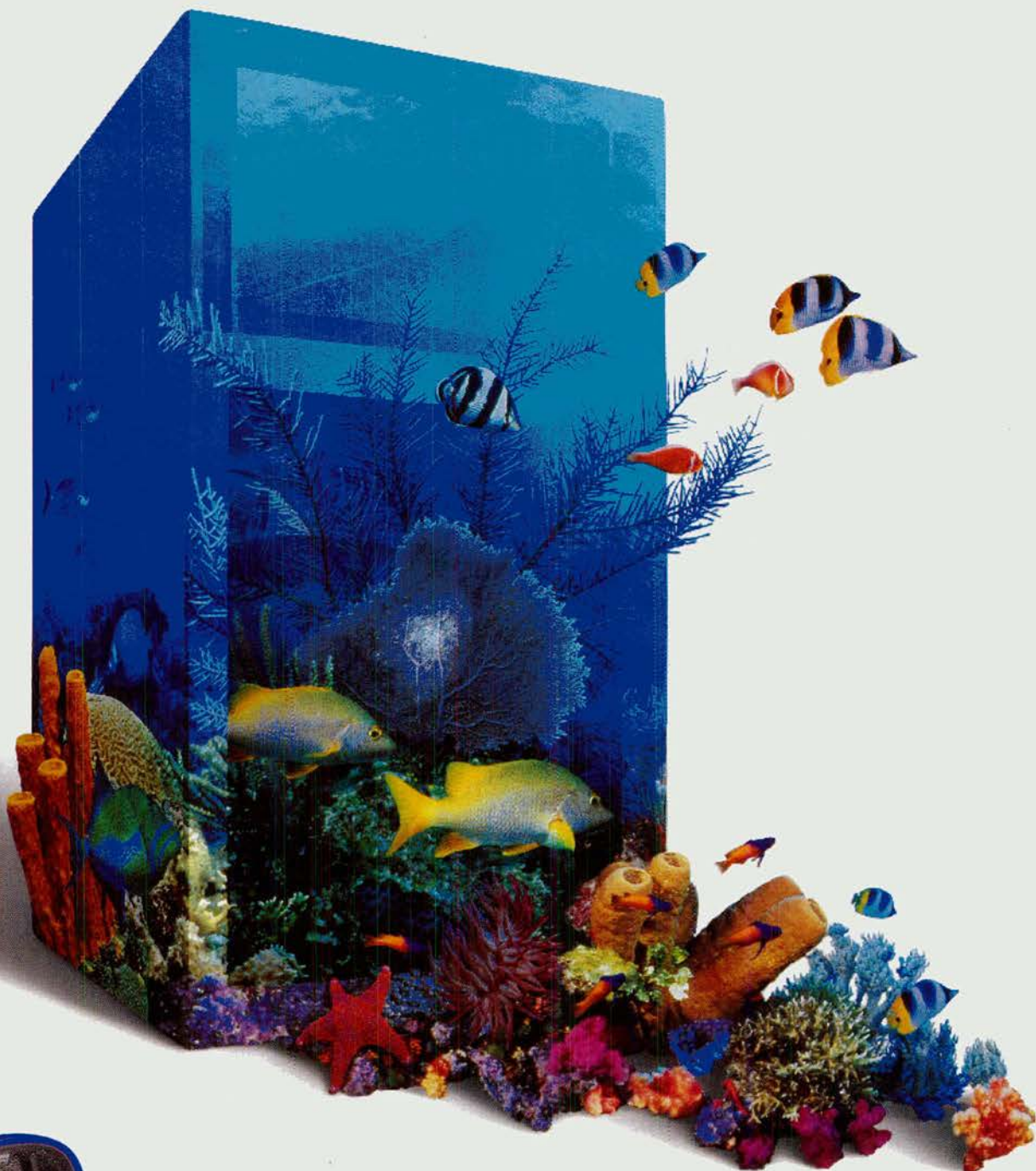
▼ Garwood have recently appointed Production Audio Services as their distributor in the Australian sales territory.

• **Contact them on +61 3 9415-1585**

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# Pro Tools 24

*A surprise 24 bit, 32 track remake of this popular digital recording and editing package. By Julius Grafton*



*Shown with Mackie's HUI (Human User Interface)*

**S**ecrecy on pain of death surrounded the surprise release of Pro Tools 24 at AES in New York. 24 means 24 bit, which is where all recording systems and mixers must head to deal with DVD, vs. 16 bit which is where most are today.

The release was big news, attracting large crowds to an hourly demo. Of course all the journalists all maintained they had known about the release beforehand. I sure didn't.

'Shipping now' is the really big news, as the AES is often a venue for vapour ware and outright fantasy, with firms showing things that come years later and burning off all possible consumer interest in the process.

## OVERVIEW

Pro Tools 24 is a new version of a highly popular (many say the most popular) hard disk recording and editing system. It comprises a new half-length d24 PCI card (which provides track count), the existing DigiDesign DSP farm PCI card (for signal processing and mixing), Pro Tools 4.1 software, and a new version of the 888 audio interface hardware, called 888/24. This 888 is where your audio comes and goes.

Pro Tools requires an Apple Mac computer, the Power Macintosh 7300 is the smallest machine recommended, and the minimum RAM required is 64MB.

All the audio action happens at the 888 and on the PCI cards, and the suggested hard disk configuration is a separate hard drive for ProTools and one in the Mac for the system and whatever else you like to use.

Initially PT24 is a 24 track system, as indeed was Pro Tools 4 and even Pro Tools 3. However very soon now the firm promises a new software version at no cost for PT24 buyers, which will allow 32 tracks. Shortly after they hope to start shopping expansion kits which would allow 48 tracks and up to 72 inputs and outputs - through up to nine 888 interfaces.

To make a Pro Tools system, you get the Apple PowerMac and stuff in the two PCI cards. Then plug on at least one 888/24 interface (see below) and load the ProTools 4.1 software. As anyone who has not been in a deep coma for the past five years will know, you get about recording and editing audio with on-screen waveform control of every little thing.

The alternative? One or more ADAT or similar modular digital multitrack machines, strapped together with a controller. Or a different brand of hard disk recording software and hardware.

## HARDWARE

The 888/24 is a new version of the 8 channel interface, it supplies 8 channels of 24 bit analogue to digital (A/D) conversion - which is of course how you get your audio INTO PT24. It has four pairs of AES/EBU digital inputs and outputs, which is how you get your digital signals out (or in). There is a 2 channel S/PDIF input/output pair, a 50 pin peripheral cable connector, and 256x clock input/output connections.

The 888/24 is a 2 rack unit tall interface device connected to the d24 card, which lives on a PCI slot in your Mac. It has 8 channels of A/D - analogue to digital conversion, for your standard analogue signals - be they microphone or line level. There are 8 channels of AES/EBU digital input and output, and 2



*A screen shot showing a Focusrite RED TDM Plug-In*

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## Pro Tools 24

analogue outputs for monitoring. 2 channel S/PDIF ports are also supplied. This is where audio people find balanced XLR connectors!

For more than 8 tracks, use more 888/24's. As stated the system supports 24 tracks right now, with 32 tracks coming on the next software upgrade. One d24 card supports two 888/24's with an adaptor cable. A third 888/24 can be plugged into the DSP farm card.

When the 32 track upgrade comes sometime soon, what will happen is that the one d24 card will support 32 tracks. With this 4.1.1 software release, ProTools 24 will support multiple d24 cards for 48 tracks. ProTools are currently experimenting with more tracks and more cards.

For the first time, DigiDesign have also configured the 888/24 to operate as a stand alone 24bit A/D - D/A converter, if required!

### SOFTWARE

Pro Tools 4.1 software is essentially the same as version 4.0- but it adds several new features, including integrated support for the Mackie

HUI, a neat controller if ever I have seen one. It allows a user to discard the goddamn mouse and the Mac keyboard - to 'mix' and run Pro Tools on one surface.

Naturally anyone vaguely familiar with Pro Tools will know that because it requires a PowerMac computer it is fundamentally different to -say- the Fairlight MFX. Fairlight run their own hardware and so do not depend upon a third party (Mac or PC) computer. However, of course, the Pro Tools approach costs considerably less, as the firm need not design and support a central processor unit, which is what a Mac actually is.

Where all hard disk recording systems win is with random access of your audio - hop, skip and jump around on a project, without rewinding or fast forwarding a tape deck.

DigiDesign's universal slave driver (USD) is directly supported, allowing Pro Tools to sync to time code, video sync, composite video and bi-phase. The USD will also superimpose, or 'burn', a time code display window onto a video signal.

If you have a new PT24 system and you wish to send your file to someone who doesn't, then you can select to Save File As 16 bit data, for use on an older Pro Tools system.

### DATA & DRIVES

Hard drive technology has kicked along nicely, no longer need you fear the thing will just stop dead, the chance of this happening once a system is established is minute. DigiDesign have a list of suggested drive types on their web page ([www.digidesign.com](http://www.digidesign.com)) which vary from a 2GB Seagate to a 23MB model, with types from Quantum, and Micropolis in between.

ProTools will auto sense what drives are plugged into the SCSI port of the Mac, and auto allocate tracks to drives using a round robin method. You can, if you are paranoid or rich enough, run your audio data to two drives in parallel at the same time.

Of course one must back up one's data, no matter what it is. Our rule here at the magazine is that digital data only exists if it exists twice. So we have not one but three different backup regimes based on a different backup tape for each day of the week.

A good backup choice for ProTools is an 8GB Exabyte tape

drive. At the magazine we currently have a Magneto Optical drive, a streamer tape, and two 1GB Jaz drives. The 1GB Jaz Drives are NOT recommended by Connections at the present time. Be warned.

### SOFTWARE

Many people buy ProTools because of the Plug In technology. This is where after settling down to use the thing you add on third party tools. These are diverse, but usually do things like emulate a famous reverb algorithm or even a tube equaliser.

The ProTools development partner list of Plug In's grows all the time, at the AES show they had a whole goddamn village of vendors offering plug ins like: TC tools reverb, Apogee Mastertools Cd encoding software, and Dolby Surround Tools.



The ProTools 888/24 interface

There are many, many plug ins.

The way the Mac operates, the Plug Ins are placed in a folder in the System, called the DAE (Digital Audio Engine) folder. When the Mac is booted up it initialises the plug-ins which are in that folder.

A new feature in version 4.1 ProTools software allows automation of plug-in bypass, meaning if you hit the 'bypass' switch on -say- a compressor plug in during tracking, this is automated to happen at the same time next time. Likewise you can turn on the plug-in at a set point in a project.

Other new features are support for two different hardware work surfaces. The HUI (Human User Interface) is a neat mixer type control surface where you can do things with flying faders, knobs and push buttons if you hate mice. Digi also have announced a seriously up market control surface called ProControl, which is somewhat up market of the HUI.

Using one of these puts a ProTools system into the same mindset as a Fairlight or dsp Postation, where a custom work surface takes the place of a keyboard and mouse.

### MORE

To further annoy the competition, good old Pro Tools III will continue. This 16 bit system lives on, the price has been reduced to A\$7,949.

**• Pro Tools 24 is priced at A\$12,699, this includes one d24 and one DSP farm card, and the 4.1 software. Each 888/24 I/O box will cost you A\$6,549.**

Upgrades from Pro Tools III and 4 are available, and DigiDesign say customers who have not previously registered their purchase with DigiDesign can contact them for information about how to upgrade. Hardware upgrades from a standard 888 interface to the 888/24 are also available.

### Call DigiDesign for more:

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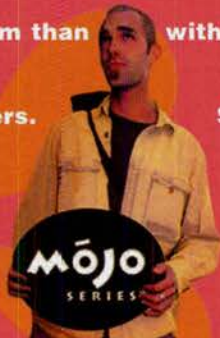


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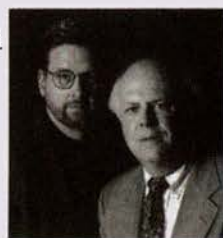
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## Sonic Solutions Studio

In the studio: Radio producer in Adelaide utilises hard disk system

By Julius Grafton

**M**artin Kubitzky is the production manager at radio 5ADFM and 5DN in Adelaide. "5ADFM is the highest rating metropolitan radio station in Australia" he told me.

I hit Adelaide to see how Martin gets all the audio production for two stations done from one studio. "The way things are going in radio, more and more focus is being put on creative and production. Once radio is deregulated it'll change a lot more, with multiple channels of radio".

"Every time an account executive goes out to see a client they take a cassette with two finished commercials - demos. That's how it's done now. We have three creative writers on staff".

This means that aside from the huge number of idents and promo packages required by one radio station, let alone two, Martin is making more commercials in house. Every day.

The station gets more direct spots than from agencies, with the creative elements and of course all the recording increasingly coming in under the radio station roof.

### FROM OLD TO NEW

The old studio had a Soundcraft 1600 mixing desk and an Otari 16 track multitrack, which served Martin well until 18 months ago, when the studio was rebuilt. His one studio has a small adjacent recording room which is good for midi type recording but not drums.

Clearly the station needed to increase productivity, having gone from one radio station to two, just a few years previously. Hard disk recording and editing was the chosen format.

"We looked at Soundscape, Pro Tools and ever. dsp at the time. Increased efficiency was an issue and now we work far quicker. I start at 7.30 and work through to 5pm or so, then a second engineer works the night shift"

The sound quality won the deal for Sonic Solutions. Martin bought a Sonic Studio system. "I nearly purchased dsp - but for the fact it relies on the Yamaha 02R desk. In some respects it's faster, but I don't like the little screen on the Yamaha and layers of commands".

### THE SYSTEM

Martin uses a Mac Quadra 950 and Sonics NuBus cards. This Mac is now somewhat old technology, with the advent of the PowerMac some years ago. "The PCI version for PowerMac was released after we bought the system. If you know how to use the system properly it still works fast".

Martin has two processor cards in the Mac, one handles the 16 tracks and the other does NoNOISE processing - for de-clicking and filtering. There is an external eight channel A/D converter for 8 analogue inputs, and two eight channel D/A converters for sixteen analogue outputs.

There are two computer monitors hanging off the Mac. One

monitor is used to see waveforms, and the other is for Edit Decision Lists and the Sonics status window. "Its handy to be able to see everything. The Sonics (virtual mixing) desk has really accurate metering too. You can hold the peaks and see them, the desk is very easy to use - you can group the fades, pan and there are even insert points on the virtual desk for future porting of plug-ins.

Two 4GB hard disks are used for audio, although when I called one of Martyn's two 4GB hard drives was down and out, and off being repaired.

So what happens when something breaks down? "We just keep going. There's usually a way to work around it. For example, if a processor card were to go down, then we do have two. If worst comes to worse, I can live with one. We could record straight onto quarter inch take and lay the voice over the music!"

### THE STUDIO

Martin likes having a good conventional mixing console on hand. He choose a Soundtracs Solitaire, 24 inline mixer, which has

automated mutes and separate dynamics for every input.

"I've got a combination of digital and analogue here. Although I haven't got total recall of everything, I like the sound. I can mix and add EQ and reverb to some extent inside Sonics. But one of the things I like is that I can still use the analogue desk".

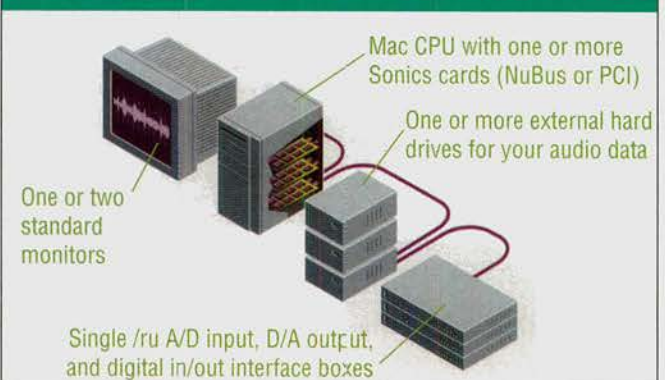
Each job when done on Sonics is recorded onto quarter inch analogue tape on an Otari 5050 in stereo

when done, and is taken upstairs and recorded into the on-air hard drive system. At presstime a new RCS on air hard drive system was being introduced in tandem with a new second studio. The transfer from Sonics to RCS will happen direct then, and be backed up to DAT in real time.

Currently Martin's department comprises himself and one assistant who runs the night shift. With the new studio the nightshift will be moved back to a midday start, ending at 9pm.



### SONIC STUDIO: TYPICAL CONFIGURATION



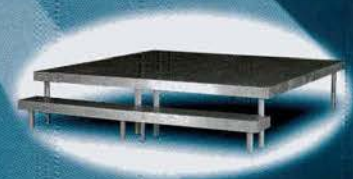


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# Sonic Studio

(continued)

An extra half a position will be added, with the new person responsible for carting the material direct into the RCS system. Currently once the analogue tapes are taken upstairs, someone else loads them.

Martin's second studio has just been commissioned, with a second Mac running Sonic Solutions. It is practically a mirror image of the first. It will run on an ethernet topology via Sonic Solutions Medianet, which will allow real time access between systems. "I can be working on voices while effects and things are worked on in the other studio".

For backup Martin has an Exabyte 8mm tape drive. "I only archive jobs I might need again, but I have over 40 tapes so far".



Martin Kubitzky

## WORKING ON SONICS

"Day one was a nightmare. I had five hours with the guys from Syncrotech before they left - and I had nothing to do with computers before. I had just got the 'Welcome to Mac OS' book! So I just told myself that it's only a tool. That's the argument I use".

"There were some teething problems, one hard drive power supply went down in the first week".

"The work I've done in the past 18 months on Sonic has totally eclipsed anything before. Knowing the limitations of analogue now there is no need to compromise".

"Background processing is one of the real beauties of Sonics". Background recording to hard disk, archiving and restoration are all done in the background - meaning you can keep working while these things happen. You can even record, while working on up to four EDL's (Edit Decision Lists) at once.

"It sounds great, the fades this thing will do are so smooth it defies belief. The thing they can improve on is the one area where Pro Tools wins hands down - is the TDM plug-ins. It's the only advantage ProTools has over Sonics. But I think something is coming to address this".

"As far as a multitrack recorder goes it's a beautiful machine. Each processor card will handle 16 in and 24 out".

"I haven't got the luxury of time when I'm working. I had nine different sixty second commercials for one client to make last week and each took about 45 minutes".

"We did a music project for on air recently called 'rewind', take a new version of an old song, start with the new version and break it with a sound effect and a bit of a voice over, then run the old version. The whole package ran five minutes. For me to sit and wait while each one records down to DAT or whatever is time consuming, especially with thirty or so to make. But I can start on another while the previous one is loading down".

"If someone sends me a DAT with fifteen minutes of voice over for an AV, I can lay that down in the background while I work on something else. I can burn a CD in the background. Try doing that with ProTools!"

"I've also got multiple levels of undo and redo, I set 25 levels- but you can set much more. A big bonus".

## RADIO PRODUCTION IS A LONELY JOB

"My background is in television, as an audio operator - nine years ago I got my first radio job. So I've had 17 years experience".

"I get ideas from other people of course. Radio & Production magazine in the states send a cassette with each issue. Every now and then you come across a fresh idea. But America is typically a 60 second time frame for commercials, whereas here it's 30 seconds. I

try not to consciously copy other people's ideas"

"I think I've probably got one of the largest libraries of sound effects and production music. Mainly from PMS Digiflex library and Zomba music. Music I get from everyone, all the publishers. You need it, there's nothing worse than listening to a radio station and hearing the same piece of music behind different client's ads. That's not effective advertising procedure. There is a lot of money tied up, but they are used. It'd be great if I had a file server with all this loaded..... one day. Imagine"

"You don't know what a piece of music is like from the description. You can't quantify- you just know from experience, and think outside the box. It's inside of you".

"Getting the right effects and music are most time consuming thing in putting anything together. 5ADFM is a music format, 5DN is news and talk".

"Faster than using just in house announcers we are bringing in outside talent, like actors for voice overs. All the commercials will be done by non station personnel. They'll be easier to find! Even with two radio stations sometimes announcers are thin on the ground when you need them!"

## WHY SONICS?

"I can appreciably hear the difference between systems, Sonics just has a warmer, more musical tone. Add some analogue EQ and compression in and it tends to warm up the whole mix. But it's still very clean!"

"There are 3 compressors (soft, medium and hard), and there is onboard EQ of course. There is quite a selection of filters - for restoration and mastering that is a must".

"I've just done an edit on a Spice Girls song, from 8.05 to 3.22 minutes. There were six or seven edits - it was just so simple!"

"I'm building a studio for Bull Ant Productions here in Adelaide. They will be using Sonics too, plus 8 tracks of ADAT. I'd like to see a few more Sonic systems used in Adelaide".

"It really is a joy! I'm still discovering things every day that it does".

◆ Priced from A\$8,939.

◆ Contacts:

Australia & NZ: Syncrotech Systems Design +61 2 9679-0800  
Sonic Solutions HQ: +1 415 893-8000  
Sonic Solutions Pacific Rim: +31 3 5439-7171

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## EAW KF IN THE FIELD

*Adelaide operators talk about their KF loudspeakers*

**F**ive years ago Eastern Acoustic Works had a low profile in the Australian region. Now EAW is seriously considered when new professional PA speaker cabinets are required.

Adelaide is a good microcosm of the market, once compared unfavourably with a standard American cow town, this city of almost a million people sits just west of the beginning of the fertile crescent that is the eastern seaboard of Australia. Adelaide is close enough to the east to still get major touring shows, and is the place many tours actually start.

The place is not short of audio rental firms, Osmonds are the largest and they own about 16 sets of EV Manifold. I was in town to get an EAW at work story, so I visited GoLight in Kent Town where Tim Marshman utilises the KF 850.

Across town, Adelaide Sound Hire operate the KF 650. Peter Morris met up with me at GoLight to talk about these.

### PRODUCT DESCRIPTIONS

All EAW's loudspeaker products are designated by letters and numbers. They have a wide range but the KF 850 is the flagship, or was until this month when the new 900 series were introduced. (See story elsewhere).

KF 850 is a three-way design built around a unique birch laminate and structural foam midbass horn, as is the smaller KF650.

These systems are effective to as low as 80Hz, but do require supplementation with sub woofers for real thump. The principle is to get the KF to operate to as low a frequency as possible, so that a sub woofer need not be flown with the KF box. This is because the more audio program that can be projected from a controlled dispersion box, the better. Other systems need a sub woofer or bass box to operate to a higher crossover point, and so allow less control.

I once tried out a system which on paper looked really excellent, but in reality sounded like a sick dog. At that time I realised that many successful speaker cabinet designs are one part science, the other black magic.

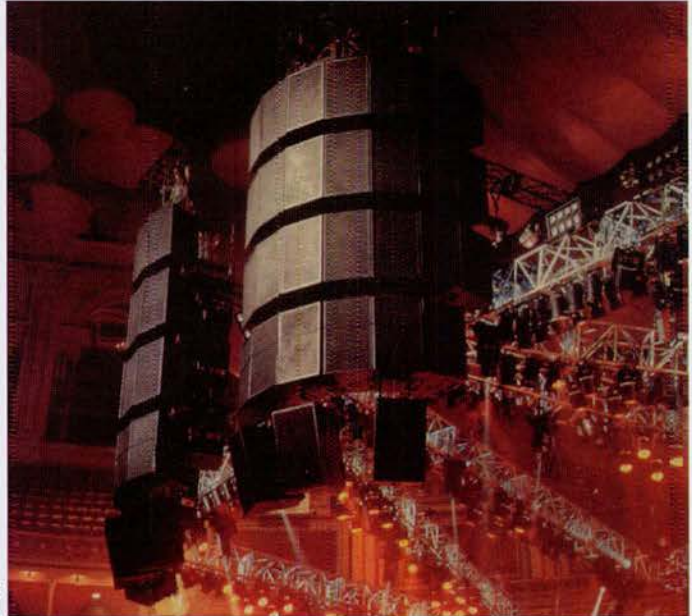
This is what EAW say about the design intention behind the KF range: "Horn loading of the MF driver allows it to handle frequencies as low as 200 Hz without strain; as an impedance-matching device, the horn greatly increases driver efficiency and minimises harmonic distortion. Horn loaded midrange sub-systems also provide consistent pattern control over a wide operating bandwidth. Dedicating a subsystem to the human vocal range helps produce natural sound at extremely high output levels."

Both the Adelaide owners opted to build their own sub bass cabinets, reasoning that because these need not be flown then the primary job was reasonably simple. They use RCF P300 18" woofers, RCF is one of six loudspeaker manufacturers EAW source their loudspeakers from.

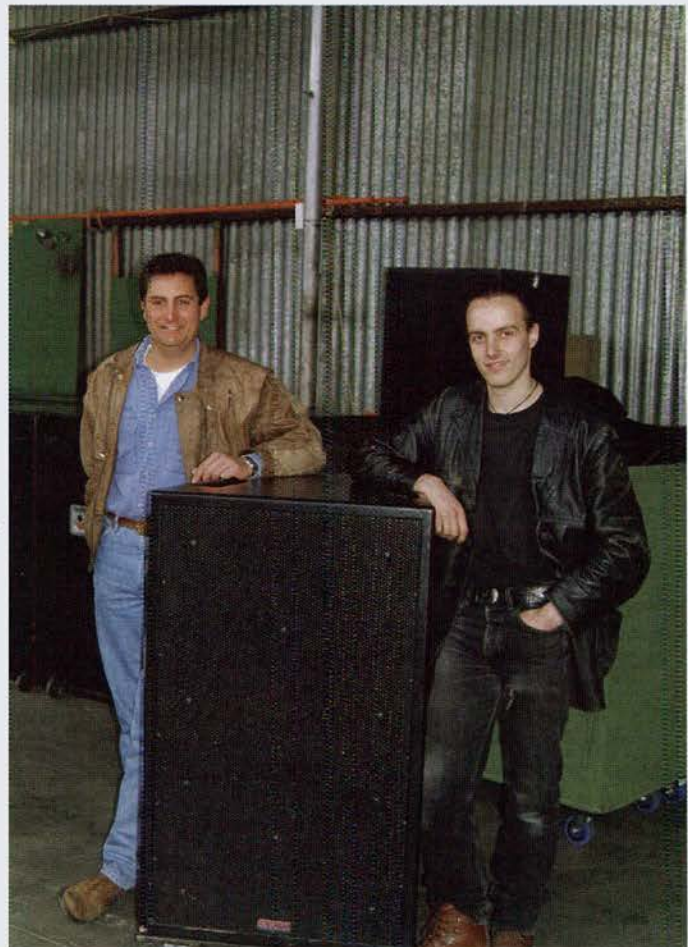
GoLight have a compact dual 18" sub, while Adelaide Sound have a single 18" variant.

### KF850

This is a trapezoidal cabinet, loaded with one 1000 watt 15" loudspeaker on a midbass horn, one 400 watt 10" speaker horn loaded on the aforementioned mid bass horn with a phase plug



*EAW KF850's arrayed*



*Peter Morris and Tim Marshman with a KF850*

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Write in Reader Service Number: 175

## EAW KF 650 / 850

(continued)

in front of it, and one 200 watt high frequency horn with a ferro fluid cooled high frequency compression driver. The horn sits in front of the 15" speaker in its horn mouth in the top half of the cabinet.

The cabinet sits just over a metre tall, at 1066mm, and weighs 114kg. It has a neat black polyurethane finish, and a perforated steel grille.

Crossover points are specified such that the 15" speaker operates from 80hz to 280hz, the 10" from 280Hz to 1.6kHz, and the high frequency compression driver from 1.6kHz to wherever the driver quits the game. Officially that is at 17khz which is the high frequency point minus 2dB.

The original KF850 fitted with a TAD 4002 driver did get to 20kHz - with assistance from the system processor. Current KF 850's don't use the TAD driver, rather they are fitted with an Italian driver. Which works just fine, the Adelaide men say.

The flying system comprises two Aircargo tracks each at the top and the bottom of the cabinet, with internal subframe.

A KF 850 has nominal dispersion of 55 degrees horizontal and 40 degrees vertical.

### KF 650

This is the same as the 850, only different. It's got the clever mid bass horn for the 10" speaker, but the compact cabinet design forces compromises. The mid bass horn is at the cabinet top, and the 15" woofer is at bottom - with the high frequency horn mounted in front.

There is a sort of foam baffle in front of the 15" woofer and behind the high frequency horn assembly.

This cabinet is also trapezoidal in shape, and stands 844mm tall. The flying system is three single points at top and at bottom. The weight is 60kg.

The KF 650 has no ferro fluid sitting in the high frequency compression driver coil gap. It uses the same driver as the 850. The fluid dampens distortion caused by diaphragm resonance, as well as providing thermal protection.

Peter: "My criteria in buying the 650 was that it had to have as much horsepower as possible, be a name brand, and two people could pick it up. The choices were the Turbo Floodlight or the KF650, but the sub policy at Turbo drove me away. A lot of my decision with EAW was that they are a co operative company to deal with, whereas Turbo make things a bit awkward.

### ELECTRONICS

Both Tim and Peter enjoy the freedom to use what ever system electronics they choose. In fact, freedom of specification is what made the EAW easier.

When you talk to a PA system manufacturer they are VERY particular about how their product is specified. In fact, Turbo Sound are prohibitively restrictive about their Floodlight and Flashlight product, according to the guys. They say they were unable to order Floodlight cabinets without Turbo sub woofers, and so didn't consider Turbo. Turbo also have a rule that we have heard about often, that if you buy Flashlight cabinets, you must also buy BSS amplifiers to drive them. The Turbo prohibitions have cost the firm dearly in terms of regional production company sales, at least in Australia.



Sunny days and an outdoor gig, 850's with 650's underhung



A GoLight amp rack, with neat CEEP multipin signal feed

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## EAW KF 650 / 850

(continued)

EAW specify their MX8600 system controller for KF products. This is a digital stereo 4 way processor, which comes configured for whichever EAW product you choose to run with it. It has crossover and limiter functions and does all those things a system designer wishes.

However, like many production company owners, Peter and Tim have elected to drive their systems with something different. They use Yamaha D2040 digital processors, or the new XTA DP200. The advantage is that one processor can be reconfigured to drive different speaker systems.

Tim Marshman owns a considerable number of 'JBL Modular', which is generic name for the Jands / JBL horn loaded modular PA stack which is used by several different production firms around the land. It is a workhorse system which is very popular with rock bands. Because it delivers a lot of thump.

GoLight work to a high standard, so Tim has retrofitted all his JBL modular boxes with current VGC JBL drivers.

Getting back to the electronics, Peter had down loaded EAW's suggested settings for a Yamaha D2040 processor from the EAW website. EAW have a very comprehensive website at [www.com.eaw](http://www.com.eaw), where you can find almost every bit of information plus more. The crossover settings are all there, although you need to know in advance which spreadsheet file you actually need, as the index has maybe 100 files with names like '2 690E.xls' and so on. But Peter got the settings, and so was able to program the D2040 with details like crossover point, slope, time alignment delay, and constant directivity (CD) horn equalisation.

### AMPLIFIERS

Efficiency in the real world means that if possible, you stick with ONE standard amplifier rack configuration. Tim has wired his Modular system with EP6 connectors, so can use the same racks and the same speaker cables for either.

His racks contain three amplifiers, are 14r/u tall, and stylishly made. The 14r/u height is useful too, for putting monitors on top or sidefills. But despite the height, each rack has three, not four amps inside. The extra space is for processors up top or just for airflow.

"The most ridiculous rack I've ever seen had four Jands 920's in them. A true ballbreaker!" says Tim. The guy who originally specified that rack, widely used in Australia, obviously had no intention of lifting one.

The GoLight racks have two QCS MX3000 amps and one Powerlight 1.8. The MX3000's will drive two or three cone drivers per channel, either 10" or 15". Tim explains: "If I'm running a triple or six (KF 850's) a side, then I'll run 3 speakers per amp channel. If I'm using a double or four per side, then I'll run 2 per side". With three eight ohm drivers on one amp channel, the impedance is a nominal 2.6 ohms. This is quite different to the amplifier than the 2 ohms which four drivers load down to.

The PowerLight 1.8 runs high frequency drivers. Each GoLight rack has a 2 CEEP 37 pin connectors, for drive signal and loop through. "It (CEEP) is my own standard for feeds. I don't like Burndy connectors, because everyone uses them with a common earth. A 37 pin connector allows 12 circuits each with separate earth. So I have four for left, and four for right rive, with four spare lines for communications or monitor sends" says Tim.

A separate rack is used for the subwoofers.

Peter uses Jands SR3000 amps. "At the beginning we got the specs, I took an oscilloscope to a gig by the punk band The

Buzzcocks. The amp was doing 1400 watts on the transients, it was doing exactly as Jands said it would". He's happy.

### MEAT AND POTATOES

"Neither one of us has had a component failure", says Peter.

"One factor is the KF 850's ability to throw midrange, it's quite impressive" says Tim. "Another real consideration for me is that the rider is most often EAW, more than Meyer even.

Peter: "I went to Meyer (when deciding which system to buy) and at the time the MSL 4 wasn't yet available and the price wasn't projected to be realistic then. Since, they have dropped their prices to be more competitive in this market. There are some advantages in having the amp in the box. But, a question I put to you - if you were an amplifier, how would you like to have your head inside a speaker box?"

The decision of two independent operators to buy EAW was not influenced by the other. Peter says his decision to go with the 650 is driven by the kind of work he does, which is conventions and smaller shows. And two people are a typical crew, so weight is an issue.

On the other hand, GoLight are a well organised, well specified regional professional audio firm who can do campus level international bands and secondary outdoor concerts, like stage two at Womad. When they do, they can subhire KF 650's from Adelaide Sound, and use them for nearfill, sidefill, and delay rings. The two operators don't really compete, so they co-operate!

But what do your KF speakers sound like, gentlemen? Peter: "They sound wonderful!" Tim: Remarkably good!"



Peter Morris from Adelaide Sound, with a KF650

# ~ REVIEW ~

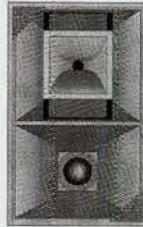
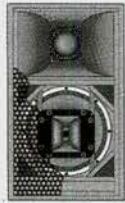
## EAW KF 650 / 850

### Contacts:

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 Singapore: A.C.E. +65 741-5928  
 Hong Kong: Eastern Acoustic Dev. +85 2 2490-2121  
 Eastern Acoustic Works, Phone +1 508 234-6158

### Good people to know:

Adelaide Sound +61 14 096-682, GoLight +61 8 8363-3393



◆ Prices: KF650 A\$7,995 retail  
 (Street price would be less)

### SPECIFICATIONS:

Powering mode is switchable:  
 biamplified (passive MF/HF crossover)  
 or triamplified.

Frequency Response (Hz)  $\pm 3$  db 65Hz  
 to 17kHz; -10 dB 50Hz

Axial Sensitivity (dB SPL/1 Watt/1m)

Power Handling, AES Standard (Watts)

Biamped MF/HF 400;

LF 1000;

MF 400;

HF 200.

Calculated Maximum Output (dB SPL,

@ 1m) Biamped MF/HF Peak 139.0

Biamped MF/HF Long Term 133.0

LF Long Term 130.0

MF Long Term 133.0

HF Long Term 130.0

Nominal Coverage Angle / -6 dB points

(degrees): Horizontal 60; Vertical 45

Dimensions in mm:

Height 845; Width (Front) 502; Width

(Rear) 328; Depth 502

Trapezoid Angle: 10 degrees per side

Weight: 63.7 kg

◆ Prices: KF850 A\$12,995 retail  
 (Street price would be less)

### SPECIFICATIONS:

Frequency Response (Hz)  $\pm 3$  db 86Hz  
 to 17kHz; -10 dB 65Hz

Axial Sensitivity (dB SPL/1 Watt/1m)

LF 102

MF 109

HF 112

Power Handling, AES Standard (Watts)

LF 1000

MF 400

HF 200

Calculated Maximum Output (dB SPL,

@ 1m); LF Peak 138.0

MF Peak 141.0

HF Peak 141.0

LF Long Term 132.0

MF Long Term 135.0

HF Long Term 135.0

Nominal Coverage Angle / -6 dB points

(degrees); Horizontal 55; Vertical 40

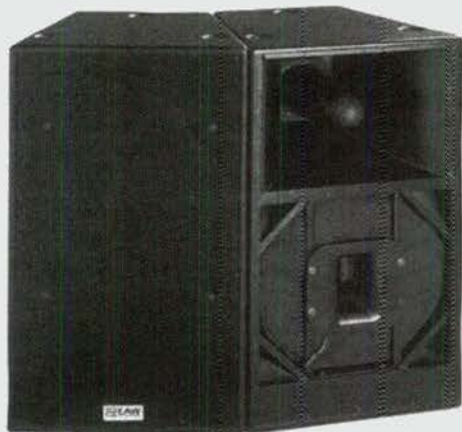
Dimensions in mm:

Height 1067; Width 670 Width (Front)

670; Width (Rear) 419; Depth 749.

Trapezoid Angle: 9.5 degrees per side

Weight 113 kg



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3012	2 Channel Parametric Equaliser

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## Fairlight MFX3<sup>plus</sup> Heavy duty editing at Spectrum



Libby Villa

by Madeleine Murray

Warning: This is not an advertorial, but Libby Villa loves her Fairlight MFX3<sup>plus</sup>. At Spectrum Films Villa is a Sound Supervisor, and she is now working on three tele-movies.

The film is cut upstairs on an Avid, and then Villa gets a hard drive with the audio on it. She just plugs it straight in, and the Fairlight reads the Avid files. They don't have to load Edit Decision Lists (EDLs). "This saves a lot of time," Villa said. "The Fairlight can read the sound in perfect detail from the Avid. It reads every fade, every state. It saves an enormous amount of time in the track laying process."

Villa has been cutting the dialogue, while someone else works on the effects and another on atmos. After four weeks, everyone brings in their hard drive, and plugs it into the Fairlight. The whole system is totally digital.

### System overview

MFX3<sup>plus</sup> is the latest version of Fairlight's digital audio workstation. It is an integrated unit, meaning what you buy is all you need. No host computer is required, Fairlight engineer the whole shooting match. A variety of processor racks, towers and options are offered, so audio production can be as simple or as sophisticated as required.

MFX3<sup>plus</sup> is usually found in audio post suites, which is where this story comes out of.

With the MFX3<sup>plus</sup> comes version 1.2 software, and the option to read OMF (Open Media Framework) files from Avid Media Composer and Avid AudioVision systems. The new version, on MFX3<sup>plus</sup> boots up way faster, and offers better video graphics.

LCR mix output, large drive support and a new database of audio clips, called Audibase, are all new. Networking in real time is possible too, by adding a card to the workstation for a 100Mbit link. On a network, the MFX3<sup>plus</sup>, Mac and PC workstations can transfer files using OMF.

Soon Fairlight will also offer a hardware upgrade for mixing 24 bit audio.

MFX3<sup>plus</sup> isn't for everyone, it is best employed where heavy duty professional audio recording and editing is done in a production environment.

### Mixing from the Fairlight

The mixer, Phil Heywood, comes in for seven days, and works on a Yamaha 02R desk. "He pre-mixes down, and we keep opening up new projects on the Fairlight," Villa said. "Phil will open up that project, and mix the dialogue. When he's finished that, I'll create a new project that says 'effects pre-mix'. John will bring in his effects, we'll put that into that project with the dialogue pre-mix. You can bring sounds across into a new project. Phil will mix against the dialogues. When he's finished, I'll take the dialogue pre-mix, and the effects pre-mix, and put them into a new project called atmos pre-mix. He'll mix down the atmospheres, then we'll start a new project called final mix.

"It's extremely fast. With digital pictures, he can go anywhere in the film instantaneously. That saves him about a day in the mix, just in spool time. There's no charts to be done on paper anymore, you just have moving charts on the screen. You can actually see what's coming up. Phil can see that something's coming up on Track 4, and he should open that fader. He can see when things are going to run out, so he can fade them out. He can see if I've put in fades, or cross fades. It saves us a lot of time when you don't have to dump out anything. You don't have to spend time drawing charts, you can actually print charts off the Fairlight. Everything you can possibly need is right there on the screen."

The Fairlight has 'macros', or quick keys, so Heywood can just hit one key, and go to an exact spot. "He used to have to spool back, and wait for the Umatic to lock up. The producers are very

impressed with the time saving," Villa said.

**Shrink, Fade, and ADR**

I was impressed by the clarity of the screen graphics, and how easy they were to read, and look at. Fades are shown by broken bars on the edges of a block. "I can highlight a track, and zoom in on a waveform, so that I can see a little click, and get rid of it," Villa said. "I can make a copy of the piece of sound before it, and just plop it on top. If I'm cutting ADR (additional dialogue replacement) I can put the guide track on track 4, and the ADR on track 3, and literally look at the wave forms, and just match them up. My first step now is always to match the wave forms, before I even look at the film footage. It's spot on, because you are literally looking at the peaks on the guide track, and fitting them. It's very fast for cutting ADR, and fitting wild tracks. It's great for making a piece of fill, you can just take a copy. It can make reverses, and smooth spots between a low and high point. You can make two or three clips into one, it's just fantastic. You can fade, mix, shrink, lengthen, change pitch, and EQ."

Villa runs a scene from *Hostages*. Each track is clearly marked on the computer screen, scrolling by, with names in boxes. "The screen is easy to read, it's particularly simple to understand," Villa said. "It highlights the track you're working on in pink, and everything else is blue. I am always in this page, and I never need to move out of this page. If I want to access an effect, like a car, I type it in, and it will give me a list of every car effect in the library."

**Company Backup**

"Because they are an Australian company, it's great that I can ring up someone, know their first name, and tell them if I have a special request," Villa said. "We are able to interact with Fairlight, and tell them the things we need. Only last week, I needed to be

able to do something. I rang them, and they got their software people to write something, and came out and installed it. They have regular user meetings, for our input. When this smaller model came out, they moved keys around. I rang up, and they wrote a piece of software. I got a little tool and changed the keys back to where I was used to them.

"It's great to be able to talk to the people at Fairlight, and ask why they can't do something. We are given the latest software to test. We have feedback both ways."

Villa, and her husband, Wayne Pashley (sound supervisor on *Babe*), own the five Fairlights at Spectrum. Fairlights began in the music world, and moved into the film industry ten years ago. Tracks, Spectrum, ABC, Foxtel, and Channel 9 use them, and they are used in the US by big companies like Todd-AO, and Warner Brothers. John Haeny, international product manager, ran Todd-AO for ten years, and was responsible for bringing Fairlights into the States. "They are an extraordinarily robust digital engine, coupled with a very fast and accessible user interface," he said.



• Fairlight MF3<sup>plus</sup> is priced according to specification. A basic system comprising the CPU rack and controller, capable of 4 inputs and 8 outputs, will sell from A\$30,000. To this you add whatever hard drive or hard drive array you desire, and a video monitor. Upgrades can configure the system for 24 track recording, networking, and of course software enhancements will be available from time to time.

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## Valves # 1

I'm trying to find replacement valves for an old (really old) REVERBMASTER amplifier. It was made in Australia about 25-30 years ago (I think) and it uses 2 "6DQ6B" power valves. Ever heard of them? The valves are still in there and are labeled "6DQ6B" on the glass and on the chassis.

The best I could do was ask a TV technician for a more modern replacement. I was told I could use the 6CM5(EL36) as a replacement, but that it would not have as much power. Is this true?

I'd rather replace the valves originals. Can anyone help me locate the original valves?

-Eddie Cassin

eddiec@stgeorge.com.au

## Valves # 2

My name is Edmond KAN, I am a tube lover, I have a tube pre-amplifier with 12ax7/ ECC83, I totally agree with your opinion that Mullard tube produce the best sound quality. However, I have experienced that different Mullard tube produce different quality. I think the best should be the military standard Mullard tube. I am difficult in searching such high standard Mullard tube.

I hope this could not bother you too much. In fact, many seller would tell me their tube is the best. But, I am not an experienced tube collector, so, I would be misled in many occasion.

I hope you can help me

- Edmond KAN

kansy@ha.org.hk

## Watts v dB

Excuse me for my confusion regarding Ben Armstrongs picture (*Letters, October*) but the Multimeter in the picture is not measuring Watts .... it is Measuring Volts.

Volts can be converted to Watts using the Formula  $P=(E^2)/R$  so that in the first photo with the VU meter at -3dB( $r^2$ ) and the Volt meter at 39.1V (RMS I presume) I get 382.2 Watts (at 4 Ohms) in the second photo with the VU meter at Clip (0dB) and the Volt meter at 80.9V I get 1636.2 Watts - which is kinda sorta roughly four times the power.

Or, when I throw these figures through another magic formula ( $\log(p1/p2)*10=$ dB) I get 6.315dB - not the 3dB talked about in the accompanying letter.

There! I knew there was something bugging me about those photos can I have my pedants badge now?

- Richard Freeman,  
Hornsby, NSW.

## Midi drum pads req.

Can you suggest an 'all in one' midi drum pad set (something similar to Roland Octopad etc.) for within a budget of around \$600- \$800 dollars? I'm looking for something second hand. Can you suggest models, brands etc..

-Anthony Jackson

ajacks@ozemail.com.au

## Pantera FOH

Hi, my name is Aaron and I am & have been the house sound mixer for Atlantic recording artist "PANTERA" for eight years. I just read an interview on your web page about a friend of mine, Toby Frances (KISS) and I just wanted to tell you guys I thought it was GREAT.

I have read your mag at my sound co. (SHOWCO). That's really all I had to say. We will be going out one more time in the states in November- before X-mas, then I guess we are going to kick back up with OZZY in S. America.

So if ever any of you guys want to come out to a show near you let me know through our Management.

-Aaron Barnes

wires@cyberramp.net

## Gaff dreams

I've just had one of those nights. Between the hours of 2 and 3AM I came up with a great idea for a new piece in the magazine:

"1001 things to do with gaffa".

It comes about after the suggestion in the mag last month that wrapping gaff around your hand was a good way to remove dandruff. Then there was Dunc's mention of a stage falling apart, made basically from Gaff.

Our escapade was when we took our three year old daughter to the Melbourne show.

Not being very good at this fa-

thering thing I took the precaution of putting a strip of gaff on her jumper back, and writing...

'If lost, please call ....' with my mobile number.

Well guess what? She decided to go and see the horses, and took off alone. Within 5 minutes the gaff had done the trick, and the Police had called!

Later I threatened to use the same gaffa on her mouth when she was demanding a 'Wiggles' show bag!

So: contest time: I will put up a mixed box of gaffa as a prize, for the best story:

1001 things to do with gaffa!

-Braham Ciddor

Lightmoves, Melb.

\*Readers, it's a challenge. Get your 1001 things to do with gaffa stories in, and once we have had a few good ones we will draw a name from the hat so Braham can send you The Good Stuff! (Australia only - sorry)

Send your story to:

Gaffa story, PO Box 439 EPPING NSW 2121 Australia, or Fax +61 2 9876-5715, or email to: mail@conpub.com.au

## Pay scales

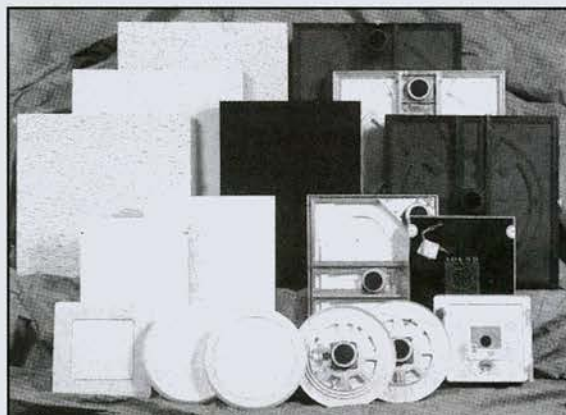
When I was first starting out in my lighting career I worked as a stagehand / loader to

a: earn money; -and-

b: learn as much as I could.

I was inexperienced, knew nothing, and was paid \$15 an hour. Now with 5 years experience I can safely setup and operate lighting equipment and I get paid \$12.40 an hour.

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knowledge and experience you have, the more you are rewarded. Meanwhile I can barely afford to live on this wage. (The award I am referring to is the Live Theatre & Concert Award 1997, for a Theatrical Employee Level 3).

It's about time the union (MEAA) does something to improve pay rates instead of sitting around. I hope people read this and start speaking out about this situation as I think it's time a constructive dialogue commenced to try to improve things for everyone.

- **Rick Bishop**, rickbishop@one.net.au

*\* We can only agree, this is a pitiful and appalling situation. How anyone with half a brain can expect people to be attracted to an industry with such ridiculous base rates of pay is beyond me. I thought that although the base was low, theatre technicians earned considerably more through loadings. -Ed*

## B&K still make microphones

Congratulations on a well written, factual article on the Danish Pro Audio Mini Mics (October, 1997). I couldn't agree more.

No doubt the conspiracy theorists will state it was another advertorial but I don't think you'll get rich on my advertising budget.

There was one fact which needs clarification. Brüel & Kjær have not stopped manu-

facturing microphones. Brüel & Kjær is still a front runner in the field of microphone design, construction and application. Brüel & Kjær is a world leader in precision instrumentation for sound & vibration measurements which require microphones of the highest standard. These mics are not to be confused with the 4000 Series Professional microphone range which was developed for the recording industry.

In 1992 Brüel & Kjær decided to concentrate on their core business of measurement equipment and to out source the development, distribution and service of the 4000 series. As a result Danish Pro Audio was founded with employees from the original Brüel & Kjær Pro Audio Group and microphone division. In short B&K make the mics - Danish Pro Audio sell and service them.

Not all products, however, are economical to manufacture at the B&K factory. Danish Pro Audio being a much smaller company with 23 employees is able to, in the case of the Mini, provide technical break-through's and quality at highly competitive pricing. The Brüel & Kjær 4000 series mics have 20 models in the range and still account for the majority of Danish Pro Audio's business.

DPA branded products are developed and manufactured by the same people, just not at the B&K factory.

-**Leon Hart**, Studio Supplies, Sydney

## YOUR say about Connections.....

"Lighting Monthly needs to be Bigger!" **Bobbi Black**, Savage Puro Production, South Melbourne, VIC

"I was just wanting to know if ENTECH will ever come to Queensland. Brisbane now has a great convention centre." **Scott Chapman**, Currumbin, QLD

"I would like to get the prices on items I get reader service info on. LSC does this well, but they are the only ones." **Scott Hassett**, AV Technician, Video Production Services, Daw Park, SA

"To the most relevant magazine in this world, Thanks! I was wondering if Michael could tell me whether (or not) you could set up a PA so that every frequency was in phase and just what a "quadra-phonic system is?" **Jeffery Wehl**, DJ, Artwork Inst, Rosewood, QLD

"Great Mag, Looking forward to ENTECH 97, Keep up the good work" **Andy Burgess**, Entertainment Services, Bagginz, Nundah, QLD

"Keep up the good work Guys! I enjoy reading the mag." **Anthony Ingram**, A/V Technician, Cairns Convention Centre, Cairns, QLD

"Small round of applause, A great effort!" **John Dimitrievich**, Sound Engineer/Technician Dazza's Sound and Lighting, Dapto, NSW

"Re Degaffing: There is another organic product called CITRA - an orange oil which is fantastic for the same application, especially whom the leads have been put down with packaging tape or similar." Mr **Lindsay Gesling**, Event Sound People, Mitchell, ACT

"We are current Subscribers to your magazine, and most happy with it too. As a constructive comment we would like to see more articles/reviews of equipment and personnel currently involved in international rock tours, the opinions expressed in last issues "KISS" feature were both informative and entertaining."

**John Kelly**, Luminacht, Christchurch, New Zealand

We REALLY like getting your letters and emails. As any regular reader knows, we **almost ALWAYS** print letters which are CRITICAL of our publication! This month we didn't get any!

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S U P P L I E S

# Suffering For Her Art

Susan Cooper has guts. She risked all to stage a major musical - without a star name. She describes herself as young enough to rebuild - and old enough to know better

By Mandy Jones

At 34 years of age, Susan has risked everything she owns for a chance to realise a dream. Susan is the Producer and Director behind Paragon United Artists' production of *Godspell* which played at the Universal Theatre in Melbourne last month.

Incorporated into the 1997 Melbourne Fringe Festival, the purpose of *Godspell* was to provide a platform for talented young performers looking for their 'break' into professional musical theatre. A non-professional production, *Godspell* was financed by Susan's personal assets, and enlisted the services of some of the heavy-weights of the professional industry.

Currently the Manager of the Kingston Arts Centre in Melbourne, Susan has been involved in theatre for over twenty years. Susan started as an actor and trained at Rusden before moving into the field of applied sciences. Throughout this time Susan was directing and producing shows, and developing her philosophy about theatre. In 1990 Susan founded Paragon United Artists, a company based on her beliefs and 'dedicated to excellence and quality, without compromise'.

## Disgruntled with the theatre scene

"I started the company because I wanted to create a platform for young performers and I wanted to break down barriers. I was disgruntled with the theatre scene at the time. I hated the magical barriers that existed between the orchestras or bands, and the principals and ensemble, and front of house and backstage crews. It used to drive me to the point of insanity. So I decided to form a company that was totally about equality. It didn't matter who people were or what they were or where they'd worked before."

The result is a diverse company providing opportunities in musical theatre, repertory theatre, artists in concert, and original works.

"There are no memberships, no mailing lists, no patrons or board. It's just me and it's a project by project operation."



While Paragon has produced many shows over the years, it was Susan's dream to take on a high profile musical to showcase young undiscovered performers. *Godspell* was chosen because of the versatility of the piece, and because of the type of performers needed for it. The 1970s musical based on the gospel of Mathew had not been performed on a grand scale in Melbourne since the hugely popular 1971/1972 production which launched the careers of Colleen Hewett and Collette Mann and ran for over 500 shows.

"There are very few shows or products available that provide an equal platform for the performers. It's an unusual product in that each of the roles has equal importance. There are only two identifiable characters - Jesus and Judas; the rest are just the performers playing themselves."

The road to *Godspell* began twelve months ago. Serious work started in January when the creative team met to discuss imagery, updating the concept, and the all important marketing strategy. Auditions took place in June and rehearsals began in July allowing for a two and a half month rehearsal period.

"We had to take into consideration that the cast were young people with study and work commitments, so rehearsals were three nights a week in the Hampton Uniting Church Hall."

A huge response to the auditions led to the casting of an extremely talented group of young people with diverse performance backgrounds. Susan explained that due to the limited resources for the production they were unable to pay the fourteen cast members for their time. Instead, the cast were given the opportunity to be seen in a high profile production in a professional venue and to experience the promotional

(continued over)



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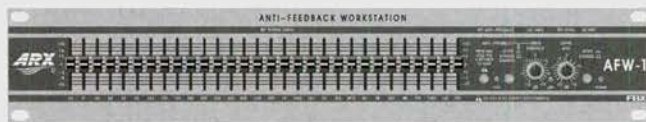
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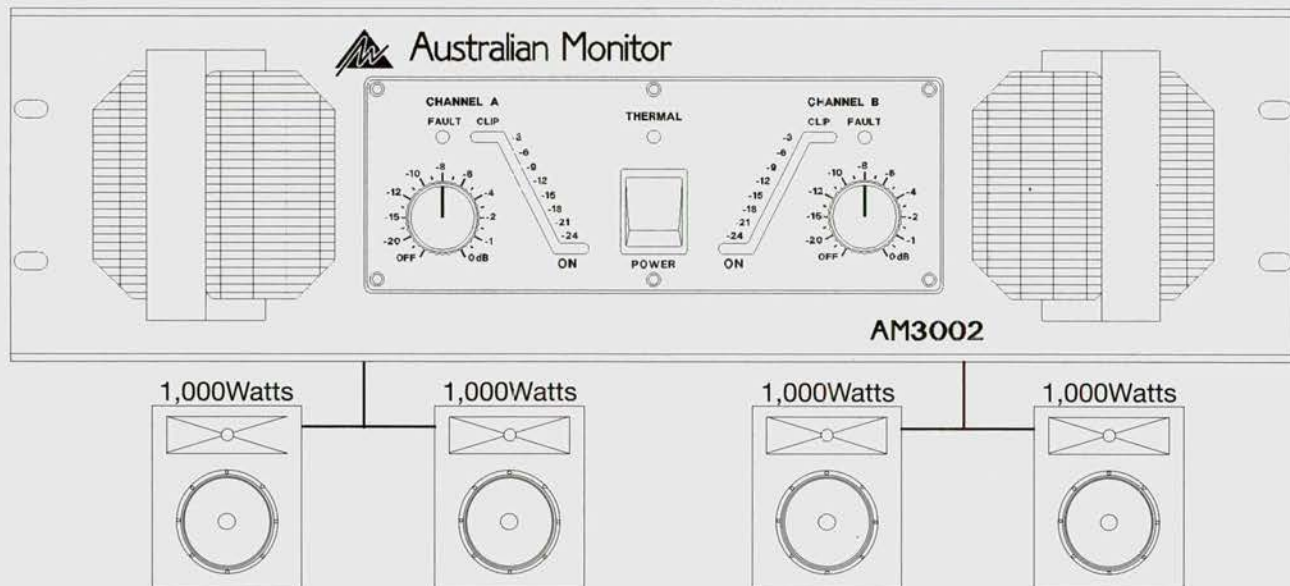


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## Risking everything (continued)

circuit by appearing at benefits, on television and radio, and in most of the print media around Melbourne. And the response from casting agents has been encouraging with offers of work flooding in.

"I wanted to provide a training ground for up and coming artists so that they would be prepared for when they get their break."

To remain true to the principle of giving young unknown performers an opportunity, Susan did not consider casting a 'star' as an audience drawcard.

"Some people have asked me why I didn't put a named artist into the show, but that's against the whole philosophy of it. Named artists are already working - that's why they've got a name!"

### The Edge

To give the production a new edge, Susan and her creative team looked at ways to contemporise the show through costume, lighting, choreography, and most importantly through fresh musical arrangements of the original score.

"Getting it to the stage was incredibly challenging. Musically, it's really late 80s because what is 90s music? That was what we were faced with - do we make it *Chemical Brothers* and risk only three people coming to see it, or do we make it a contemporary mix so that those who saw the original production wouldn't be terrified by the music, and those who had never seen it before could just hook into it."

Ron Leigh, guitarist for the original Australian production of *Godspell* and Musical Director for Colleen Hewitt, took on the role of Musical Director. Assisting him was John Foreman, Musical Director of *Good Morning Australia*, who came on board to create new arrangements of the songs.

"The whole show was based on the music. The arrangements were all done individually. The songs then dictated the feel for the next part of the show so it was a really interesting exploratory process."

### Answering the Call

One of Susan's greatest achievements in producing *Godspell* was the recruitment of industry professionals to help out with the production. Susan credits it to simply sharing a vision.

"It's been a real bonding in a sense - people realised how far I was willing to go against the odds to do what everyone else was terrified of doing. It's not about me, or *Godspell*, it's about supporting young artists and giving them a go because there's nothing else. People just embraced that belief and came on board."

Professionals who contributed their time and expertise included lighting designer Rohan Thornton, costume designer Xen Pardoe Miles, and musicians Ron Leigh and John Foreman.

"I'm really grateful and very humble that people have said they believe in what I'm doing. It's the 'we' syndrome - sharing a vision and just going for it and making it happen."

### The Fiscal Reality

Speaking two days before the end of the season, Susan Cooper has come to terms with the fact that *Godspell* has not come out in the black. She knew that staging a production as large and demanding as *Godspell* was not going to be easy and that factors such as finance and marketing were going to be a cause for concern. Despite this, she is amazingly good humoured as she talks about the challenges and achievements of the production.

"I invested everything I own in the world in this show. I own a unit, a car, electrical equipment, computers - it was a pretty big challenge for me, but something I believed in strongly enough. I didn't want to turn 90 and ask myself 'What If?'"

While Susan couldn't talk figures for reasons of "depression" she identified the four major expense areas that made up the six figure budget: lighting, royalties, venue and marketing.

Susan has no regrets about mortgaging her belongings for the production. "I'm the only one who cops the debt - nobody else. So I've

done my job in that I've delivered what I promised to everybody. I'll just love the show for the next fifteen years while I pay it off!"

The *Godspell* marketing plan targeted four major audience demographics - young people who would enjoy a 90s style musical production, Baby Boomers who saw the original production in the 70s, Faith communities, and regular theatre patrons.

"It was a big gamble - we needed 9000 people through the door. But if you believe in something strongly enough you're prepared to sacrifice everything."

"I see people who climb Mount Everest - I couldn't do that, but to them it's nothing. What I'm doing is no big deal either, it's just something I happen to believe in. And if you're passionate about something you'll do whatever it takes."

"I can be very philosophical about it because that was the risk I took in the beginning, and it's the same for any independent producer. There aren't many people who are stupid enough to do what I've done for this very reason."

To Susan, the risks associated with independently producing and financing a production were well worth it if it meant maintaining complete artistic and final control over the project, rather than working within restrictions imposed by outside investors.

"There was no-one telling us what to do - we could do what we wanted within our resources. And if the only thing that hasn't happened with the show is breaking even, then that is amazing. I know that the performers have been seen and that the show is a quality product - if it was a dud then I'd probably be nailing myself to the middle of the highway waiting for a truck to run me over."

The drop in the live entertainment scene in Melbourne was a factor that impinged on the *Godspell* budget. Susan said that Melbourne audiences' loss of faith in musical theatre has impacted on the confidence of the entire industry.

"There's a lack of confidence in theatre, full stop. It has affected us but at least we went on and did our full season. We fulfilled all our goals and no-one is walking away from the project disappointed that things didn't happen."

Susan's one regret about the production is the season length. She believes extending the season by another four weeks at the Universal would have made all the difference.

### Digital Hell

To create a 90s feel for the show, Susan approached Channel 9 Lighting Designer Rohan Thornton to take on the challenge of designing the set and lighting. Rohan designed a simple but versatile set, and a light show based on Robocolor Pro 400s, Vary Scans, Vari\*Lite (VL5), 1.2k fresnels and Par Cans, controlled through a Jands Hog 250 console.

"Rohan and his team were great. They all came down to help us with the programming because we were using technology we hadn't used before. I still prefer jam tins and car battery lights because this digital stuff is hell!"

"We were in a situation where Rohan said we were going to use this technology but we didn't understand it. It was scary as hell for us to go with a system that had no manual override."

"How do you cope when something goes wrong if that's all you know? We did pretty well - we survived a couple of crashes and had to reload. It was all part of the challenge."

Susan said that the exposure to the digital technology was important for the cast and crew because it was something that they had never worked with before.

### A Second Coming?

A regional tour of *Godspell* is still a possibility for the cast and crew in early 1998, although finance remains a major consideration.

"We're just going to put everything in storage for six months while I have my nervous breakdown, and then have a fresh look at it." •

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Dennis Murphy and Joe Bonano

## Getting that Big Picture

By Julius Grafton

The concert video is the most obvious piece you may have seen the work of Joe Bonano and Dennis Murphy, who trade as The Big Picture. They shoot, record and project images.

But 70% of their work is corporate theatre, and most shows are recorded - either for the customer or even for broadcast. Getting good images on and around a live performance stage is not as easy as you'd first think. There is light to deal with - depth, flair, levels and cues. Then there are the rock stars and production people themselves.

Many moons ago I remember an Abba gig where for perhaps the first time the concert was being shot for a film. A famously aggressive production company owner found a camera man blocking his way - and shoved the guy off the back of the stage.

The Big Picture guys recently worked with Stevie Wonder at Crown Casino, which is a favourite gig for them. "I'd tell Stevie where I was" says Dennis. "He'd go 'yeah, cool man! He's one of my favourite artists!" They used mini cameras at each end of the keyboards for

that shoot too.

Then there was the night that Dennis got a midnight call. Whitney Houston had just come off stage after her first show at Crown and demanded the next show be video taped. Nick Pitts, the production manager put out the call. Dennis had the quote faxed off at 7.30am, got confirmed at 9.30am and started getting a crew together. But Dennis was in Sydney, the show in Melbourne.

Missing the midday flight, Dennis got into Crown at 3pm, met the freelance crew, they set the show up and were ready to go. Ms. Houston cancelled the show at 7pm with the house filling. Dennis was non plussed and diplomatically refuses to reveal why.

Every taxi driver in Melbourne will tell you

a story about Ms. Houston staying up all night after the first gig, in the cigar room at Crown, puffing and grogging on until dawn. Or maybe she just didn't feel well.

Because the technology allows and the camera and editing work are to a standard, the guys have forays into broadcast work too. Dennis is currently directing a 12 week documentary shoot for Rolf Harris and editing it on an Avid.

3 to 6 camera shoots with projection are their speciality. It's all about vision. A show is always live. A fairly standard recording method is to take the final cut on one machine, with a second machine recording an image for a bump-cut - usually like an overhead of a fixed shot. This can be cut in later where you see something you don't like.

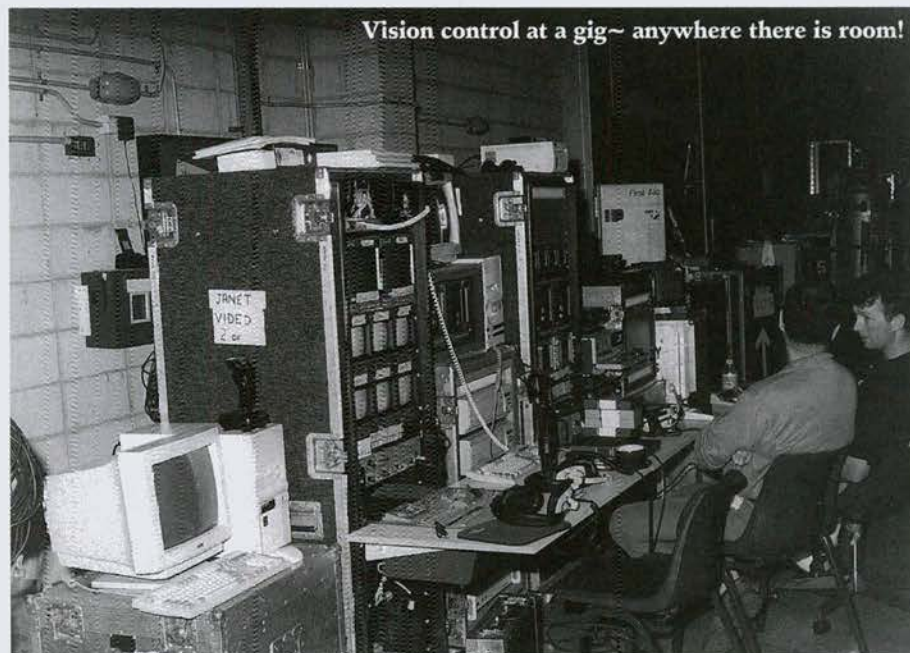
The vision crew are the last in and the first out, it's all overlaid on top of a production. The system is controlled from a rollabout of control racks which are usually parked somewhere backstage out of the way.

Some career highlights - the Bon Jovi concert at Eastern Creek, some years back, when the black clouds closed in. More water fell on the stage than anyone thought possible. One camera placed under the stage ended up in a muddy pool of water. The rig was dried off and the show went on.

They did the opening of Crown Casino. John Farnham did montage to a Johnny O'Keefe backing track and produced on a video bed with Farnham singing. It started with J.O.K. singing in black and white, then Farnham was cut in from the tape. It worked a treat!

Janet Jackson was so impressed with their work several years ago on her Australian tour that she took them through Europe.

• **Big Picture: +61 2 9439-0177**



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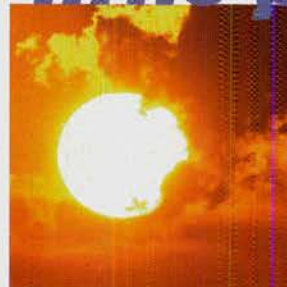
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## AUSTRALIAN MOVIE CONVENTION

Intercity Gearhouse operators from the Gold Coast office found themselves going to the movies on more than one occasion in the course of their work, as several spin-off functions emanated from their involvement in the 1997 Movie Convention.

The Convention was held at the Royal Pines Resort on the Gold Coast and was attended by senior management from some of Australia's leading movie houses such as Hoyts, Village, 20th Century Fox and Roadshow along with local and overseas representatives from movie distributors and production houses.

Intercity Gearhouse provided audio visual support for the function, screening pre-release movie clips using a Beta SP format and dual Barco 8100's projecting onto a 16' x 12' SuperScreens which were built into a truss lycra set. Colour scrollers and Golden Scan HPE's were used for changing the feel of the set. According to Intercity Gearhouse, the result was near-cinema quality sound and images.

Audio was mixed through a Soundcraft 32ch Spirit Live desk and reproduced through an Apogee sound system consisting of four AE5 Mid/High cabinets arrayed per side and four AE12 subs on the floor.

Computer graphics were converted to S Video through the Extron Emotia Extreme scan converter and mixed with other video sources by the Panasonic MX50 digital vision mixer.

Guests were transported to the local Birch Carroll Coyle cinema complex to see trailers from upcoming movies such as *Airforce One*. Using the projection room at the complex, Intercity operators used a Beta SP and Barco 9200.

"To our delight, more than one cinema projectionist was heard to comment on the superior quality of the combination and how it could threaten their career prospects!" said Rob Meek, Gold Coast Manager

for Intercity Gearhouse.

Spin-off functions from this event have included a technically complex presentation for 20th Century Fox which involved a simultaneous screening in two cinemas of footage on Beta SP and computer, using dual Barco 9200s which had been linked together.

Another involved the industry launch of the new Disney movie, *Flubber*, starring Robin Williams, for client Disney Studios. Laser lights were synchronised with the soundtrack to bring the Williams character off the screen and onto the cinema wall. The finale involved air canons which fired nerf balls into the audience. The event represented three weeks of organisation, including a week of midnight rehearsals which could only commence after the last screening of the day.

Finally, Intercity Gearhouse operators were chosen to work on the annual Hoyts Australian Box Office Achievement Awards which involved screening edited highlights of the year's major movies on dual Barco 8100s. At the end of the eight-minute mini-movie, guests gave the footage a standing ovation. Audio support was provided for the live entertainment provided by jazz singer, Grace Knight. • **CAT FORCER**

## CREW LIST

<b>Technical Director:</b>	Seb Champion
<b>Video:</b>	Martin Featherstone
<b>Audio:</b>	Faul Jamieson
<b>Lighting:</b>	Andrew Underwood
<b>Computer/Graphics:</b>	Cam Crawford



# Mandurah Performing Arts Centre

By Jacqueline Molloy

There's nothing like working backstage in a new venue and being surrounded by boxes of unopened equipment and the smell of fresh paint. *Mandurah Performing Arts Centre* held its gala opening earlier this year and this was indeed the scene backstage. Everything looked great from out the front while backstage the technical crew were hoping that everything that should work did! Fortunately the evening was a success.

*Mandurah Performing Arts Centre* is a uniquely designed and crafted venue about an hour's drive from Perth. It joins the growing number of regional venues that are rivalling capital city venues in terms of technical facilities and flexibility of space.

Situated on Administration bay in the Peel estuary, the venue has been designed to appear as though it floats on the water with the foyer design supporting this visual illusion by providing panoramic views over the bay.

Shane Lomman, the Venue Technician is enjoying the challenge of getting the technical systems up and running. "It's an exciting experience being the first technician in a new venue and at times it's also frustrating but overall I'm relishing the experience". He's enjoying the opportunity of setting up the venue as he would like it rather than having to fit into routines dictated by others. Lomman has had the opportunity before to work in a new venue as he was one of the first technicians to work in the *Victorian Arts Centre* when it first opened and he's finding it interesting comparing the two experiences.

"It's a very different perspective that you have being the boss in a new venue to being a lowly tech which is what I was at the arts centre when it first opened".

The main performance space is the *Boardwalk Theatre* which seats 800 though the circle can be blacked out to reduce the seating to 240 which provides an intimate space that still permits full access to technical facilities.

The theatre has a 14 metre high by 7.6 metre wide proscenium arch and a stage depth of 11 metres, with wing space on either side of stage. There is a decent sized workshop that opens onto the loading dock. One of the most stunning aspects to the venue must be the fact that the dock doors open onto the bay which is a glorious view but a bit harsh on the eyes of unsuspecting techs who've been confined to darkness!

The theatre has a single purchase flying system with 51 lines and can be operated from prompt side either on the stage level or from the gallery. The orchestra pit has a hydraulic scissor lift and can be set at either pit, auditorium or stage levels to allow for flexibility of use. So far the venue has catered to a diversity of acts which have taken advantage of facilities such as the sprung stage floor.

*WA Ballet* recently performed there with "*A Midsummer Night's Dream*". Other acts include; *James Morrison Big band*, *Elvis to the Max* and *WA Symphony Orchestra*. The venue has been built to appeal to the local arts community as well as touring productions though Lomman says it's taking a while for the local community to

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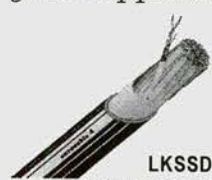
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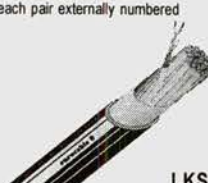
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## Mandurah Performing Arts Centre *(continued)*

appreciate what the venue can offer them.

The lighting system has some facilities which Lomman is not altogether happy with such as the spot bar looming which he'd like to replace with ducted lighting bars. At the moment load circuitry is fed through multicore fitted with a combination of bar circuit boxes to the onstage bars while front of house has a system of smaller patch panels. The dimming system is distributed and Lomman finds this an interesting concept that he hasn't previously encountered. There are 12 portable Bytesize 2.5kW racks fed from a dual reticulated DMX distribution system.

So far Lomman hasn't been entirely impressed with the dimming as the system seems to have several recurring faults such as circuit breakers tripping when a channel is snapped to full though Lomman is optimistic that it will eventually perform the way it's intended. "The building like any new structure has its fair share of anomalies which we have to deal with, but nothing that time and LOTS of money won't fix!"

One of his first tasks on the job was to spend \$30,000 buying more luminaires and the venue now has a rig of around 140 luminaires and is a mixture of fresnels, PC's, profiles, floods and parcans with colour changers to provide some flexibility. An ETC Express 125 channel control desk runs the system and there is also a dedicated colour changer controller. Lomman spends any spare time he has making up 240 volt cables as the venue didn't possess any when it first opened.

Acoustically the *Boardwalk Theatre* has been designed to cater to a diversity of sound requirements. An acoustic which works well for unreinforced listening for drama and acoustic music although a full



PA and reinforcement system has been installed. This consists of an Allen & Heath GL3000 32 x 8 x 2 mixing desk plus left and right arrays of Electro Voice De.tamax and a flown centre cluster of 2 DML 1122f's driven by Electro Voice Amplifiers.

To cater to smaller productions the centre has a 150 seater blackbox called *The Fishtrap* plus an art gallery, dance studio and music room. Like any new venue it has its teething problems but the public and industry response to it has been positive. A major feature to its advantage is the glorious setting which will surely assist in making *Mandurah Performing Arts Centre* a drawcard on the touring scene. •

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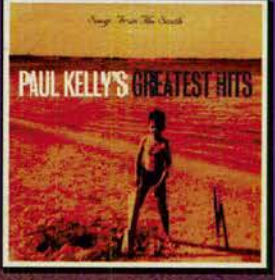
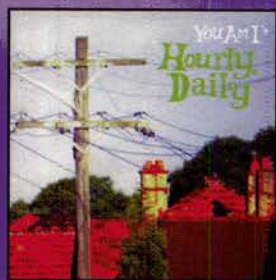
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# STUDIO & REPLICATION DIRECTORY

Connections Magazine special supplement

## Fastforward

**Welcome to our Studio & Replication Directory!** This pull-out guide is designed to be your resource to the industry in Australia, and in future editions, the region we service. This pull-out now appears twice a year, in November and March.

Connections is almost five years old, and indeed we have run our monthly BASF Tracking Guide the whole time. It is in the main body of the magazine, and as always is open for all at no cost for listings. See who is doing what, and where! People seriously use this Guide to assess facilities, engineers and producers.

People in the Studio business work in music, post, jingles and radio production. Studios today exist in convention centres, production firms, basements, garages and bedrooms. We seek to cover all these - except maybe the bedroom.

The distinction between an amateur and a professional studio is sometimes now just those few steps down the hall - from the bedroom to the home office. Make those steps and then Connections is there for you. If you aspire to make those steps towards professionalism, we're here for you too!

I have had fair criticism in the past, that I myself do not come from a studio background. This is true, I am a journalist who originally did live sound. But at Connections we do a lot of listening and a lot of research. ENTECH hosts a fair number of 'studio' oriented Seminars and Workshops. We learn, as you do - and we are enthusiastic about this medium.

So whatever corner of the business you come from, be a participant. Send us info, criticise where due, and please- read!

This Directory returns in our MARCH issue, and if you can help us improve it, please get in touch! See the back page.

• **Julius Grafton**, editor

◆ Tom Misner upgrades his expansion, moves to Artarmon

## Mirage to open top end studio

Sydney will get a new music recording studio large enough to record an 80 piece orchestra. Mirage studio owner Tom Misner will move the facility across the harbour, to Artarmon in January.

Originally the plan was to re-establish Mirage underneath the new SAE college facility Misner has built in Eastern Sydney, across the street from the existing premises. However "The school got too large".

With 7.5 metre ceilings planned, the new facility in Artarmon can record an orchestra with sound and vision facilities. The recording area is to be 380 square metres, with a 100 square metre studio area.

"It's for the top end, big mixing projects and film work. It'll have two Studer 24 tracks, and every effector there is. It's in line with what I own in Sweden".

The existing Mirage Neve VR console will be enlarged to a 48 channel frame with a separate patch bay and updated software. Marcel Gisel is the studio designer, he previously ran the Swedish studio for Misner.

was poised to start in the Reserve Road premises that Misner has purchased, subject to last minute council approval glitches. The lease on the existing Mirage premises expires in January, and the studio is booked out until December.

The new Mirage will include a dubbing and conversion service whereby you bring in a 2" tape and it can be converted to Adat, or Tascam standard. A mastering facility is also planned.

Surprisingly Tom is ambivalent about the business prospects for such a major investment. "The studio isn't a pure money making proposition, if its booked out it'll make enough to kick over, but not as much as I'm used to making now. I'm very wealthy".

The facility will cost around \$1.5m plus the value of the existing Mirage equipment.

"I want to give Australia a Nashville class studio, the current state of the art - so no-one has the excuse that they can't mix there. It's the only new place you can mix on large monitors - the Genelec 1039". ▼

In early October construction

>Loving to hate Tom: Page 10

## INSIDE

**PROTALK:** we polled Studio Owners about their business. Specifically, the BUSINESS behind the studio. Who does those books and pays the tax? Do they find themselves buried in paperwork (and Connections surveys!) WHAT makes their Studio better today than it was last year? There's a lot more, read about it from ..... page: 7

**THE CD PRICE DEBATE:** We bring you a condensed update on where this important topic is headed. Will it affect you? ..... page: 15

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# DVD Audio Standard Stranded

By **Buck Freeman,**  
Connections staff

**New York:** Expectation ran high that the long and painful process to determine a pure audio standard for DVD was due to end at AES in late September. The International Steering Committee, a world wide coalition of recording industry groups working together to develop requirements for DVD audio, had scheduled a demonstration at AES.

The press announcement stated that the DVD-Audio Working Group would host an audio presentation of the current state of their proposed DVD-Audio format.

This had escalated hopes that the standard had been determined, and there is a lot at stake. Bill Foster, editor of the replication trade magazine One to One flew from London to New York to attend the session during AES. He was disappointed.

'No official DVD audio standard set' was the keyline on a statement by the Recording Industry Association of America (RIAA).

This is, of course, the powerful lobby group which fronts the major recording companies, who have a lot at stake. They assert that extensive listening tests are underway to achieve the best audio standard and that a number of key issues are yet to be resolved.

These are political issues like copyright protection, copy control, and the possibility of a hybrid disk that would play in both a CD and a DVD player. Note that DVD was always intended to play existing Cd's.

The RIAA is very keen to ensure that whatever DVD audio standard emerges, profits will follow. The possibility of music releases longer than 74 minutes worries the majors, who would prefer a format that eventually results in consumers format shifting to DVD, as we all did from vinyl to CD. That particular format shift has buoyed recording industry profits for the past decade and is only now complete, as most of us have updated our old albums on CD.

Two DVD audio proposals

were actually shown and heard at AES. First is a surround sound 6 channel format, as seen and heard at the DVD conference at ENTECH earlier this year. Longer recordings would be expected with this surround sound format, but a hurdle: consumers would need a surround speaker system.

The second is the ultra high definition 24 bit 96kHz sample rate stereo bit management format proposed by Pioneer. This would provide a 'next generation' in clarity and higher dynamic range, at a cost in terms of recording time. In other words, CD duration but way cleaner with appreciable headroom.

ordinary CD information on a front layer - on the same side of the same CD. This of course allows either CD or DVD performance from one disk, dependant on the player type. Existing CD players will simply recognise the CD layer, DVD player lasers will read the bottom -DVD- layer.

The issues for recording studios are as follows:

First: surround sound or not. Many facilities are now mixing for vision and surround sound is already with us. Many consumers already have Pro Logic type surround sound receivers, and enjoy common video releases in a surround format. TV and advertising is increasingly mixed in 5.1 format.

Second is the proposed 96kHz standard which would turn the recording industry inside out. There are just a few 24 bit mixing consoles out there, the Sony Oxford is one and it costs more than an SSL. Digital recording for 24 bit is here with Pro Tools 24, and Fairlight have shown 24 bit -

*(continued on next page)*

The DVD audio standard is expected soon, we will post a note on our website when it is formalised.  
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## HYBRID HIDES

Not shown or heard at AES was the Philips and Sony proposal for a hybrid disk, which would entail DVD information on a layer, with

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DVD seeks audio standard  
(continued from prev. page)

upgrades for MFX and FAME. Every DAT machine would be redundant, as 96kHz sampling is required - and indeed Bill Foster can foresee people mixing down to half inch analogue tape on an Ampex ATR900 - to get the headroom!

So while the industry moves towards 24 bit digital audio, the political manoeuvring from bodies like the RIAA will have a lot to do with the wishes of the large labels, and the consumer audio people are keen to impose a new standard as well - to sell DVD machines.

It could well come to pass that DVD audio ends up a 20 bit format.

But Bill Foster sums it all up: "The consumers are not exactly gagging for DVD just yet!" •

\*Note that the DVD audio format is not the same thing as DVD video. This is a 5.1 format.

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and Midi production estab-  
lished 21 years. Music  
composing and arranging  
professional, friendly service.

**Bush Traks Pty Ltd.**  
Recording and Multimedia  
Unit 1, Bush Factory, NIMBIN  
NSW 2480  
PHONE: (02) v6689 1290  
FAX: (02) 6689 1210  
EMAIL: tigerye@om.aom.au  
CONTACT NAME: Ruth  
Miller. Award Winning air  
conditioned 24-track studio  
with in-house multimedia suite.  
Multimedia for musicians our  
Specialty.

**CD Makers**  
Audio Transferred to CD-R  
(at Tiger) 3/35 Mitchell Street,  
McMAHONS POINT NSW  
2060  
PHONE: (02) 9922 4700  
FAX: (02) 9922 3604  
EMAIL:  
a\_host@geocities.com  
CONTACT NAME: Andrew  
Host. Audio to recordable CD,  
digital editing and compiling  
available.

**Charing Cross Studios**  
24 Track Neve 8016 &  
Automation  
312 Bronte Road, CHARING  
CROSS NSW 2024  
PHONE: (02) 9387 8362  
FAX: (02) 9369 3910  
CONTACT NAME: David  
Sykes - Manager. Studer A80  
MkIV 2" Machine Studer A80  
1/2" Machine Valve Compres-  
sors Valve Gates Pultec  
Neumann 49,249,69etc...  
Ribbon Mics JBL, NS10  
Automation.

**Cloud Studios**  
24 Track 2" 32 Track Dig  
Automtd.  
11 Mardi Road WYONG  
NSW 2259  
PHONE: (02) 4353 2429  
FAX: (02) 4352 2637  
EMAIL:  
cloud@ozemail.com.au

CONTACT NAME: Parris  
MacLeod Cloud Studios  
offered exclusive recording  
environment with top quality  
equipment professional staff  
and competitive rates.

**Colin Black Productions**  
Freelance Audio Engineer  
PO Box 92 SEAFORTH NSW  
2092  
PHONE: (02) 9907 0237  
FAX: 9907 0237  
EMAIL:  
cydonian@tpgi.com.au.  
Professional Audio Engineer  
for Studio and Live gigs.  
Experienced with ProTools and  
Logic Audio.

## Crystal Clear Studios

24 Track Studio and CD  
Distributor  
9 Bridge Street,  
RYDALMERE, NSW  
2086  
PHONE: (02) 9684 1152 or  
015 106 776  
FAX: (02) 9898 1271  
CONTACT NAME: Dave  
Tozer 24 Track Adats.  
Amek big console, Total  
Recall dynamics automa-  
tion, Lexicon 300,  
Extensive Outboard,  
Neumann Mics.

**Damien Gerard Sound Studios.**  
Music Recording.  
64 Wattle Street, ULTIMO  
NSW 2007  
PHONE: (02) 9660 8776  
FAX: (02) 9692 9915  
EMAIL: crow@world.net  
CONTACT NAME: Marshall  
Cullen. Established fifteen  
years, Two inch twenty-four  
track full service facility,  
all other formats catered  
for.

**David Lawrence Music Productions**  
Recording Studio,  
2 Mission Terrace  
LAURIETON NSW 2443  
PHONE: (02) 6559 8766  
CONTACT NAME:  
David Lawrence. Digital  
multitrack and mixdown,  
midi sequencing and  
notation printing, jingles  
produced, songs written  
for artists.

**Deep Blue Music**  
Composition and Music  
Production  
Pier 21, Pirrama Road,  
PYRMONT NSW 2009  
PHONE: (02) 9566 4194  
FAX: (02) 9552 2652  
CONTACT NAME: Charles  
Edwards/Anthony Mott.  
Original Composition,  
Production, Sound Design and  
Audio Post for Advertising,  
Film, TV, Radio and Multime-  
dia.

**Digital CD Mastering**  
CD Mastering  
104 Alexander Street, CROWS  
NEST NSW 2065  
PHONE: (02) 9436 2113  
FAX: (02) 9436 2665  
CONTACT NAME: Bruce  
Sheldrick CD Mastering using  
Sadie Hard-disk Editing to  
DAT CDR Or 1630

**Duplitronics**  
Production - CD Replication.  
Suite 3, 22 John Street,  
WARNERS BAYS NSW 2282.  
PHONE: (02) 486 550  
FAX: (02) 48 4133  
CONTACT NAME: Robert  
Baker CD and CD-R manufac-  
turing artwork, printing &  
packaging Audio Cassettes  
wound to length and Dupli-  
cated.

**Feral Studio**  
Recording and CD Mastering  
24 Agne Ave Queanbeyan  
NSW 2620  
PHONE: (02) 6299 3224  
FAX: (02) 6297 0244 Contact:  
Jon Robertson. Your complete  
recording service awaits  
multitrack CD mastering short  
run or large run replication.

**Festival Mastering**  
Mastering - Makes it sound  
better!  
63-79 Miller Street,  
PYRMONT NSW 2009  
PHONE: (02) 9395 8075  
FAX: (02) 9395 8001  
EMAIL:  
edp@festivalrecords.com.au  
CONTACT NAME: William  
Bowden. High quality audio  
mastering at reasonable rates.  
Sonic Solutions, Genlec  
Monitors, Neumann Console.  
Comfortable environment.

**Festival Studio.**  
Recording Studio.  
63-79 Miller Street,  
PYRMONT, NSW 2009.  
Phone (02) 9395 8080  
FAX: (02) 9395 8001  
EMAIL:  
edp@festivalrecords.com.au  
CONTACT NAME: Mark  
Thomas/Matt Lovell. Classic  
Neve, 24 or 32trj, Studer MCI  
Mitsubishi. Large recording  
spaces, spacious control room -  
lounge, Great vibe.

**Figjam Recording Studios**  
Digital Recording and Mixing  
37 Kennedy Street, LIVER-  
POOL NSW 2170  
PHONE: (02) 9601 6159  
FAX: (02) 9601 6159  
CONTACT NAME: Anthony  
Bartlett. Fully MIDI equipped.  
Figjam=Fantastic Ideas, Great  
Jingles and Awesome Music.  
Just Ask Us.

**Haco Pty Ltd.**  
Maxell Tape Distributors.  
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FAX: (02) 9370 8951

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Studer tape machines  
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.. and a great atmosphere  
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# PROTALK

We polled Studio Owners about their business. Specifically, the BUSINESS behind the studio. Who does those books and pays the tax? Do they find themselves buried in paperwork (and Connections surveys!) WHAT makes their Studio better today than it was last year?

**Marshall Cullen** at Damien Gerard Studio says::

The first point is that if you are trying to run a business 3 years from the 21st century, and you do not use a computer you may as well give up now. Or of course go out and buy one.

Scheduling, correspondence, accounts, inventory, artwork, communications, etc... the list gets bigger almost weekly.

The next point about running a business would be promotion, promotion, promotion and... McDonalds is a household name but do you ever see them stop advertising?

There is a reason....IT WORKS. Just make sure you target your prospective clients and then get your name and services under their noses anyway you can.

Looking back over 15 years of accounts, I can see a direct correlation to years that when advertising expenditure is down, so is profit and vice versa. (We love you Marshall! -Editor)

In the studio business constant equipment upgrading and of course maintenance is a must. Also to stay in the limelight you must always be seen to be doing something new, even if it is just offering a new blend of coffee.

Customer relations are paramount and yes- the customer is always right, no matter what. It is a proven fact that one disgruntled client spreading bad news will need at least 10 or more ecstatic clients to outweigh the bad vibes, especially in the Australian tall poppy climate.

Bookkeeper? We once had a book keeper and unfortunately it was a bad experience. I'm sure it's a good idea if you find someone who understands a little about the studio business, eg: the difference between gaffa tape and recording tape, and doesn't simply post things wherever they feel at the time.

I have installed MYOB on the PC and I find I quite enjoy keeping the books up to date myself. (We also use and recommend MYOB here at Connections. -Ed) Call Marshall, +61 2 96608776

**Andrew Host** from CD makers says:

It's not exactly a recent thing, but one of my main rules is to keep up PREVENTATIVE maintenance. Not wait for something to break. When making CDs. I need to know that all the gear is in perfect order.

DO I FIND MYSELF BURIED IN PAPERWORK? No. All record-keeping is computer-based. The only paper is customer orders and invoices.

DO I HAVE A BOOK KEEPER? No. Being just a part-time business my "Quickbooks" account-keeping program takes care of financial records nicely.

WHAT MAKES MY BUSINESS BETTER THAN LAST YEAR? We have improved labelling for recordable CD we use has improved since last year.

Phone +61 2 9922-4700.

**Norman James McCourt** C'est Ca Recording

The Studio Business has never been tougher than in 1997. Sure the equipment is very cheap now, but it's different sometimes to make the equipment make money. In the music arena it is now very difficult to find good artists, and also very difficult to find Markets within Australia for good artists.

Remember 1974 (Sky hooks, Sherbet, The Aztecs, The Coloured balls, Madder lake, Chain, Blackfeather, Spectrum, Country

radio, Buffalo, Bakery, The Cepperwine, Hush, La De Das, Sebastian Hardie Carson, Daddy Cool, -should I go on? What Happened? (We got older. -Ed) Call +61 3 9419-1506

**Jon Robertson** of Feral Studios continues the theme:

Our Business has had to become leaner over the past couple of years cutting back on staff and excess equipment to service the current tough climate.

Changing directions to please our customers has been vital to remain in business, with more focus on the corporate sector.

Better staff and training have made our business better today and focusing on our long term clients has allowed us to get rid of a lot inventory we really don't need. Call +61 2 6299-3224

**Gordon Hervey** of Charing Cross Studios:

Preparing our annual returns has been in the capable hands of Suzanne Weaver at Taxforce for some years. Our business plan has been to continually restore tube equipment, such as 'A.W.A.' and 'Cates' compressors - and buy the best quality modern equipment as we can afford it.

We have waited for some years to add mixdown automation to the studio, and have recently chosen 'Mackie Ultimotion' because of its great sound and features. Early

*Continued on page 23>*

**Not Listed?**

**Is your facility a SECRET?**

**See back page**



**Paul Bryant**

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# STUDIO & REPLICATION DIRECTORY

CONTACT NAME: John Benfield. Sole Australian Distributor of Maxell Professional Audio and Video Tapes.

## Hadley Records.

Recording Studio and Labels  
5 Egreet Place TAMWORTH  
NSW 2340.  
PHONE: (02) 6765 7813  
FAX: (02) 6765 7813  
EMAIL: hadrecs@tpgi.com.au  
CONTACT NAME: Eric Scott. Thirty Seven years recording and promotive Australian Country Music.

## Harlequin Sound Production.

Mastering-Editing-Test Pressings  
PO Box 1A, MT KURING-GAI NSW 2080  
PHONE: (02) 9457 8304  
Contact: Winfield "Blicka" Blue. Established 1984. Employing dedicated Akai editing systems. Mail order CD-R available. Rates \$45.00 per hour.

## Independent Software Duplication

Compact Disc Replication-CD-R  
22/7 Packard Ave CASTLE HILL NSW 2154  
PHONE: (02) 9899 4044  
FAX: (02) 9899 4085  
EMAIL: 100253.30@compuserve.com  
CONTACT NAME: Vaughan Hillier. CD Replication from CD's, DAT, Tape masters Insert colour printing CD screen printing.

## Island View Recording Studio

Digital MIDI Analogue Jingles  
12A Split Solitary Road  
COFFS HARBOUR NSW 2450  
PHONE: (02) 6653 6848  
FAX: (02) 6653 6848  
CONTACT NAME: Rob Robertson Jingles production for TV and radio Song production demos automated mixing with full midi facilities.

## JMC Academy Pty Ltd

T/as Tracking Station Studios  
Recording Studio  
L3, 25 Cooper Street, SURRY HILLS NSW 2010  
PHONE: (02) 9281 8899  
FAX: (02) 9212 4801  
CONTACT NAME: Jennifer Dean One 16 Track Analogue, One 16 Track Digital, One 24 Track Analogue Dolby SR.

## JMC Pty Ltd

t/as JMC Sales, Audio Sales.  
Level 3, 25 Cooper Street, SURRY HILLS NSW 2010  
PHONE: (02) 9281 2444  
FAX: (02) 9281 2400  
CONTACT NAME: Mark Setchfield. CD and Cassette duplication, including art work. Quantity of 500+ for CD and 100+ cassettes.

## JMF Studio

Recording, Rehearsal & CD-R  
53 Meredith Street,  
BANKSTOWN NSW 2200  
PHONE: (02) 9790 4097

FAX: (02) 9793 9093  
CONTACT NAME: Fran Esther. X850 32 Track 24 track digital and analogue recording CD-R and rehearsal facilities.

## John Roy's Recording Studios

Digital Studio and Mastering  
PO Box 245 MANNERING PARK NSW 2259  
PHONE: (02) 4359 1418  
FAX: (02) 4359 2822  
EMAIL: jrstudio@ozemail.com.au  
CONTACT NAME: John Roy Jingles, Commercials, Albums, Soundtracks and Video Post Production. Winner 1997 ENTECH Award- Outstanding Music Technologist.

## Keystone Recording Studio

Recording Production Demos to CD  
68 Taylor Street ARMIDALE NSW 2350  
PHONE: (02) 6772 1838

## ◆ New Harrison console for SAFC

# Post facility shines with new console

South Australia Film Corporation's policy of stimulating and encouraging the formation and continued development of the film industry in South Australia, paid off with their successful investment in the film 'Shine' which was principally shot in Adelaide. To ensure the success

of their mixing theatre into their next millennium, they have installed a HARRISON Series Twelve audio mixing console equipped with 64 input channels, 24 prude inputs, 8 aux masters, film monitoring section and dual motorised, Automated panning joysticks.

The sister console to the HARRISON MPC (Motion Picture Console) which set the world standard in film mixing consoles in 1991, and was the first to-

tally automated, digitally controlled analog console. The Series Twelve shares the same hardware and software platform

S.A.F.C.'s console is configured for one or two operators. 32 channels with faders and full dedicated controls are situated either side of the central section. Another virtual channel layer of 32 channels, sits beneath these faders, and is immediately accessible individually - or as sections, giving a total of 64 channels. Any channel is con-

trollable from any position (either side) on the desk.

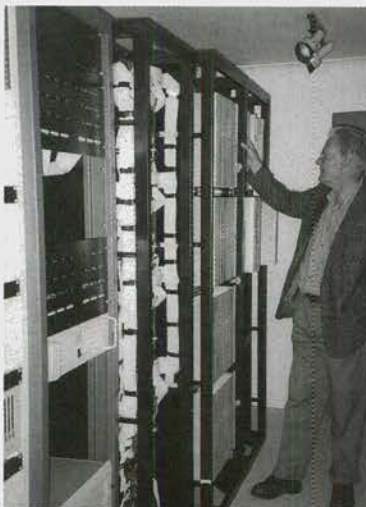
Full EQ and dynamics is provided on each channel as standarc. These functions, along with automated audio routing, are stored dynamically to the automation file.

The central facilities section includes a shared facilities and panel which delivers control of any channel. This control is available also with the remote Touchscreen, so providing in all, two alternative operational paths.

Other central facilities include a comprehensive film monitoring facility. The Series Twelve functions superbly well in Stereo, SEDS, SRD, 5.17 mix fomats; and has dual motorised, automotive panning joysticks for controlling complex film mixes.

Micheal Rowan, the Studio Manager of S.A.F.C. acceptance tested the console at Nashville, and remarked 'The mixers are in for a real treat once they got a handle on the power of this desk.'

Acoustisearch Melbourne's Managing Director Graham Therkell has represented Harrison consoles in Australia for 15 years.



Michael Rowan, studio manager, with Series 12 console racks



Brian Cox (Harrison) with sound editor Tony Young at rear

# STUDIO & REPLICATION DIRECTORY

CONTACT NAME: Alan Heeney. 16 Track Recording. DAT Mastering. Cassette Dubbing. Can record bands, duos, Soloists, choirs, ensembles etc

## LA Studios

Rehearsal Studios  
6/442 Victoria Street,  
WETHERILL PARK  
NSW 2164  
PHONE: (02) 9756 4953  
FAX: (02) 9756 4953  
EMAIL: stewart@mpx.com.au  
CONTACT NAME: Stewart Williams. Professional Rehearsal complex with 5 Airconditioned Studios (6m x 6m). Catering for all band needs.

## Lee Street Studios

16 Track Digital Recording.  
23 Lee Street LAWSON  
NSW 2783  
PHONE: (02) 4759 1372  
FAX: (02) 4759 1372 Contact Name John Summers. Classical and Acoustic specialists, ADAT and Hard disk. CD Mastering. Completely mobile for live recording.

## Lucinda Street Recording

Digital Studio/Mastering Suite.  
PO Box 285 WOLLONGONG  
EAST NSW 2520  
PHONE: (02) 4225 2272  
FAX: (02) 4225 2272  
CONTACT NAME: Rick Mostyn Digital Studio facility with Mastering Suite.

## Main St Studios

Recording Studio  
40 Princess Hwy CORRIMAL,  
NSW 2518.  
PHONE: (02) 4283 4515  
FAX: (02) 4283 5668  
CONTACT NAME: Robbie Specogna Fully Automated 16Track Analogue and Digital Studio, Excellent New Live Rooms. Call in and see.

## Megaphon Acoustic Design Pty Ltd.

Sound Studio Acoustic Design  
PO Box 3040  
MARRICKVILLE NSW 2204.  
PHONE: (02) 9557 2008  
FAX: (02) 9550 4320  
CONTACT NAME: Shane Fahey. Acoustic Design and specifications, soundproofing,

noise control, professional music studio and control room design.

## Megaphon Studios

Recording Facility  
Level 2, 8/75 Mary Street ST  
PETERS NSW 2044.  
PHONE: (02) 9550 6576  
FAX: (02) 9550 4320  
CONTACT NAME: Guy Dickerson. 24 Track Digital and Analogue, 40 Channel Raindirk Console, Large Acoustic Recording spaces, Baldwin Concert Grand Piano.

## Mirage Studios

Mixdown and Recording  
68-72 Wentworth Ave SURRY  
HILLS NSW 2010  
PHONE: (02) 9211 3915  
FAX: (02) 9211 3308  
CONTACT NAME: Gerry Nixon Sydney's premier mixing facility. Neve console, Studer multitracks, Lexicon and TC effects, total recall automation.

## Morrison Studios

Mastering,  
PO Box 1404, CROWS NEST  
NSW 2065  
PHONE: (02) 9901 4414  
FAX: (02) 9901 4486  
EMAIL: whippoorwill@nol.com.au  
CONTACT NAME: John Morrison. Producer John Morrison provides 24 bit mastering for Jazz and Acoustic needs. Ring for details.

## Noise Gate Studios

Recording and Rehearsal Studios.  
B6/2A Victoria Ave CASTLE  
HILL NSW 2154  
PHONE: (02) 9680 3919  
FAX: (02) 9899 2279  
CONTACT NAME: Ian Pritchett. 4 Rehearsal Rooms. Live to DAT or Multitrack Recording.

## Oak Tree Studio

Audio Recording and Production  
18 Oak Tree Drive  
ARMIDALE NSW 2350  
PHONE: (02) 6772 6221  
CONTACT NAME: Colin Bale. 16 Track Digital Recording plus Music master Soft-

ware.

Pacific Mirror Image (Sydney)  
Address: 2A Woodcock Place  
LANE COVE NSW 2066  
Phone: (02) 9418 3044 Fax:  
(02) 9418 3175. Contact  
Graham Durkin. CD and CD-R  
Manufacturer.

## Paradise Studios

High Quality mixing and recording  
70 Judge Street,  
WOOLLOOMOOLOO  
2011 NSW  
PHONE: (02) 9357 1599  
FAX: (02) 9357 1841  
CONTACT NAME: Jason Lea Valve/Solid State custom mixer. Uptown moving fader automation video sync. Huge range of Vintage & class A outboard gear, Neve, Jensen, Avalon & Telefunken. Excellent Mics & Variable Acoustics. 5 Separate Recording Areas. Recorders MC1 & Sturder A800 24-Trks, 2" analogue. 1/2" MC1 & Tascam 2trks. DAT 2 Trks etc. Monitors: Tad1 JBL Grunberg main, Yamaha NS-10s, AR-18s & Aurotone. 20 years in Business. Fully World Class, Professional facilities at affordable rates.

## Paul Bryant Mastering

CD Mastering Suite  
PO Box 6339 SILVERWATER  
NSW 2128  
PHONE: (02) 9748 02222  
FAX: (02) 9748 6152  
CONTACT NAME: Paul Bryant CD Mastering specialist Since 1989 New Facility caters for independent CDs and Small label projects.

## Powerhouse Studios

24 Track 2" Analogue CD Recording.  
26A Bowen Street, ALEXAN-  
DRIA NSW 2015  
PHONE: (02) 9318 1220  
FAX: (02) 9318 1219  
CONTACT NAME: Doug Henderson 32 Input Neve Console Studer Recorder 2 Large Balanced Live Rooms Quality Mic's and Effects.

## Q Recording

High Quality Audio Recording  
Cnr Waine and Riley Streets,  
SURRY HILLS NSW 2010  
PHONE: (02) 9212 4851  
FAX: (02) 9211 2627  
CONTACT NAME: Richard Muecke. State of the art recording rooms run by audio professionals for project tracking and mixing.

## Quantegy International Inc.

Main Service Office: Profes-  
sional Recording Media  
104/51 Rawson Street,  
EPPING NSW 2121  
PHONE: (02) 9869 0600  
FAX: (02) 9868 5775  
EMAIL:  
peterhutt@quantegy.com.au.  
Manufacturers of Ampex,  
Quantegy Professional  
Recording media, Digital and  
Analogue audio and video  
media products.

## R & R Recording

Onhold Telephone Message  
Experts  
14 Newton Road,  
BLACKTOWN NSW 2148  
PHONE: (02) 9672 4494  
FAX: (02) 9622 1294  
CONTACT NAME: Robert Zimola. Professional Studios for Corporate Communications and Country Music Specialist. Analogue and Digital Recording catered.

## Raw Demos Studios

Digital Recording and  
Production  
77 Dollys Flat Road  
WINGHAM NSW 2429  
PHONE: (02) 6557 0667  
FAX: (02) 6557 0667  
EMAIL:  
rawdemos@midcoast.com.au  
CONTACT NAME: Kev.  
Marshalls on 11 or the swing  
of Country. Session musicians  
available. 8 or 16 track.

## Rockinghorse Recording Co.

Neve/Sturder 24 Trk& Digital  
Suite.  
PO Box 597 BYRON BAY  
NSW 2480  
PHONE: (02) 6685 6500  
FAX: (02) 6685 7400  
EMAIL: rockinh@om.com.au  
CONTACT NAME: Grant  
Hilton. On-site accommodation  
situated Byron Bay Hills,

◆ Tall poppy syndrome leaves SAE founder non nonplussed

## LOVING TO HATE TOM

By Julius Grafton

"They used to hate me in Australia, now I'm spreading the message worldwide!"

Tom Misner is the founder of SAE - the School of Audio Education, which has enjoyed meteoric international expansion in the past ten years. His latest plan is perhaps the boldest yet, taking SAE to the United States where it will open in five major cities next year.

Extremely significant is the strategy, which will see Walt Disney Entertainment take a role in the US venture, as SAE will provide ab-initio graduates to the entertainment conglomerate.

"Walt Disney need 2500 technicians worldwide every year" says Tom. The first facility in New York will feature ten rooms, one with a Neve console, an SSL console, an MCI "the old fashioned way" and Yamaha 02R and Pro Tools suites.

Tom will live in Oyster Bay, Long Island for a while, with his wife and two children. "We broke up but we got together again. We are separated but we are back together", he explains.

"I'm a citizen of the world. I see benefits everywhere, same as Australia".

Tom is of German descent and so has a unique perspective on Australia. It's similar to what we've hear before:

"Once you're successful in Australia they cut you down. When you start off, (in business) everyone says 'good on you mate', but when you make the

mistake of not going broke, of actually being successful, they try to hack you down. You'll then either survive or not, which is good training".

"It's so unconstructive".

Take Connections for example.

"It's good. You persist. It's obvious you don't get the support of all the advertisers, because of politics. I think it's necessary, you need a magazine. There's been comments in the magazine in the past that weren't exactly favourable to me, but so what? I'm not going to write off the magazine for it. The industry needs a voice.

If Connections ceased they'd all go: 'well that's a shame, we really needed an industry magazine', and then you'd be a good guy again. They'd go 'well he tried, but he failed!'"

Tom has faced criticism in some studio circles in the past because those in that industry don't see the need for a training college when the job base is shrinking. He dismisses this, "The good students get jobs, perhaps not in recording studios, but in multimedia, audiovisual, conference centres. They can get jobs".

These days the knockers say

Tom isn't an Australian either, but this is purely academic.

"I will come back to Australia, I still have a house there. The studio (Mirage) is me putting something back into Australia instead of somewhere else".

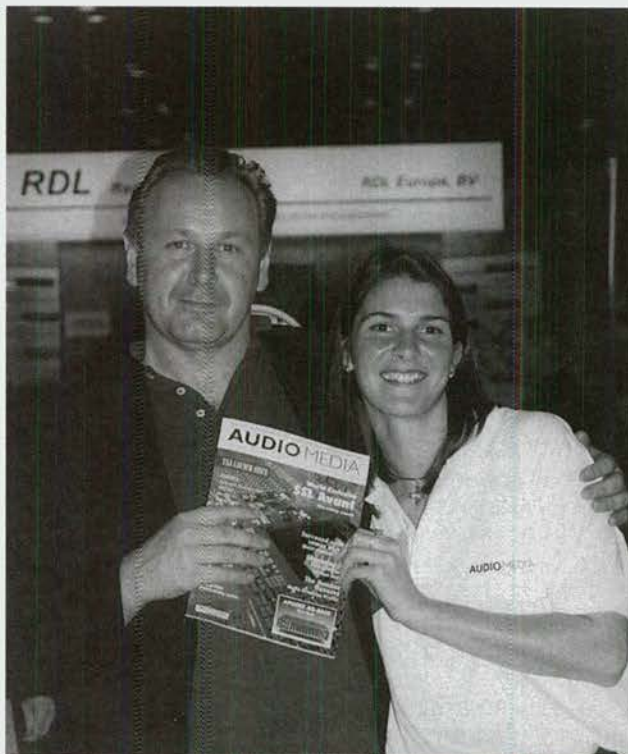
It's recognition that Australia gave Tom his break. "Look, there's lots of talent, lots of creativity, lots of freedom in Australia. In Switzerland I even have to tell the police if I change my address! I live there at the moment".

"Australia's a very good training ground. People around the world find it a fascinating place, you speak English, well kind of anyway, and there will not be revolution. It's a nice place to work. But only a small percentage of people are professionals".

Tom nominates some Australian who have made a mark: "Sound Firm; Roger Savage, Doug Brady, Lake DSP, Mark Moffat, Graham Thirkel - there are a few innovators. Australia produces some very good people. And some very bad people".

Citizen Tom prepares to leave, to sample the delights of the Audio Engineering Society trade show in New York where I am interviewing him. His parting comment shows his style, for he is truly relaxed about who he is and where he is going:

"You know, I still have people in Australia who've seriously hated me for 20 years. I think they should continue to do so, because if I died they'd have no mission in life, no one to hate!"



Tom Misner pictured in New York, with Audio Media journalist Helen Martin. "I dare you, take the picture with THIS magazine"

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	20 - 49	\$11.50	1 colour print, jewel
	50 - 100	\$ 9.30	case and Sales Tax.
	100+	\$ 8.40	

A once only mastering fee of \$50.00 for DAT / HDD applies.

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- CD Pressing - For quantities larger than 200 call for prices



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### Stage Management & Theatre Administration

**\$29**



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

### Stage Design and Properties

**\$29**



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

### Projection for the Performing Arts

**\$69**



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

### Stage Makeup

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

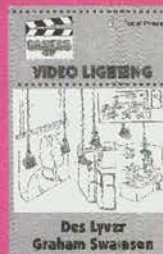
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Published by the Entertainment Services and Technology Association (ESTA), this guide contains the recommended practice for Ethernet cabling systems in entertainment lighting applications. The book addresses practices for determining cable lengths, labelling, system identification and specific elements of commonly used Ethernet hardware.

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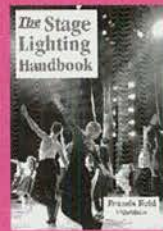
**\$25**



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

### Stage Lighting Handbook

**\$39**



By Francis Reid.  
Fifth Edition. This standard illustrated guide incorporates recent advances in technology in areas such as light sources and instruments, including remotely-focused spotlights and computer aided design. In 1974, Connections editor Julius Gratton read the first version of this book and went out to successfully light a professional stage play. It can be done! 224 pages, 1996.

### Set Lighting Technician's Handbook

**\$75**



By Harry C. Box.  
This book provides students and budding professionals with practical hands-on information about standard practices, equipment and tricks of the trade essential to the motion picture set lighting technician. Covers electrical distribution and regulations, HMI and arc light operation plus set protocol. Includes more than 150 illustrations and 100 tables. 377 pages, 1993.

### Basic Stage Lighting

**\$17**



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

### Effects for the Theatre

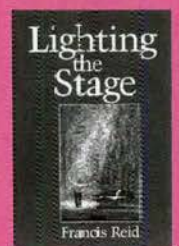
**\$34.50**



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

### Lighting The Stage

**\$36**



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

### Concert Lighting

**\$94**



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

### Recommended Practice For DMX 512

**\$19**



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

# CONNECTIONS SHOP

## Sound & Music for Theatre

**\$44**

By Kaye & LeBrecht.

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



## Professional Lighting Handbook

**\$95**

By Verne & Sylvia E. Carlson.

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



## Lighting and Sound

**\$29**

By Neil Fraser.

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



## Practical Studio Techniques

**\$40 WITH CD**

By Tom Misner.

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



## Music & Technology

**\$29**

By H.P. Newquist.

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



## Making Music with your Computer

**\$39**

Edited by David (Rudy) Trubitt.

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



## Tech Terms

By George Petersen & Steve Oppenheimer.

**\$19**

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

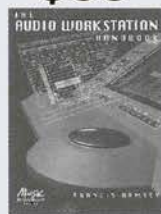


## The Audio Workstation Handbook

**\$55**

By Francis Rumsey.

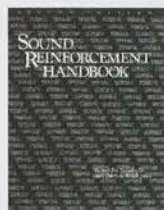
A complete guide for students, operators and engineers on digital audio and associated technologies. Contains vital information on MIDI control and computer soundcards, audio workstation principles, mass storage devices, files transfer and networking, audio interfaces and digital video. Similarly, those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



## Sound Reinforcement Handbook

**\$69**

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



## Live Sound Mixing

**\$35**

By Duncan Fry.

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



**\$48**

## Concert Sound

By David (Rudy) Trubitt.

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



## Effective Audio-Visual

**\$65**

By Robert Simpson.

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



## Hums & Buzzes Explained

**\$9**

By Laurie Nethercote.

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



## Making the Ultimate Demo

**\$49**

By Michael Molenda.

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



## Sound for Picture *Edited by MIX Magazine.*

**\$39**



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

## Music Producers *Edited by MIX Magazine.*

**\$39**



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

## Electronic Projects for Musicians

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*By Craig Anderton.*



A comprehensive guide on how to build your own Preamp, Compressor/Limiter, Ring Modulator, Phase Shifter and Talk Box along with 22 other inexpensive electronic accessories. Written in clear language with hundreds of helpful diagrams & simple step-by-step instructions. Includes free demonstration record of electronic effects. 220 pgs.

## The Best of Duncan Fry

**\$12**



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

## Lighting Stencils **\$95**



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## Control Systems For Live Entertainment **\$86**

*By John Hurtington.*



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

## Studio Seconds **\$19**

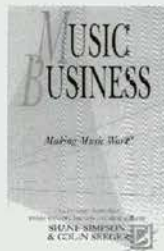
*By Tom Lubin.*



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

## Music Business **\$49**

*By Shane Simpson & Colin Seeger.*



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

## MIDI Systems & Control

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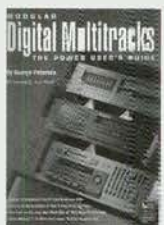
*By Francis Rumsey.*



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

## Modular Digital Multitracks **\$49**

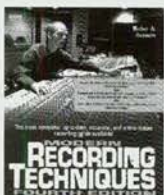
*By George Petersen.*



A personal guide to new recording industry technology with analysis of systems such as Alesis ADA, Tascam DA-88, Fostex R3-8, Akai A-DAM and Yamaha DMR8. Explores features that aren't mentioned in the manufacturers' literature, reveals secret button pushes and explains maintenance and auto-diagnostic procedures. 120 pages, 1994.

## Modern Recording Techniques **\$49.50**

*By Huber & Runstein.*



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

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## CD IMPORT DEREGULATION - THE BIG PICTURE

By Caroline Grafton

Never before has a single issue caused so much concern in the Australian recording industry.

It all goes back about ten years, three prime ministers and two governments ago, when Professor Allan Fels, Chairman, Australian Competition & Consumer Commission commenced a Prices Surveillance Authority (PSA) inquiry into CD prices.

At the time Paul Keating said that Mr Fels was "a nymphomaniac for publicity".

So the industry was digitally probed, with those findings being tabled seven years ago. One result in 1990 was the decrease of CD sales tax from 32.5% to 20%. Since, there have been a two small lick increases so it has risen up to 22%.

Professor Fels has recently argued that the then sales tax saving was not handed on to the consumer by the record companies and that the situation is likely to be repeated. This is Professor Fels argument for import deregulation instead of sales tax reduction.

### Deregulated - how?

In effect the new laws, which are currently queued up in the Senate awaiting implementation, allow parallel importation. This means that any record company can import the same title as an established record company has the rights to locally. These CDs can be sourced from wholesale outlets elsewhere, and imported into Australia for retail sale.

The artists who originally recorded those CD's gets their royalty from whomever controls the manufacture of the CD.

Because of the current controls over import, retail CD pricing has been perhaps *unwittingly* controlled by the top six record companies.

Locally produced and imported product have also hit the retail shelves at similar retail prices, any margin variations are not always handed on to the consumer.

### Pros and Cons

Are there pros and cons in the demise in control over imported

CDs? Of course there are.

The obvious pro being the possibility of saving of a few dollars on a CD purchase by the consumer. This is simply because Australia currently has a high wholesale cost for CD's. Because none of the major record companies are interested in selling CD's for less money than they now get.

But in all honesty, in a world of computer ordering over the internet, this can easily be achieved anyway. People can and do buy CD's at lower retail prices from mail order firms in the USA and elsewhere.

When the publisher of the Australasian Music Industry Directory (AMID) Phil Tripp pointed this out at one of his conferences, and was widely reported in the media, the reaction was savage.

The following issue of Tripp's Directory had pages of notable omissions - where previously the major record companies had advertised. The ad's were pulled. The normally voluble Tripp refuses to talk about it.

### An easy way to save

The government could consider dropping the 22% wholesale sales tax on CD's as it has done with other media platforms such books and software. Sales tax revenues raised annually on record/CD sales exceed \$100 million.

I dare say the Senator Richard Alston, Minister for Communication and Arts would not like this loss attributed to his port folio.

A good quote from Kieran Stafford, MD, Birdland Records in the Australian Financial Review:

*"For quite some time now we have heard the refrain that if the CD market was opened up to parallel importation, then prices would inevitably drop. It reminds me of the emperor's new clothes - just because you say something does not make it come true. The only way CD prices will drop is if the government removes sales tax from CDs Books don't have tax, porn magazines don't have tax, CD-ROMs don't have tax - so why tax music CDs?"*

The cons, on the other hand far

outweigh the saving to the consumer.

The top six record companies and their trade association ARIA have inadvertently bought on themselves a torrent of retaliative abuse. The industry is fairly united in the thought, that in the past there was little or no distribution of the vast profits accumulated from locally distributed and/or produced retail CD sales, throughout the greater recording industry. The majority of profits being absorbed into the coffers of the Top 6. Sadly, all record companies are about to pay for past arrogance and greed of the Top 6.

This is why: *"The power of the companies (record) over the performers is considerable and the companies will do whatever necessary to protect their privileged position"* - so said Professor Allan Fels, in the Sydney Herald.

Here's the rub: while the Top 6 still dominate the market, hundreds of independent distributors have bloomed, carrying thousands of independent labels, for both local and overseas artists. They sell what the Big 6 have passed over.

These indies have consistently endeavoured to keep prices down and quality up. The change of copyright laws will most likely devastate these smaller distributors, who are totally undeserving of such treatment. In an open market, others will wholesale their most profitable releases.

The average consumer will in all likelihood increase CD purchasing, imported or locally produced, but the spread of the dollar across a broader group of suppliers will indeed impact with a revenue decrease per company.

### Studios and artists

From the artist, writers and studios point of view, there is equal uncertainty. The record companies are pontificating that with a reduction of profits, less funds will be contributed to local A & R. These behind the scenes scare tactics have been used on studios and artist alike. We have all been

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FAX: (03) 9826 3755  
EMAIL: dodgers@planetx.com.au  
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PHONE: (03) 9587 1956  
FAX: (03) 9587 2384  
CONTACT NAME: Tim Armstrong. Regency Recording's is the only wholly owned Australian Manufacturer and replicator of CD's and Audio cassette in the country. We do everything under one roof, including mastering, printing and assembly. We can also do any design work you may require. (So) work with the only independent that the independents live to work in Australia.

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FAX: (03) 9696 1480  
EMAIL: rowland@rowlands.com.au  
CONTACT NAME: John

**Saffron Audio**  
24 Track Studio Hire & Services  
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CONTACT NAME: Hubie Savannah Engineering and Production Services. Demo, CD Productions Live to 2 Track Recordings.

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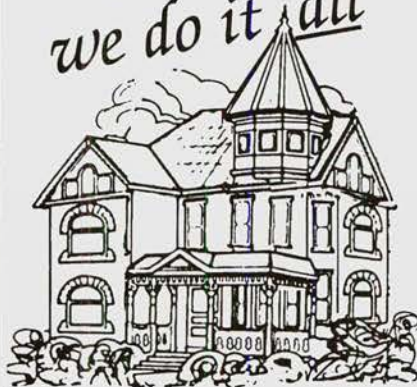
**Studio 44.1 Pty Ltd.**  
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PHONE: (03) 9701 5737  
Mobile: 0419 441 441

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# STUDIO & REPLICATION DIRECTORY

EMAIL:  
studio44.1@bigpond.com  
CONTACT NAME: Mark Fenner. 16 Track Digital & Midi, Rehearsals, Sales, Hire, Backing tracks, Storage, Entertainment and Refreshments.

## Studio 52

Complete CD Packages. 23-25A Johnston Street, COLLINGWOOD VIC 3066  
PHONE: (03) 9417 7707  
FAX: (03) 9417 5294  
EMAIL:  
kool@co31.aone.net.au  
CONTACT NAME: Paul Higgins. 24+32 Track Recording Studios. Graphic Art and Multimedia Production. CD Manufacturing and Distribution. Competitive Pricing.

## Studio International

Digital Recording & Mastering 166 York Street, SOUTH MELBOURNE VIC 3205  
PHONE: (03) 9696 7066  
FAX: (03) 9696 1577  
EMAIL:  
jdbond@ozemail.com.au.  
CONTACT NAME: Jason Bond 48 Track ProTools Suite Post Production Mastering Specialist Voiceovers DanceMix Specialists with lots of toys.

## Technical Revolution of Sound Pty Ltd.

Hard-disk Recording & Mastering.  
8/20 Docker Street RICHMOND VIC 3121.  
PHONE: (03) 9429 3569  
FAX: (03) 9429 3569 Contact Name: Don Steele. Complete digital studio for mastering, production, post-production, jingles, editing, web soundnotes, artwork, multimedia.

## The Music & Motion Studio

Digital Post Production. 14 Jedan Court ROWEVILLE VIC 3178  
PHONE: (03) 9755 5711  
FAX: (03) 9755 5722  
EMAIL: mms@wire.net.au  
CONTACT NAME: Sakis Digital Audio Post Production at it's best. Sound Restoration, CD Pre-mastering, one off CD's.

## Toyland Recording Studio

Recording Studio  
37 Cunningham Street, NORTHCOTE VIC 3070  
PHONE: (03) 9482 2111  
Mobile: 0412 060 664  
EMAIL:  
adamcal@ozemail.com.au  
CONTACT NAME: Adam Calaitzis. Toyland has 24 track analogue recording and logic audio for digital recording and editing. Automated mixing and digital mastering to DAT, CD or minidisc. Classic outboard like Neve prism. Lexicon 224X, Urei 1178, 1176 LA-4 and Microphones like U87A1 C414. KM84 etc. Digital samplers, keyboards and analog keyboards are included. We have a large comfortable control room and we do music CDs, Demos and Voice overs. For details call Adam.

## True Form Music Services

Recording Rehearsal Hire Sales  
10/59 Hudson Road, SPOTSWOOD VIC 3015  
PHONE: (03) 9391 0907  
FAX: (03) 9391 0907  
CONTACT NAME: Neil Gray Professional 24trk Recording Classic English Console, Five large Rehearsal rooms Established ten years. Personal Service.

## Wombat Rd. Recording Studio

32 Track digital and CD Mastering  
RMB 6696 BOISDALE VIC 3860  
PHONE: (03) 5145 4204  
FAX: (03) 5145 4204  
CONTACT NAME: Barrie Clissold. In house cassette duplication and custom CD manufacture specialising in band demo and commercial releases.

## Xtek Studios

Recording and Rehearsal Studios  
47 Johnston Street PORT MELBOURNE VIC 3207  
PHONE: (03) 9646 8833

FAX: (03) 9645 3748  
EMAIL: xtek@tpgi.com.au  
CONTACT NAME: Nic Moore. Ampex 2" 24 Track, MCI Console, cubase audio, one off CDs, two large Rehearsal rooms, great vibe.

## WA

### Bonsai Recording Studio

Analogue&Digital Recording/CD-Demo  
2 Timor Street, DUNCRAIG WA 6023  
PHONE: (08) 9246 4408  
FAX: (08) 9246 4406  
CONTACT NAME: Tom Thorpe Analogue Multitrack good Live Room mix automation, CD Burner, Excellent Midi Suite for Jingle work.

### Masterdisc Disc Duplication

Unit 3/71 Dover Road, SCARBOROUGH WA 6019  
PHONE: (08) 9245 4391  
EMAIL:  
mastdisc@networx.net.au  
CONTACT NAME: Nick Hassall. Anything from one off Cd's and Mastering to Production runs. Competitive Rates Guaranteed.

### Paramount Media.

Sound Recording.  
23 Franklin Road, WANNEROO WA 6065.  
PHONE: (08) 9405 3788  
FAX: (08) 9306 2177  
CONTACT NAME: Andy Priest. 32 Track Sound Studio, Digital Editing Tape Duplication.

### Poon Head

Recording Production Mastering  
238 Canning Hwy EAST FREEMANTLE WA 6154  
PHONE: (08) 9339 4791  
FAX: (08) 9339 4791  
CONTACT NAME: Sam. 2 inch analogue, adats, hard disk 48x16 console, automation, valve, and classic outboard, microphone, instruments, amplifiers.

### Pro-Copy

Suite 3, 10-12 Dewar Street, MORELEY WA 6062  
Phone: (08) 9375 3902  
Fax: (08) 9375 3903 Email: Procopy@msn.com.

Contact: Mark Whitehouse or Jo Wilkie. High quality audio cassette duplication, artwork preparation, on-cassette printing, CD packages and Sonic Solutions mastering and CD-R Replication. State distributor for BASF.

### SAE Technology College

Audio - Multimedia Education. 9th Floor, 231 Adelaide Terrace, PERTH WA 6000  
PHONE: (08) 9325 4533  
FAX: (08) 9221 4401  
EMAIL:  
saep Perth@networx.net.  
Contact: Dean Pearson. SAE holds full and part time courses which are Govt. and Internationally recognised.

### Studio: Music Centre

Rehearsal Studios  
9/87 Hector Street (west) OSBORNE PARK WA 6017  
PHONE: (08) 9446 2033  
FAX: (08) 9244 7706  
CONTACT NAME: Rowan Goss Established 1978, now right rooms equipment hire drinks etc.

### Troppo Sound

PA Hire Recording/Rehearsal Room  
66 Hunter Street, BROOME WA 6725  
PHONE: (08) 9192 2394  
FAX: (08) 9193 569/0  
CONTACT NAME: Mick Connolly Festival Production mobile Stage PA Lights backline personnel inclusive, recording studio 24 Track Dolby's CD+DAT Mastering.

### Witzend

Recording Studio  
21 Chamberlain Street O'CONNOR WA 6163  
PHONE: (08) 9331 1818  
FAX: (08) 9331 1818  
CONTACT NAME: Alan Dawson. 16 Track, Tascam MSRIGS Recorder. Tascam 3700 automated console, instruments available, SMPTE MIDI equipped.



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## CD IMPORT DEREGULATION - Will you be rooned?

Continued from page 15

blitzed with the ARIA promotion, portraying distressed artist pleading for local music industry support. But maybe it's a little late for affirmative action and the message is a little too ambiguous for the average consumer. On the other hand some artists have even been heard calling the whole thing 'a storm in a tea cup'.

And, there are those who question just how much the major studios actually invest in the scene. "Over the past 4 years, 14 recording studios have closed in Sydney and Melbourne. This is a direct result of the decline in artist investment", says Jim Taig - owner of Studios 301 in Sydney (quoted from Phil Tripp's online news at www.immedia.com.au).

### Royalties

Nevertheless, the development of local talent is not the only concern. Artist and writers rely on royalties from the sale of records and CDs. Under the new laws it would be virtually impossible to control imports from some countries with very few copyright scruples or pirate copy protection.

Customs are just not equipped to handle the quantities or the style of product about to hit our shores.

Andrew Scott, a Studio Sales Consultant with Syncrotech Systems Design said: "At a time when other markets around the world are expanding copyright laws, why would an artist/act sign with an Australian record company when they can receive more protection by signing with an off-shore company under stricter laws? The CD prices banded about by the government are ludicrous, most CDs even new releases can generally be picked up for \$23.95 not the \$29.95 figure quoted".

### The effects

The decision could perhaps bring about the downgrading or relocation of replication plants off shore, triggering a major impact on local employment.

As well, changes in the structure of publishing houses, studios,

artist management, producers, graphic artists, composers, video production companies, audio/lighting hire companies, transport companies, venues, industry journals, as well as musical instrument and professional audio/lighting manufacturers, distributors and retailers.

The Australian Bureau of Statistics has produced figures proving that the industry employs directly and indirectly in excess of 50,000 people.

"Where copyright law changes seven years ago appeared to be an attractive political solution to right the perceived imbalances in the record business, now, it would be like having a cold and hoping cancer would be the cure. I feel the radical implementation of parallel importing would cause more disaster than it would cure with a likelihood of it politically or economically bombing our industry back to the Stone Age", wrote Phil Tripp on his news page.

But there is another argument which goes like this:

- Because CD's cost so much in Australia (\$30 vs A\$20 in the USA) then there are less sold.
- If proportionately more CD's are sold, the artist royalty will rise.
- Likewise, investment in local recording and replication will rise.
- Indeed the replication industry is sheltered from this because the production cost of a CD represents a very low portion of the eventual retail cost.

.....  
Finally, think about this. The major record companies have just finished enjoying the boom which started 12 years ago when the CD was introduced. Since then, people everywhere have purchased back catalogue releases, compilations, and replaced their vinyl.

We remember in our live sound days in the middle of this format shift boom the commonly held belief of younger and sillier A&R personnel, that THEY were actually part of the reason for the success of an artist!

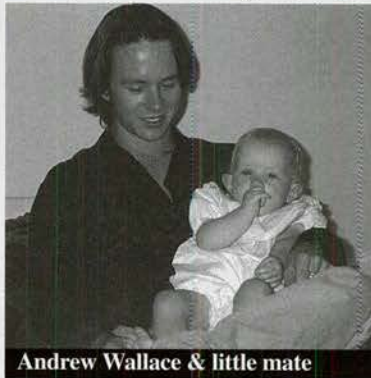
Really, whatever happens now already is minor compared to the extreme changes that have swept the industry in the 1990's.

## PROTALK

Continued from page 7

(Charing Cross, continued)  
next year a restored 36-channel Neve frame will replace the present Yamaha desk used as a monitor section, so the studio sound will be all vintage Neve.

**Andrew Wallace** is a freelance producer and engineer



Andrew Wallace & little mate

working on album, demo, advertising or film in Adelaide. He will go do whatever it takes wherever the work is. A versatile Australian at work!

Andrew says his problem is distraction, getting buried in paperwork, or diverted by business matters relating to some rehearsal studios he has recently purchased. "The biggest lesson most recently learned would be the scheduling of projects. Battling my perfectionist nature is no small feat".  
"I am now spending more time on pre-production, checking out the work to be done, making sure instruments and performers are REALLY ready for the studio. The best advertising is to do the best job you can".

Call +61 8 8379-1563

**Sally Corbett** has just moved Soundscape Studios from Surry Hills to Dee Why, a Sydney beach suburb. "It's changed, and we record some of the best players on our 7'4" grand piano".

A lesson? Work comes at the worst moments, like when we are still working out of cardboard boxes. You need to be prepared for anything. I'm learning about flexibility".

They have no bookkeeper, "just keep on doing it!" Phone +61 2 9984-7262.

**Neil Gray** from True Form Music Services says that his bright idea was to start the business in the first place - rehearsal studios with a co located recording studio. "There was a conscious decision made not to get too serious, but somewhere along the line I contracted that contagious disease which leaves the victim always wanting better equipment".

"I now own 3 ADATs, heaps of outboard and have almost completed installing a 2nd hand Soundtracs 32 channel inline console".

"The quantity of bantam and patch leads needed to get it all running frightened the bank manager!"

"Anyway, business is good, and when I finish the latest pile of paperwork, studio preparations for tomorrow and these pile of tape dubs, I might get time for those songs I was working on ten years ago"

Phone 0500 509-509

### ARE THERE LESSONS HERE?

Well, the old rule applies. If your business is music or market gardening, the fundamentals of business always apply.

1. Use a proper bookkeeping program, properly set up;
2. Understand that profit can accrue even when you have no cash flow;
3. Insure yourself properly!

-Editor.



# FREE LISTINGS

NEXT STUDIO AND REPLICATION DIRECTORY PUBLISHED IN MARCH. **DEADLINE: JAN. 15th**

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Company Principal \_\_\_\_\_

15 words about your firm: \_\_\_\_\_

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# TRACKING GUIDE MONTHLY

Be in the national tracking guide every month in Connections! **DEADLINE: 7th of the month**

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Facility name \_\_\_\_\_

Contact name \_\_\_\_\_

Contact phone \_\_\_\_\_

Brief description of facility - ie: "24 track analogue music studio", or:- "Protools suite" etc: \_\_\_\_\_

## LISTINGS:

You are restricted to six listings per issue per month per entry.

**1** Artist: \_\_\_\_\_

Producer: \_\_\_\_\_

Engineer/s: \_\_\_\_\_

Project: (Album, demo, mastering, etc) \_\_\_\_\_

**2** Artist: \_\_\_\_\_

Producer: \_\_\_\_\_

Engineer/s: \_\_\_\_\_

Project: (Album, demo, mastering, etc) \_\_\_\_\_

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Producer: \_\_\_\_\_

Engineer/s: \_\_\_\_\_

Project: (Album, demo, mastering, etc) \_\_\_\_\_

**4** Artist: \_\_\_\_\_

Producer: \_\_\_\_\_

Engineer/s: \_\_\_\_\_

Project: (Album, demo, mastering, etc) \_\_\_\_\_

**5** Artist: \_\_\_\_\_

Producer: \_\_\_\_\_

Engineer/s: \_\_\_\_\_

Project: (Album, demo, mastering, etc) \_\_\_\_\_

**6** Artist: \_\_\_\_\_

Producer: \_\_\_\_\_

Engineer/s: \_\_\_\_\_

Project: (Album, demo, mastering, etc) \_\_\_\_\_

**Send to Connections,**  
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## Duncan Fry

Recipe for Prawn Balls...First catch your prawn



Sometimes when you work night after night with prima donna bands from from the inner suburban whine bar circuit, you forget just how nice some artists can be to work with. Although there are some musicians that you wouldn't piss in their ear if their brain was on fire, on the other hand you can be lucky and get to work with genuinely talented people who really do appreciate the amount of hard work you put in every night.

My trusty assistant Jim and I did a lot of work with an artist who had built up an enormous following just through constant touring. No records, just the steady grind of gig after gig after gig. How he stayed enthusiastic about it I'll never know.

He was an incredibly nice guy to work for, not at all big headed and never suffered from Pop Star syndrome, or 'Egotisticus Arseholio' as the doctors call it. He was from the country and had led a relatively sheltered life until he discovered the entertainment business. But he did have one failing - as soon as he felt that you knew what you were talking about, he believed every word you said. Very risky!

Naturally with such trust the opportunity for practical jokes frequently arose, and by and large I resisted, but sometimes I would weaken.

We were all in Cooma, in the Snowy Mountains, doing a gig, and Jim and I had gone to the Fish and Chip shop and come back with two big wrapped hot bundles when we bumped into...the star. Let's call him Pete.

"Hey, come on into my room," said Pete, "I'm just having some dinner myself."

"OK" we said, and went in. Jim and I opened up our bundles and started munching.

I had restricted myself to basic fish and chips, but Jim had ventured into the realms of gourmet delights, and was happily crunching on some crunchy batter filled things.

"What've you got there, Jim?" asked Pete.

"Oh, just some prawn balls," said Jim in between munches.

"What?" said Pete in disbelief

"Prawn balls," repeated Jim. "They're real nice. Like to try one?"

Pete still stared in disbelief at Jim.

"Prawn balls?" he said, "But...but...they must be TINY!"

Jim and I looked at each other and burst out laughing. Pete looked at us, not getting the joke. So we explained.

"Pete," we said, "They're balls made of prawn, not prawn's balls! There is a difference!"

Well, old Pete laughed so much that I thought he wouldn't be able to do the show that night. He told us that he had always eaten meat, and had never tried seafood at all.

Never? Jim and I couldn't believe it, but it gave me an idea for a practical joke we could play on the unsuspecting star.

At a secondhand bookshop I had bought an old book called 'The Compleat Practical Joker,' a history of great japes that had been played on poor bastards throughout history, and one of them concerned oysters. I let Jim in on it and we got prepared.

The next night we bought our normal fish and chips, but got half a

dozen oysters each as a special treat. We made sure we had them out on display as Pete walked past.

"Wow, what've you got there boys?" he asked

"Just some oysters, Pete" I replied. "Would you like one?"

"Oh I don't know," he replied. "I've never tried them before."

Bingo!

"Well, suit yourself," I replied, "But they're delicious. You don't know what you're missing. Jim and I are just going to get stuck into them, so if you want to try one you'd better have it now before we gobble them all up."

Pete looked thoughtful.

Jim piped up

"They're really nice, Pete, and the fish shop said these were fresh in today from Tassie."

"Well...maybe" Pete hesitated. "OK - I'll have one. Might as well try them out, eh?"

We agreed, and I handed him the little cardboard dish with the oysters sitting in it. He picked up an oyster by the shell, sniffed it, tipped it up and slurped it down.

Jim and I leaped to our feet, pretending to be horrified.

"Shit a brick Jim," I said, "Did you see that? He's eaten it alive!"

"Holy shit!" said Jim, rolling his eyes upwards.

"What's wrong?" asked Pete, looking worried. "All I did was let it slide down."

"Yes but you've eaten it alive. You're supposed to kill them first," we said. "Now it'll wriggle around in there for ages."

I smacked my hand to my head. "Jeez," I gasped, "What if it's pregnant? It might breed in there and then God knows what'll happen."

"Oh no," gasped Pete, turning greenish gray the thought of this. "Ooooh, I think something's wrong - I'm sure I can feel it moving." He clutched his guts and looked pale. "Urgh, what'll I do?"

"It's not looking good, mate," said Jim seriously.

I grabbed a bottle of Tabasco sauce that we had bought from the supermarket. \$3 seemed like a good investment for all the fun we were having!

"Here Pete, you'd better take a real good swig of this sauce. It's what we put on them to kill them before we eat them. You'd better drain the bottle if you can. That way you'll have the best chance. Here, let me open it for you."

I twisted the top off and gave him the little bottle. He gave it a couple of mammoth swigs and then his face went red, then purple. I thought he was going to explode.

"Aaah, shit, I'm burning up inside...Urrrh..."

His hands feverishly scrabbled inside his mouth, which was nearly turned inside out, dribble streaming out of it.

"Aaah, hot, hot, aagh" he yelled

It was too much for Jim and me. We collapsed to our knees laughing, unable to keep straight faces any longer.

Pete looked at us through his fiery haze, and suddenly twigged that maybe, just maybe, we were having a lend of him.

"Shit you bastards," he yelled, picking up the remaining oysters and fish and chips, and throwing them at us as we rolled helplessly around the floor clutching our ribs, both laughing like drains!

Eventually he calmed down, and took it all in good fun. But he was never quite so trusting again!

## EASY TILT FOR DESKS

This neat collapsible stand gets a heavy mixing desk from the vertical position, to the horizontal position. Ready for work. Two people can easily park the Easy Tilt under a desk and pull the console up using its own weight. Cool thing! **From Midas: Call EVI for more, +61 2 9648-34545**



## Finance easier right now, say hire co's

Several production company owners contacted Connections following our story on finance options in the last issue. They say that Commonwealth bank has a Business Banking unit which is offering favourable terms.

One operator has drawn down almost \$2 million in the past two years, and has been able to buy business premises without a lump sum for a deposit. Others say that Commonwealth's Business Banking unit allows lending against cash flow and a business plan.

As you would expect, the conditions are rigid, but .....

Our contacts say not to deal with the bank at branch level, but to seek a referral to the unit.

Equipment vendors are now offering more direct finance also.



## ASK about this projector

Touted as the smallest, lightest SVGA projector on the market, the ASK A4 has a footprint roughly the same as a page in this magazine. But in use it produces a useful 500 ANSI lumens - enough to cut a decent image in our office during daylight.

LCD projectors like this are mainly used for graphics presentations with almost every office everywhere now in possession of software like Microsoft Powerpoint. Rental firms and contractors are increasingly finding graphics projectors on the specification list.

ASK hails from Norway, this projector uses a 150w metal halide lamp rated at 2,500 hours life. It is useful for screen distances of between 1 and 9 metres, at the latter it will project an image of 5.6m wide x 4.2m tall. An optimal 3m distance produces an image 1.84m wide x 1.38m tall. It has a 1 - 1.3 zoom lens.

The weight of the unit is 5kg which will hardly strain a more delicate user. A really cool feature is the BatMouse - which is a trackball mounted on the remote control, it allows you to do the mouse type things you normally do on the PC, but by pointing the ASK remote at the screen image. The remote works up to 45m away from the projector.

Stray light and noise are minimal, always check any device utilising a lamp for spill, which in a darkened environment is often annoying and sometimes can disrupt a projection or dazzle an audience. ASK quote an operational

noise level from the internal fan of 40.5dB and compare this against a PC, which they say generates 45.5dB - almost double.

Sources can be PC or Mac, with cables for both supplied. You can connect up to 6 input sources at once - 2 computers and four video players (composite and S-video). The remote allows you to select your source. Resolution compatibility is 1152 x 870, and input mains is multi voltage sensing. A soft carry pack is included in the price.

- Expect to pay around A\$11,799 including tax.

- **From B&H Australia, +61 2 9870-7222.**

### ◆ Connections business class ticket contest

# WINNER!



**Connections customer service team Nicole Morris (left) and Oeysha Ramlawie draw the prize**

Our first winner! Each month we draw one name from our Winner's Box. To enter all you do is SUBSCRIBE or RENEW your subscription. Then, each month until March we pull a winner. The prize is a return Business Class air ticket to ENTECH 1998 in Sydney. This trade show show runs from Wednesday April 22nd until Friday April 24th, and is at the Sydney Exhibition Centre.

The prize includes one return Business Class air ticket from any main trunk Qantas port to and from Sydney. Overseas winners get an economy class ticket, which they can upgrade at extra cost.

Our first winner is:

**Greg Berzinski**, from Stage Music Productions, White Rock, Queensland. Congratulations!

- To enter, call 1-800-635-514 and subscribe. Most credit cards OK.

## New Stage Roof

A new Total Fabrications stage rooftop is available for hire in Australia this summer. The roof is a full self supporting structure with eight towers and motors allowing for a flown rig weight approaching 20 tonnes.

Three different skins are available, for a roof size of 85' x 55', 65' x 45' or 45' x 45'.

Rigging takes 8 people about 8 hours, according to owner Noel Anthony.

A trim height of 50' is possible, and a dedicated structural engineering report is supplied with each rooftop.

- **Details from Wild Gravity, call +61 7 7 213-540.**

# dbx MC6 mini compressor

User-friendly, affordable and so compact it will fit into the palm of your hand: these are a just a few of the things dbx hope you will admire about the new MC6 Mini-comp compressor/limiter.

Designed with home studio users in mind, the MC6 is also ideal for live sound applications, and its small enough to sit conveniently on a table top right next to the mixer.

The MC6 allows manual adjustment of attack release times or dbx's program dependant auto function. Two auto-modes are offered, one optimised to vocal applications, the other to instrument applications.

The MC6 also features full stereo operation, rear panel footswitch bypass jack for hands-free use, switchable line or instrument level operation, full eight-step input/output/gain reduction

metering and switchable Over Easy or hard Knee compression.

And unlike its competitors the MC6 has faders rather

than Knobs, which are easier and more accurate to use, say dbx.

dbx say that the MC6 reflects the fact that at dbx

most of the engineers are musicians as well.

Retail A\$329

• Australia: call Jands on +61 2 95820909



## DEALS

Price reductions for the following devices:

◆ TASCAM MIXERS from Sound Devices in Sydney: M1600/24 down from A\$3999 to A\$2895; and-M2600/24 down from A\$7295 to A\$4395; and-M2600/32 down from A\$695 to A\$4998. Prices include sales tax. Call Sound Devices on +61 2 9283-2077.

◆ The HAMMER 15 SBP 400/800w bandpass subwoofer from Melbourne Stage & PA is down from A\$1350 to A\$1195 inc. tax. Call Melbourne Stage & PA on +61 3 9578-2426.

Send us your DEALS now!

**Do you manufacture or supply audio/visual or associated equipment (e.g. audio amplifiers, compact disc players or electronic organs etc.)? Then you should be aware of the Australian EMC regulations, and what you have to do to comply.**

Since 1 January, all new products covered by this framework must comply and be labelled with the C-Tick.

**Have you applied for the C-tick mark?  
Are your new products labelled?**



The C-tick mark signifies compliance with this framework.



AUSTRALIAN COMMUNICATIONS AUTHORITY

For more information, and obtain a copy of the booklet EMC Framework Information for Suppliers call (02) 6256 5520 Radiocommunications Standards, Internet: <http://www.sma.gov.au>

Write in Reader Service Number: 189

## INTRODUCING THE NEW VCX JOEMEERK 'MEEKBOX'

Joemeek Ltd UK say the new budget VC6 meekbox is an addition to their range of signal/voice processors. It combines classic optical compression techniques with a high quality low noise mic pre amp and harmonic enhancer.

Whilst the VC6 has more features than the budget VC3, the VC6 will not be superceding the VC3 pro-channel-it will continue production as normal.

The VC6 Meekbox new features include one whole rack unit width with internal power supply on a standard iec power connector, an instrument jack input, on/off switch and phantom power switch all on the front panel.

Other additions are fully sweepable ratio and attack controls. Ratio ranges from 1.2 to 1 up to 6 to 1. Attack and release controls are more extreme with attack ranging from 0.5 to 5 milliseconds and release from 250 milliseconds to 6 seconds. This makes

the Meekbox easier to use on musical instruments where sensitive adjustments and greater control is necessary.

Standard features include input gain, compression in/out switch, output volume, L.E.D. output, enhance Q and drive. Inputs are jack line in, XLR mic in, insert and mix in-enabling multiple linking when overdubbing or a second input for instruments that have their own volume control.

The two outputs are unbalanced low impedance jacks and are independently buffered. One can be used as a recording output while the other is used for monitoring or PA use.

The unit may also be used as a DI box and connection center for outboard effects, giving better sound and dynamic control on stage.

**•Retail A\$925  
Call Shrape International  
+61 2 9939- 4009**



Yamaha P series amps

Yamaha's new P-Series amplifiers come in at keen costings. The P1600 offers 200 + 200 watts at 4, and sells for A\$995.

The P3200 does 440w per channel at 4 and sells for A\$1395, while the P4500 delivers 620 watts at 4, per channel. It sells for A\$1695.

P Series are a 2 rack unit tall amp (103.5mm), featuring Yamaha's Efficiency Engine Technology. They say this means that power is supplied through a high

efficiency current buffer. During low requirement periods it transparently switches the power on and off, automatically as needed. As the signal becomes large, an independently responding auxiliary power line supplies the additional power as required.

All three models have protection designed to save the amp itself and any attached speakers in the event of badness. Power on muting delays output to the speakers until the amp is settled down, and a power/current limiter saves the day if the speaker outputs are short circuited.

Inputs are balanced XLR or jack, outputs are binding post, and two fans do the cooling bit.

**• Yamaha +61 3 9699-2388**



## Crown K Series Available in a Kaleidoscope of 13 Colours

Crown's K1 offers all the same benefits of the K2 amplifier with two differences-less wattage and,

consequently, a lower price.

While the amplifier delivers 2,500 watts (1,250 watts per chan-

nel into two ohms), the K1 delivers 1500 watts (750 watts per a channel into two ohms). This reduction in power allows sound designers and contractors to configure systems according to the needs of a specific application.

The entire K Series amplifier line is available in 13 hot and cool amplifier colours- another crown first.

Colors range from Safety Yellow to Toxic Green to Bloody Red. *(We love these names! -Ed)*

The combinations are endless. Designers can now choose to assign colour amplifiers for specific functions or zones. On the other hand, colors can be selected to match decor, please a client, or to create a exiting or serene mood.

The color tones are applied through Crown's Powder Coating

System and Crown guarantees the same ruggedness audio professionals expect from its traditional Gray or black finishes.

The K Series amplifiers utilise Crown's proprietary patent-pending Balanced Current Amplifier (BCATM) Circuitry to deliver high power while generating virtually no component-degrading heat.

In addition, the K Series consumes less energy than competitive units. It generates just one tenth the heat of conventional amplifiers and is over three times more thermally-efficient than any amp in the market today. And because the K1 is just two rack spaces high, it can be easily stacked where space is at premium.

**• Bose Australia, call  
+61 2 9204-6111**



◆ Travel advisory

## Go to LA!

January is a great time to visit LA because the NAMM trade show is on. Yep, take the family - and talk to your accountant about some tax deductions too!

NAMM is the National Association of Music Merchants, but the show has a lot of pro audio too. It is at the LA Convention Centre (1201 South Figueroa street) for the first time, having been forced out of Anaheim due to renovations there.

The dates are January 29 - February 1st. You get more than 1,000 exhibitors. It's huge!

The limo (below) is also available for hire, but we suggest a little impractical. Get a hotel in Beverly Hills and enjoy the break!

• Info: [www.namm.com](http://www.namm.com) or call them on +1 760 439-8001

## Sabine POWERQ: does almost all

Sabine Corp USA released their latest in an impressive range of Processors at the recent AES New York. Called the POWERQ, it combines FBX, Parametric, Graphic, Real Time Analyser, Compressor/limiter, Gate and Delay all in one compact box.

Since 1993 Sabine's ADF Series has provided sound engineers with a powerful array of digital audio shaping and processing tools. Their new POWER-Q ADF-4000 combines the functions of seven separate products into one easy-to-use 2U package, and dose it without the compromise often found with 'all-in-one' boxes.

Featuring 24-bit digital processing and Analog Devices' new SHARK floating-point processor, Sabine claim the POWER-Q has unparalleled audio quality and flexibility.

The POWER-Q's range of proc-



essors include:

- Up to 12-band Parametric EQ,
- 31-band Graphic Equalizer,
- Up to 12-band FBX-feedback Extremator, with adjustable sensitivity,
- Real-timeAnalyser, full-featured with reference mic input,
- Compressor/limiter,
- Digital Delay for speaker alignment,
- Noise Gate/Expander.

The Sabine unit has storage for up to 20 user-defined configurations, and loads programs locally or via Serial/MIDI remote control

options.

All functions operate concurrently, harnessing a whole rack of power with just one A/D conversion. This configuration provides a powerful combination of equalisation, gain management, and single processing tools available in one box and, the makers claim, at an affordable price of A\$3438.00 (retail exc tax).

• **Distributed in Australia and New Zealand by Audio Telex Communications Pty. Ltd. + 61 2 96471411.**



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MIDI remote control to operate your DAW or synths, etc.	1,000
<b>Total Cost</b>	<b>\$34,890</b>

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**YAMAHA**  
MUSIC AUSTRALIA

Write in Reader Service Number: 169





# BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER	PROJECT
Steve Curran	AI/Artist	AI Sankauskas	CD Release
Traci Canini	AI/Artist	AI Sankauskas	CD Demo
<b>Agro Fish Studios</b> Julie Raynes (08) 8223 7211. 20 Tk. Video Sync, HD Rec., Sequencing.			
Tape Sync To Audio, Computer Mixdown			
Creative Forrest Prod'ns	Mike Forrest	Andrew Bayfield	Jingles
Joyce Russ Advertising	Peter Russ	Andrew Bayfield	
CFC	Tim Power	Roy Erzinger	CD Production
Humphrey Bear	Wilson Main	Andrew Bayfield	
Andy Seymour	Andy Seymour	Andrew Bayfield	Demo
<b>"the fridge"</b> Nigel Sweeting (08) 8231 3588. 16 Tk. Analogue, 16 Non-Linear Digital, Full Automation			
Ratatouille	Band	Nigel Sweeting	CD
Pure Harmony	Band/Nigel Sweeting	Nigel Sweeting	CD
Samba Suave	Band	Nigel Sweeting	CD
"No Pokies"	Campaign Manager	Nigel Sweeting	AD
Man Of La Mancha	Nigel Sweeting	Nigel Sweeting	Sound FX

## Victoria

<b>Apollo Sound Studios</b> Ernie (03) 9354 9058. 24 Tk. 1", Mackie 32.8			
Dreadnought	Band	Dax, Richie, Ernie	CD
WSCK	Ernie/Band	Ernie	CD
Nova Dust	Ernie/Band	Ernie	CD EP
Empire	Ernie/Band	Ernie	CD EP
Dave Frangiosa	Ernie/Dave	Ernie	CD Single
Seething	Ernie/Band	Ernie	Demo
<b>Back Beach Recording</b> Mark Rachelle (03) 5988 6948. 24 Tk. Neve, Focusrite, EMT			
Bellicose	Franchetto/Rachelle	M. Rachelle	Re-Mixing
Mind Snare	Band	R. Norton	EP
Creature Seed	Station	R. Norton	B-Side
Claymen	M. Rachelle	M. Rachelle	Mixing
Darren Moss	Artist	Adam Rhocoes	EP
180 Discord	R. Norton	R. Norton	EP
<b>Big Beat/Equinox</b> John "Shadow" Toth Fax (03) 9898 5815. 16 Tk. Analog, 8 Digital, Midi/Mastering			
Macbeth Slavemaster	Pan/Waldron	Williams/Borgeest	CDs
Tarbaby	Band	Williams	Demo
Silk	Band	Williams/Borgeest	Demo
Albert Stewart	Artist	Williams/Borgeest	CD
The Lounge	Band	Williams	Demo
Streetjam Fundraiser	Toth/Williams/Borgeest	Williams/Borgeest	CD
<b>C'est Ca Recording</b> Norman McCourt (03) 9419 1506. Automated 24 Track Digital and Analogue			
Footscray/Yarraville City Band	Norman McCourt	Norman McCourt	3 CD Set
Ted Bardeo	Artist	Norman McCourt	Album
Thrush	Norman McCourt	Norman McCourt	Comp. CD Tracks
Cobbers	Band	Norman McCourt	Anthology
Breadmakers	Band	Norman McCourt	Vinyl Album
Amalia	Norman McCourt	Norman McCourt	Comp. CD Tracks
<b>Crystal Mastering</b> John Ruberto (03) 9326 2318. Sonic Solutions/Apogee UV22			
Rhonda Burchmore	Ross Cockle	John Ruberto	Mastering Album
Fiendish	Band/R. Norton	John Ruberto	Mastering Album
Costic Soda	Band	John Ruberto	Mastering
Three RRR	Neil	John Ruberto	Compilation
Teylah James	Artist	Joe Carra	Mastering Album
Snake Hips	Band	John Ruberto	Mastering Album
<b>Newmarket Studios</b> Ben Hurt (03) 9329 2877. 24 Tk. 2" Analogue			
Anne Gilby		Ben Hurt	Classical Album
Petra Salsjo		Ben Hurt	Demos
Franca Arena		Ben Hurt	Demos
Xenos		Chris Corr	Album Mix
Gary Young		Ben Hurt	Musical Demo
Phunk De Sonique		Ben Hurt	Dance Demo
<b>Petrophonic Productions</b> Petros Georgiades (03) 9553 0176. 16 Tk. Digital Recording/Midi Suite			
Sallywag Pirates	Petros/Artist	Petros Georgiades	CD - Kids
Dr. Jan Hall	Petros Georgiades	Petros Georgiades	Sex Series Audio Tapes
Mark Joseph	Petros/Artist	Petros Georgiades	Debut CD
Alex Burns	Artist	Petros Georgiades	Hoola Blues Demos
The Breakers	Band	Petros Georgiades	EP
The Buzzmatics	Band/Petros	Petros Georgiades	Debut CD
<b>Seed</b> David Warner (03) 9682 8488. 24 Tk. 32 Ch. Harrison Console			
Manic Suede	Band/Tim Johnston	Tim Johnston	Album
Tomorrow People	Linc	Tim Johnston	B-Sides
TISM	Lawrence Maddy	Lawrence Maddy	Album (Part)
Deb Byrne	Chris Becker	Tim Johnston	Single
<b>Sing Sing</b> Phil or Kaj (03) 9428 4622.			
Chris Wilson		Doug Roberts	Album Mix
Rhonda Birchmore		Ross Cockle	Album Record/Mix
Chris Marshall	Barry Palmer	Kalju Tonuma	Album Record/Mix
The Mavis's	Kalju Tonuma	Kalju Tonuma	Single Mix
Joe Camilleri	Joe Camilleri	Phil Butson	Film Music
<b>Sound Around Mobile Studio</b> Trevor Cronin (03) 9531 3891.			
Crackers	R. Edwards	M. Letho	Rec./Mix Film Score
Swinbourne University		G. Millen	Theatre Soundtrack
<b>Studio International</b> Jason (03) 9696 7066. 48 Tk. ProTools Suite			
Burns/Cotton/Morris	Artists	Jason Bond	Album
Jingles	Ross Inglis	Jason Bond	Jingles
Bliss	Jason Bond/Adrian Fannan	Jason Bond	Album
Aust. Children's Choir	Daryl Cotton/Jason Bond	Jason Bond	Album
<b>Toyland Studio</b> Adam Calaitzis (03) 9482 2111. 24 Tk. Analog & Logic Audio			
Mathew Callahan	Adam Calaitzis	Adam Calaitzis	Mixing

ARTIST	PRODUCER	ENGINEER	PROJECT
Held On Hold	Caroline Held	Adam Calaitzis	On Hold Messages
Preto E Branco	Mark Tenstra	Adam Calaitzis	Album
Real Life	Adam Calaitzis/Band	Adam Calaitzis	Album
Jason Teo	Adam Calaitzis	Adam Calaitzis	Album
Chrigo	Adam Calaitzis	Adam Calaitzis	Album
<b>True Form Music Services</b> Neil Gray (03) 9391 0907. 24 Tk. Digital, 12 Tk. Analogue			
Surdo	Band/Ross	Ross O'Driscoll	Album
Iniquity	Neil Gray	Neil Gray	EP
Slabtake	Jim Dowling	Neil Gray	Demo
No Grace	Band/Neil	Neil Gray	EP
SCO	Ross O'Driscoll	Ross O'Driscoll	Pre Production
Politenessman	Glenn Lewis	Neil Gray	EP
<b>Wombat Road Studio</b> Barrie Clissold (03) 5145 4204. 32 Tk. Digital, 16 Tk. Analogue			
Gaye Lynn	Artist	Barrie Clissold	Album - Mix/Master
Jill Meehan	Artist	Barrie Clissold	Album - Master
Jim Ayres	Artist/Clissold	Barrie Clissold	Album - Mix/Master
Swollen Seeds	Band/Clissold	Barrie Clissold	Album Tracking
George Rawlings	Artist/Clissold	Barrie Clissold	Album Tracking
Steaming Muzas	Band	Barrie Clissold	Live Demo CD
<b>XTEK Studios</b> Nic Moore (03) 9646 8833. 2" 24 Tk. & Hard Disk Digital			
Ben French	Nic Moore	Nic Moore	Demo
Bard	Bard	Nic Moore	Album
Rob Howson	Artist	Nic Moore	Album

## Western Australia

<b>Bonsai Recording Studio</b> Tom Thorpe (08) 9246 4408. 24 Track			
John Meyer	Tom Thorpe	Tom Thorpe	Jingle
Jesus Sandals	Tom Thorpe	Tom Thorpe	EP CD
Studio Trax	Tom Thorpe	Tom Thorpe	Demo
Terry Perganalis	Tom Thorpe	Tom Thorpe	CD
Kay-Redman	Tom Thorpe	Tom Thorpe	Jingle
<b>Planet Sound Studios</b> John Villani (08) 9382 2211. 48 Dash, 32 Dig., 24 Tk. Analog			
Hank Marvin	Hank Marvin	Les Williams	Album Mix
Evergreen	John Villani	John Villani	Single
Horizon	John Villani	John Villani	EP Mix
Paradise Blush	Band/John Villani	John Villani	Single
Nick Long	John Villani	John Villani	Album Mix
Mat Thomas	John Crooks & M.T.	John Villani	Album Mix
<b>Poons Head</b> Rob, Sam, Bush (08) 9339 4791. 32-43 Track			
Laughing Gate	Rob Grant	Rob Grant	Album
Perry Dowd	Rob Grant	Rob Grant	Album
Berber Merkin	Rob Grant	Rob Grant	Album
Audio Paradox	Alfredo	Rob Grant	Singles
John Roberts	Rob Grant/Artist	Rob Grant	Singles
Brendon	Brendon	Rob Grant	Jingle
<b>Satellite Recording Studio</b> Darren Halifax (08) 9470 4003. Protocols			
Children Under 4	Band	Nick Hassall	Demo
Lynda Cat Exotica	James Hewgill	James Hewgill	Album
Paul McKell	Artist	Nick Hassall	Rock Comedy Album
Simon Fox	Simon Fox	Darren Halifax	CD
Smocch	Nick Hassall	Nick Hassall	Demo CD
Bill Reid	Darren Halifax/Artist	Darren Halifax	CD
<b>Tropo Sound</b> Mick Connolly (08) 9192 2394. 24 Tk. Dolby S CD Master			
Grasscutters	Band	James Edwards	Demo
Scapegoat	Brett Lyons	Brett Lyons	Demo
Mark Bin Bakar	Artist	James Edwards	Jack Davis Project

## Northern Territory

<b>Masters Studio &amp; Production</b> Lindsay Masters (08) 8972 1754. 8 Tk. Digital			
D. Kostal	Lindsay Masters	Lindsay Masters	Original Demo
P. Stacey	Lindsay Masters	Lindsay Masters	Original Demo
P. Ciriotes	Lindsay Masters	Lindsay Masters	Album

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Chapple Tape (03) 9580-6620,  
DEX Audio (03) 9372-2266,  
MTA & Assoc. (03) 9819-6455  
**SA:** Adelaide Tape Duplicators (08) 8212-7111,  
Pro Media (08) 8276-6793  
**WA:** Ausmag (09) 314-1953,  
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Richard Muecke, Head Dept of Technology on 9212 4851. Send applications to: The Principal, The Australian Institute of Music, 17-51 Foveaux Street, Central Sydney 2010 by November 6th, 1997.

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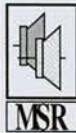
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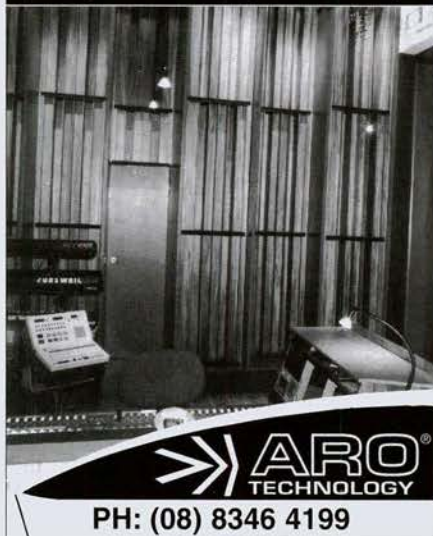
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CARVER PM 1.5 Amplifiers (4) 600 watts \$1,250.00 each ono. McLean Audio Services (03) 9429 5381

CROWN UHF headworn radio mic system \$800 (02) 9799 7219  
DBX 163 A compressor/limiter, new \$200 (02) 9799 7219

DBX 166 Stereo Compressor \$600. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.  
DDA Interface 24/4/2, 2 years old, excellent condition, desk and power supply cased, very well made console. \$8000, Ph: (02) 6280 6331.

DDA Mono 4 way/stereo 2 way cross over/limiters \$600 (02)9799/7219

EMU Drumulator Drum Machine was \$2,000 new, sell for \$200, perfect working order, good condition. (08) 9446 2033, 015 997 059.

EV 5200 speakers \$1200 pair, (02) 9799 7219

EV MS1000 radio mic. Systems (4), 1 with EV Hand held transmitter, all include Lapel transmitter and Crown or Sony heads. \$500 without hand held, \$700 with hand held. (02) 6280 6331.

EVENTIDE H300 harmonizer \$3,500. Cannon Sound Phone 1800-804 994 or (02) 6550 3828. Web Site. www.cannonsound.ptme.com.  
INLINE IN1222 Scan Doubler and video switcher, Freeze frame, gamma correction, RS-232 controllable. \$600, Ph: (02) 6280 6331.

JANDS 516 Amplifiers (900+900) \$1700 (02) 9799 7219

JANDS DDX 48 Jemux digital/analogue lighting converter \$375 (02) 9799 7219

JANDS System 80 subs with 2 40ohm JBL 18s in each \$2,500.00 pair. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

JBL 15 inch Speakers E130, E140 2225, \$300 each. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

JBL 18 inch Speakers \$400ea. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

JBL 2445 Horns, \$600.00ea. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

JBL Bi-radial flares \$150.00ea. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

JBL Soundpower cabinets 4755A, each 2x2205 12s plus 2445 horn, new \$3000 pair (02) 9799 7219

JBL Wedges (4) containing 15 inch speaker and Emilar Horns \$2,000.00 the lot. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

KLARK Technic DN3030 Dual 1/3 equaliser \$300 (02) 9799 7219

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PERRAUX 9000B amplifiers \$1,500.00ea. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

REVERB Roland DEP-3 programmable, studio use only, \$315. Ph: (02) 9153 9988

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SONY DXC-M3 camera with Fujinon 9:1 lens, power supply and case, \$800, Ph: (02) 6280 6331.

SOUND Development 3rd Octave Graphics \$350.00ea. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

SOUNDCRAFT Spirit 16/8 Monitor Console with case \$2,900.00. McLean Audio Services (03) 9429 5381

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YAMAHA 2404, 24 Channel Mixing Desk \$1,200.00. Cannon Sound Phone 1800-804 994 or (02) 6550 3828 Web Site. www.cannonsound.ptme.com.

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Prices each, include sales tax, and were correct at 15th October. All care taken no responsibility for errors. Four models only shown in each category, all these manufacturers have many, many more. Indicative only.

### OVER \$1500 EACH

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*ARX Systems Pty Ltd (03) 9555 7859*

**PowerMAX** All PowerMAX high performance Front of House cab.s, Subs and Monitors are all controlled by the dual channel **PowerPRO** speaker processor. From \$1665.

**922 Concert Series Trap.** active 1 x 15", 1 x 12", 1 x 2" Ferro cooled HF 2 way cab. with the improved response of a 3 way system. Compact full range concert speaker system. Uses **LSP-2** ISC processor. \$3950. **212 Concert Series** Powerful, lightweight 2 x 12", 1 x 2" Ferro cooled Mid/High pack with unique one piece fibreglass flare moulding for maximum strength and accuracy. Common frontal area with the other ARX Concert Series cab.s. Uses **LSP-2** ISC processor. \$3605. **925 Concert Series** Trap. 2 x 15" bandpass bass package for LF enhancement of the **922** or for use as a system with the **212 Mid/High** pack. Uses **LSP-1** ISC processor. The **218** is also available for those times when only 18's will do! \$3305.

#### AUSTRALIAN MONITOR

*Australian Monitor 9874-9355*

**QMX DOUBLE 15** Full range concert system, vented, quasi bandpass/double ended reactive loading encl. 2 x 15" woofers, 2" mid/high comp. driver, 105dB/1 watt 1 metre, 136dB @ 1200 watts peak, 4 ohm, 1060 x 550 x 5700 (H,W,D). \$3,025 ea.

**QMX DOUBLE 12** As per QMX DOUBLE 15 but utilising 2 x 12" woofers. 105dB/1 watt, 1m. 133dB peak @ 600 watts, 4 ohm, 870 x 380 x 460 (H,W,D) passive x-over, dispersion = 60° horizontal x 40° (deg) vertical. \$2,420 ea.

**QMX DS18** Double bandpass subs. cab. 2 x 18" woofers. 800 watts cont. 1600 watts peak. 110dB @ 1W/1m, 140dB peak. 4 ohms, 1236 x 700 x 700mm (H,W,D). \$3,068 ea.

**NRG 500** 2 way (passive) full range encl.. Vented trap. encl.. 1 x 15" woofer, 1 x 1" comp driver pn 90 x 40 constant directivity horn. 99dB 1W / 1 metre, 500 watts peak @ 126dB, 8 ohms, 710 x 480 x 400 (H,W,D). \$1,715 ea.

#### CELESTION

*The Electric Factory (03) 9480 5988*

**CX1220** 2-way 12" full range, 250W 8 ohm, 18mm 13 ply birch cab., polyswitch protection, 8 steel M10 flypoints, attractive dark grey spatter finish. \$1500 ea.

**CX1520** 2-way passive 15" full range encl. with 1" horn, 18mm 13 ply birch cab., polyswitch protection, 300W 8 ohms, 8 steel M10 flypoints, dark grey spatter finish. \$1695 ea.

**CX1522** 2-way dual 15" full range encl. with 1" horn, 18mm 13 ply birch cab., polyswitch protection, 500W 8 ohms, 8 steel M10 flypoints, dark grey spatter finish. \$2395 ea.

#### CERWIN-VEGAL

*Ashton Admor (08) 9478 3800*

**Intense T250** horn loaded 3-way mid trap. cab., 11H x 520W x 533D, 34kg, carpet covered ply with 8 flying points with Mann Flying Gear. 108dB sens.

128-131 SPL for heavy duty large venues and outdoor concerts. \$2524.

**Intense T36/750** trap. carpet covered ply cab., 18" elephant woofer, 750W E.I.A. 914H x 609W x 914D, 136dB peak SPL for heavy duty large venues and outdoor concerts. Available with Mann Flying Equipment. \$3525. **L-36 PE** portable earthquake 18" folded horn bass. \$2972. **Prostax PS-15311** second generation 15" 3-way tolex covered trap. sound reinforcement cab. 101dB sens. 128dB SPL. Only 34kg. Also available PS-12 and PS-10 with PS215 or PS18B bass bins. \$2406.

#### DAS

*Magna Systems & Engineering (02) 9417 1111*

**RF115** 76 x 52 x 42cm, 500W RMS, 36kg, trap. cab. (carpet), 15" bass 1" HF driver, imp. 8 ohms, freq. response 50Hz-20kHz, 98cB SPL (1W/1m). \$1650.

**PF215** 100 x 52 x 44cm, 500W RMS, 41kg, cab. + high density hardwood thermo-fused for 10 ton presses (carpet finish), 2 x 15" bass drivers, 1 x 8" horn, imp. 8 ohms, freq. response 40Hz-20kHz, 102dB SPL (1W/1m). \$1500.

**Sub-15** 70 x 50 x 40cm, 300W RMS, 26kg, carpet high density hardwood, 1" sub bass driver, imp. 8 ohms, freq. response 40Hz-1.8kHz, 100dB SPL (1W/1m). \$800.

**Sub-18** 76 x 53 x 42cm, 500W RMS, 36kg, carpet high density hardwood, 1" sub bass driver, imp. 8 ohms, freq. response 35Hz-500Hz, 100dB SPL (1W/1m). \$1350.

#### EAW

*Production Audio Services (03) 9415 1585*

**KF650e** Virtual Array Series, high output 3-way full range loudspeaker. 15" LF, 10" MF and 2" comp. driver. Dispersion 60 x 40. Max peak output 132dB SPL. Processor and subs available. \$7935.

**KF900e** Virtual Array Series, compact 3-way full range loudspeaker. 12" LF, 7" MF horn loaded and 1" comp. driver. Dispersion 90 x 40. Max peak output 128dB SPL. Processor and subs available. \$6495.

**JF260e** Hi-Def 2-way full range loudspeaker. 12" LF and 2" exit comp. driver. Dispersion 60 x 45. Max peak output 125dB SPL. 15" version available (JF560e). \$4995.

**LA325** Linear Activation System, high output 3-way full range loudspeaker. Dual 15" LF, dual 6.5" MF and 2" comp. driver. Dispersion 90 x 60. Max peak output 131dB SPL. \$5995.

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*EVI Audio (02) 9648 3455*

**T252** Biampable very high level 2-way system with two high power 15" woofers in a quasi-three way design and a large format comp. driver with a 60deg x 40deg horn for detailed sound with solid, full bodied bass response. Power Handling, Long Term/Short Term: Biamp LF: 800/3,200 W, Biamp HF: 60 W/ 240W, Full range: 800 W/ 3,200 W, Weight: 54kg, \$2999.

**215EVX 'The MongOOSE'** Full range speaker system. 2000 watt double 15 and horn trap. encl.. Australian designed and

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#### FENDER

*Fender Australia (02) 9666 5077*

**0711226 SPL 1226** 4 ohms, 800W program 2x15" woofers 3" voice coils, 1" titanium diaphragm comp. driver 2" voice coil 4th order Linkwitz/Riley Xover, 1/4" phone jacks, Speakon connectors, bi-amp/normal switch, 38 Hz to 20 kHz freq. response, solid plywood trapezoid cab. carpet covered. \$1,599.

**0711330 100 SPL 2912c** 8 ohms, 400W program. Same as 2912 in contracting section except with black carpet covering and no flying hardware. \$1,499.

**0711340 100 SPL 2915c** 8 ohms, 400W program. Same as 2915 in contracting section except with black carpet covering and no flying hardware. \$1,599.

**0711320 100 SPL 2155c** 4 ohms, 1600W program Same as 215s in contracting section except with black carpet covering. \$1,699.

#### JBL

*Jands Electronics (02) 9582 0909*

**MR 925** 2-way Vocal/Music Reinforcement System, 380mm (15") SFG LF Transducer, 25mm (1") Exit Comp. Driver, 44mm (1.75") Titanium Diaphragm Comp. Driver and Flat Front Bi-Radial@ Horn, Integral Stand Mount. 350W power handling. Also MR922 (12" 2-way), MR 935 (15" 3-way) & MR938 (18" 3-way). \$1595 ea.

**SR 4725A** 2-way Full Range PA System: 2226H 380mm (15") LF Transducer; 2426H 25mm (1") exit Comp. Driver and; 2370A Flat-Front, Bi-Radial@ Horn. 600W power handling. Also SR4722A (12" 2-way), SR4726A (15" + 1.5" horn), SR4733A (Dual 15" 2-way), SR4735A (15" 3-way) SR4738A (18" 3-way) as well as complementary subs. \$2795 ea.

**Array 4892** High technology prestige, 2-way Compact High Performance Speaker System: 255mm (14") Neodymium LF Transducer; 38mm (1.5") exit, Large-Format, Titanium Diaphragm Comp. Driver; 45x x 350 Horn, Pole Mount. 600W power handling. Also Array 4894 (Dual 14"). \$6695 ea.

#### KLEIN + HUMMEL

*Digital Sound Systems (02) 9386 1043*

**TXA65** PA loudspeaker 100V column all metal cab.. 2-way with overload protection. Limited vertical spread for long carry in acoustically dead rooms. 50Hz-16kHz, 60W with full, half and quarter input power levels. 14kg. \$1695.

**TSL65** PA loudspeaker 100V column walnut timber cab.. 2-way with 6 low/midrange and 4 tweeters, time aligned with overload protection. Limited vertical spread for long carry in acoustically dead rooms. 50Hz-17kHz, 60W with full, half and quarter input power levels. 18kg. \$1995.

**RX120** PA loudspeaker 100V multilayer birchwood trapezoid cab. for cluster mounting. Coverage angle 130 x 130° and 2 x Neutrik Speakon connectors in parallel. 85Hz-17kHz, 120W with full, half and quarter input power levels. 17kg. \$1895.

**RW120** weatherproof PA loudspeaker 100V fibreglass reinforced trapezoid cab. for cluster mounting. Coverage angle 130 x 130° and 2 x Neutrik Speakon connectors in parallel. 85Hz-17kHz, 120W with full, half and quarter input power levels. 13.5kg. \$2150.

#### KLIPSCH

*Horwood Australia (02) 9585 1011*

**KP-262** 12" 2-way; 250W; 50Hz-17,500Hz; 12 ATM fly-points; 60x40 horn; weight 24kg; excels in array applications. \$1735.

**KP-396-B** 15" 2-way; 600W; 45Hz-17,000Hz; 12 ATM fly-points; 90x40 horn; weight 39kg; 129dB max. continuous output. \$3295.

**KP-3002-C** 15" 2-way; 500W; 60Hz-17,500Hz; 127dB SPL; weight 30kg; \$1549.

**KP-4002-CX** 18" sub-bass with passive 15" to increase bass response; 44Hz-200Hz; in-built 150Hz crossover; max. continuous SPL is 130dB; 400W. \$1759.

#### MACH

*Audiology (02) 9584 0033*

**M128R** 1 x 12" + 2" horn. 350W RMS, 18mm birch ply cab., passive or active, aluminium flying trap, 97dB passive or 99.5dB active 1W/1m, 22 kg, 45Hz-18kHz. \$1599.

**M154R** 1 x 15" + 2" horn. 500W RMS, 98dB passive or 102dB active 1W/1m, 35 kg, 43Hz-18kHz, other features as above. \$2399.

**M126R** 2 x 12" + 2" horn. 600W RMS, 100dB passive or 103dB active 1W/1m, 50 kg, 40Hz-18kHz, other features as above. \$3499.

**M156R** 2 x 15" + 3" horn. 1000W RMS, 103dB passive or 105dB active 1W/1m, 68 kg, 37Hz-18kHz, other features as above. \$4499.

#### MARTIN AUDIO

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

**EM76** 12" 2-way trap. PA speaker with 1" Comp. Driver/CD Horn. 124dB peak SPL. 60Hz-18kHz. 10 x M8 Flying points. Subs. Option. EMX1 Controller required. \$2395.

**ICT500** 4 x 10" in extremely compact encl.. 2 x 10" ICT 2-way and 2 x 10" sub drivers. 127dB peak SPL. Unblowable HF driver. 45Hz-18kHz. Omniumount fittings. M2 controller required. \$2495.

**W3** 15" 3-way trap. PA speaker with 1" comp. driver/CD horn and 6.5" horn loaded midrange. Active 2-way. 55Hz-18kHz. Equipped for flying. Subs. Option. WX3 controller required. \$4995.

**W8C** 3-way trap. concert system with 1" comp. driver/CD horn. 6.5" high-mid and 12" low-mid both horn loaded with 55° horizontal dispersion. Active 2 or 3-way. 135dB peak SPL. 120Hz-18kHz. Fully equipped for flying. Subs. Opt.on. MX5 controller required. \$7750.

#### MEYER SOUND

*Richardson & Devine (07) 3252 4433*

**UPA-1P** 2-way self powered speaker encl., bi-amped (350W/ch), phase-corrected, constant Q, 12" + 100" horn, painted black, c/w ring/stud flyware. \$7995.

**CQ-1** self powered, full range

trap. speaker encl.. 40Hz-18kHz, 136dB SPL max, 58kg, painted black, c/w ring/stud flyware. \$10,500.

**UPL-1** full range self powered speaker encl., 32Hz-20kHz, 10" speaker + 90 horn, 124dB SPL max, 32kg, painted black, c/w nut plate flyware. \$5000.

**MTS-4** four way self powered, full range speaker encl., 32Hz-16kHz, 18" + 15" + 12" speakers 4" comp. driver on 70" - 60" horn, 140dB SPL max, 127kg, painted black. \$16,000.

#### PEAVEY

*Audio Telex Communications (02) 9647 1411*

**Impulse 1582** Bi-ampable, 8 ohm, full range 2 way system with internally reinforced encl.. Symmetrically located mounting points ensure stable and balanced suspension. Loaded with 1505 15" woofer and CD horn with 44T comp. driver, 55Hz - 19kHz, 122dB max SPL at 1 meter. 300w continuous, 600w program. Grey spatter paint or natural finish. \$1891.

**SP4G** Bi-ampable, 4 ohm, 3 way system in a trap. encl. for ease of arraying with built in pocket castors for easy movement. Loaded with 2 x 1505 15" Black Widow@ woofers and a CH941 horn with 22XT 133dB peak SPL at 1 meter. 600w continuous, 1200w program, 2400w peak. Features SoundGuard high freq. protection circuit. \$2222.

**DTHS4** Externally switchable full range/bi-ampable, 4 ohm, 3 way system in a minimum profile trap. encl. Dual 1505DT Black Widow@ woofers and 80x40 CD horn with 44T comp. driver with 2" throat diameter. 50Hz - 18kHz with max SPL of 124dB. 600w continuous, 1200w program, 2400w peak. Optional ATM internal "ring and pan" flyware available with 5 flying points. Parallel Speakon@ inputs. \$2480.

**Q2212** Concert sound mid bass speaker system featuring 2 x 12" neodymium magnet core woofers and ferrofluid@ cooled 4" titanium comp. driver. 100Hz - 18kHz with peak SPL of 144dB! 700w continuous, 1400w program. Baltic Birch plywood encl. finished in grey polyurethane finish. Rigging points top & bottom via Air Cargo 20864 L track attached to internal sub structure. Q218 subs. also available. \$10,103.

#### RCF

*Group Technologies (03) 9872-5000*

**ART 300A** Self powered 12" and horn plastic speaker box, bi-amped 300w bass and 60w h/f. 10 year w'tee, 20kg, 126dB max. \$1995

**ART 200AM** Self powered 12" and horn plastic speaker box w/ mixer. Biamped 120w bass 40w horn, 10 yr w'tee, 18kg, 121dB max. \$1595

**ART 200A** Self powered 12" and horn plastic speaker box, bi-amped 120w bass 40w horn, 10 yr w'tee, 18kg, 121dB max. \$1500

**ART 600AS** Self powered sub 300w w/hd amp, 12" woofer 10yr w'tee max SPL 123dB \$1995

#### YAMAHA

*Yamaha Music Australia (03)*

### 9693 5164

**WF115** waveforce 2-way FOH 15" cone + 2" waveguide horn 200W (noise) 97dB/Watt, 45-19kHz, 46kg, trap. cab., bi-amp mode, colour and distortion free, speaker connectors. \$2295.

**WF112** waveforce 2-way FOH 12" cone + 2" waveguide horn 200W (noise) 96dB/Watt, 45-19kHz, 22kg, trap. cab., bi-amp mode, colour and distortion free, speaker connectors. \$1895.

**WF206** waveforce 2-way FOH/Mon, dual 6.5" cone + 2" waveguide horn 100W (noise) 92dB/Watt, 50-19kHz, 13kg, triangular cab., bi-amp mode, speaker connectors, pole mount. \$1395.

**WF2155B** waveforce dual 15" Subs., 400W (noise) 96dB/Watt, 25-250Hz, 54kg, bass reflex cab., speaker connectors, integral handles. \$2295.

### UNDER \$1500 EACH

#### AMPOWER

*Amps Unlimited (03) 9357 8580*

**AB 102** 100W, 8 ohm, 2-way, 10" bass driver, 180mm x 75mm Peizo horn, black carpet finish. 310W x 400H x 240D, 14kg, sturdy carry handle, top hat base, steel mesh grille top. \$325.

**AL 1222** 200W, 8 ohm, 2-way, 12" Lorantz bass driver, 270mm x 100mm Foster horn, black carpet finish. 410W x 540H x 300D, 17kg, sturdy carry handle, top hat base, steel mesh grille. \$575.

**AM 1523** 300W, 8 ohm, 2-way, 15" Eminence bass driver, 270mm x 100mm Foster horn, black carpet finish. 520W x 610H x 365D, 20kg, sturdy carry handle, top hat base, steel mesh grille. \$785.

**AM 1525** 500W, 8 ohm, 2-way, 15" Eminence bass driver, 270mm x 100mm Foster horn, black carpet finish. 520W x 610H x 365D, 20kg, sturdy carry handle, top hat base, steel mesh grille. \$1050.

#### CELESTION

*The Electric Factory (03) 9480 5988*

**KRA** designed for quality background installation sound, 2-way 8" full range 150W 4 ohm, polyswitch protection, omniumount compatible, 5.18kg, grey finish. \$499 ea.

**KRB** suitable for high level installed sound or portable vocal PA. 2-way 8" full range 175W 8 ohm, polyswitch protection, omniumount compatible, 7kg, grey finish. \$599 ea.

**KR10** ideal for large restaurant installation or on stage with a cabaret. 2-way 10" full range 200W 8 ohm, polyswitch protection, omniumount compatible, 10.28kg, grey finish. \$749 ea.

**KR Sub** designed to be used with a pair of KRA's where additional bass is required. Dual channel 10", 100W plus 100W 4 ohm, omniumount compatible, 10.65kg, grey finish. \$799 ea.

#### CERWIN-VEGAL

*Ashton Admor (08) 9478 3800*

**V122** light 16kg, high 102dB sens., compact 622 x 457 x 419 portable 2-way, full range speaker for performers and vocalists. Tolex or carpet covered trap. cab.. \$1051.

**V152** light 31.5kg, high 103dB sens., compact 787 x 495 x 413 portable 2-way, full range speaker for performers and vo-

# BUYER'S GUIDE

## loudspeakers & systems

Prices each, include sales tax, and were correct at 15th October. All care taken no responsibility for errors. Four models only shown in each category, all these manufacturers have many, many more. Indicative only.

calists. Also available in 3-way version - V153. Tolex or carpet covered trap. cab.. \$1422.

**DAS**  
*Magna Systems & Engineering* (02) 9417 1111

**Factor-8** 44 x 27 x 23cm, 100W RMS, 5.5kg, polypropylene finish, 8" 2-way, impedance 8 ohms, freq. response 40Hz-20kHz, 91dB SPL 2.8v/1m. \$390.  
**Factor-12** 58 x 40 x 31cm, 200W RMS, 17kg, polypropylene finish, 12" bass, 1" tweeter, impedance 8 ohms, freq. response 35Hz-20kHz, 94dB SPL (1W/1m). \$850.

**DS-12** 58 x 40 x 31cm, 300W RMS, 17kg, polypropylene finish, 12" bass, 2" horn, impedance 8 ohms, freq. response 50Hz-20kHz, 98dB SPL (1W/1m). \$1100.

**DS-15** 68 x 44 x 36cm, 300W RMS, 23kg, polypropylene finish, 15" bass, 2" horn, impedance 8 ohms, freq. response 45Hz-20kHz, 100dB SPL (1W/1m). \$1300.

**EAW**  
*Production Audio Services* (03) 9415 1585

**FR102HR** 2-way, full range cost effective loudspeaker system. 10" LF with 1" comp. driver. Dispersion 90 x 45. 12" version (FR122a) and 15" version (FR152e) available. \$1495.

**JF50s** ultra compact Hi-Def 2-way full range loudspeaker system. Dual 5 1/4" LF and 1" soft dome. Dispersion 120 x 80. Max peak output 112dB SPL, video shielded. \$1495.

**JF60** ultra compact Hi-Def 2-way full range loudspeaker system. 6.5" LF and 33mm soft dome on a wave guide. Dispersion 120 x 120. Max peak output 111dB SPL. Dual 6.5" version available. \$1395.

**UB12s** ultra compact Nearfield Reinforcement system. Single 4.5" LF and 1" soft dome. Dispersion 120 x 120. Max peak output 113dB SPL. Video shielded. \$575.

**ELECTRO-VOICE**  
*EVI Audio* (02) 9648 3455

**SX100** Easily arrayed, stacked or stand mounted. Features an EVG Woofer, one inch DH2005 our titanium-diaphragm comp. driver. The SX100 has 9 inch connectors. Also Available in white. Power handling 200W long term / 800W short term. \$999.

**S12** High-Q Twelve Inch two way. High Q 60 x 40 deg horn, high performance EV cast frame woofer and optimally vented encl.. Power handling 250 W long term/1000 W short term. Weight: 22.7kg. \$899.

**S15** High-Q 60 x 40 deg horn, premium EV comp. driver and SG15 woofer. Power handling 150 W short term/1000 W long term. Weight: 24.5kg. \$999.

**S18 Subs.** Cast frame 18 inch woofer developed specifically for the S18 will handle 300 watts continuous, 1200 watts short-term. Weight: 31.8kg. \$1149.

**FENDER**  
*Fender Australia* (02) 9666 5077

**0711225 SPL 1225** 8 ohms, 400W program. 1x15" bass speaker, 1" titanium diaphragm comp. driver with 2" voice coil coupled, 4th order Linkwitz/Riley xover, 1/4" phone jacks, Speaker connectors, bi-amp switch, 50Hz to 20 kHz, solid

plywood trapezoid cab. Black carpet covering. \$1,299.

**0711211 SPL 1211** 8 ohms, 300W program. 1x15" bass speaker, 1" comp. driver, 50Hz to 20Hz, bi-ampable, rectangular cab., Black carpet covering. \$899.

**0711500 115-ELC** 8 ohms, 300W program. 1x15" bass speaker, dual piezo driver. trap. cab.. Black carpet covering. 60Hz to 20kHz. 1/4" phone jack. \$599.

**0711200 112-ELC** As above except 12" speaker. 200W program. \$499.

**GEMINI**  
*Disco World P/L* (03) 9735 0588

**GSM1232** 12", 100W RMS, carpet finish, freq. response 40Hz-20kHz, 98dB. \$385.

**GSM1545** 15", 175W RMS, carpet finish, freq. response 32Hz-20kHz, 101dB. \$499.

**GSM3055** 2 x 15", 300W RMS, carpet finish, freq. response 30Hz-20kHz, 103dB. \$899.

**GSM1852** 18", 250W RMS, carpet finish, freq. response 28Hz-20kHz, 103dB. \$742.

**HAMMER**  
*Melbourne PA + Stage P/L* (03) 9578 2426

**112THD FOH 12"** with 1" comp PA cab.. Trapezoid 250/500W. 106dB 1w/1m matching sub - 212BP, 155BP. \$950.

**212BP** triple chamber 2 x 12" Bandpass Subs. 400/800W 105dB 1w/1m, matching cab - 112THD. \$1150.

**112HWD FOH/Floor Monitor 12"** with 1" comp, 250/500W 106dB 1w/1m, Dual Angle and Top Hat ideal for foldback or FOH. \$925.

**155BP** 15" Bandpass Subs. 400/800W, 101dB 1w/1m, matching cab - 112THD. \$1350.

**JBL**  
*Jands Electronics* (02) 9582 0909

**Control 1** Personal Size 2-way System, 135mm (5-1/4") LF, 18mm (3/4") Polycarbonate Dome Tweeter, Moulded Encl., Shielded Magnet - Black. Also available in unshielded version as well as Control 5 (165mm 2-way). \$323 ea.

**Control Contractor 23** 89mm (3.5") 2-way vented system. Paintable, weather resistant, 90o horn. Built-in mounting hardware featuring the Invisiball TM. 50W Power Capacity. Ideal for background music in restaurants, bars and retail shops. Also Control 25 (135mm 2-way) & Control 28 (200mm 2-way) as well as SB2 subs. system. \$248 ea.

**TR 125** 2-way Vocal/Music Reinforcement System, 380mm (15") LF Transducer, Fluid Cooled Comp. Driver with 25mm (1") Titanium Diaphragm and Optimised Aperture Horn, Integral Stand Mount. 225W power handling. Also TR225 (Dual 15" & Horn) & TR126 (Horn loaded 15" & horn). \$995 ea.

**EON 15** 2-way Non Powered Speaker System: 380mm (15") LF, 90° x 60° Bi-Radial® Horn. Moulded Encl., stand mount. Also EON 10 (10" 2-way) & EON 15P/10P powered versions with internal Bi-amplification. \$1395 ea.

**KLEIN + HUMMEL**  
*Digital Sound Systems* (02) 9386 1043

**TWA10** weatherproof loudspeaker column suitable for permanent outdoor or indoor installation. Featuring built-in 4 ohm/100V line transformer, 2 full range 80mm speakers, 150Hz-16kHz, 15W max with full, half and quarter input power levels. 1.8kg. \$295.  
**TX402/HR** 2-way 100V loudspeaker for ceiling mounting complete with universal mounting frame. Equalisation circuit for optimal sound reproduction. 80Hz-20kHz, 60W max with full, half and quarter input power levels. 3.7kg. \$795.  
**TSA30** PA loudspeaker 100V column all metal cab., 98mm wide. Minimal acoustic feedback via optimised response and directivity. 80Hz-16kHz, 10W max with full, half and quarter input power levels. 4.8kg. \$725.  
**TSX30** PA loudspeaker 100V 2-way column all metal cab. with white RAL 9010 finish. Speaker directivity and response optimised for speech intelligibility and music coverage even in acoustically difficult rooms. 70Hz-16kHz, 30W max with full, half and quarter input power levels. 11.5kg. \$1195.

**KLIPSCH**  
*Horwood Australia* (02) 9585 1011

**KP-102** 8" 2-way; 100W; 75Hz-20kHz; 90x40 horn; weight 9kg; 115dB output; 70v line option. \$475.

**KP-1000-CX** 15" sub; 400W; 40Hz-400Hz; in-built 150Hz crossover; weight 30kg; 127dB SPL; 70v line option. \$1189.

**KP-2002-C** 12" 2-way; 175W; 65Hz-15.5kHz; 60x40 horn; max. SPL 125dB; weight 17kg. \$819.

**KP-2502-C** 12" 3-way; 250W; 65Hz-20kHz; 90x40 horn; max. SPL 125dB; weight 22kg. \$1189.

**MACH**  
*Audiology* (02) 9584 0033

**X1200P** 1 x 12" & Piezo. 150W RMS, 95dB 1W/1m, 20 kg, 57Hz-18kHz, laminated MDF construction, handles and stand adaptor. \$599.

**X1200** 1 x 12" + 1.5" horn. 200W RMS, 97dB 1W/1m, 22 kg, 57Hz-19kHz, other details as above. \$799.

**X1500** 1 x 15" + 1.5" horn. 300W RMS, 97dB 1W/1m, 29 kg, 54Hz-19kHz, other details as above. \$999.

**X1510** 1 x 15" subs. with built-in cross over. 300W RMS, 97dB 1W/1m, 31 kg, 49Hz-600Hz, other details as above. \$899.

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

**ICT10** 5" ICT (unblowable HF) 2-way PA speaker in weatherproof polypropylene magnetically shielded encl.. White/black. Omnimount fittings. \$225.

**EM26** 8" 2-way trap. PA speaker with 1" comp. on driver/CD horn. 117dB peak SPL. 70Hz-18kHz. Omnimount fittings. Subs. options. \$1195.

**W0.5** 8" 2-way trap. PA speaker with 1" comp. on driver/CD horn. 117dB peak SPL. 70Hz-18kHz. Pole mount/Omnimount fittings. \$1295.

**ICT300** 2 x 10" ICT 2-way PA speaker. 125dB peak SPL. Unblowable HF driver. 55Hz-

18kHz. Omnimount fittings. Subs. options. M1 Controller required. \$1495.

**PAS**  
*Australian Monitor* (02) 9874-9355

**TARGET T1200** 2 way full range speaker system featuring 12" woofer and phenolic diaphragm comp. driver. 98dB / 1 watt @ 1 metre. 140 watts continuous, 560 watts peak. 8 ohms, trap., 610 x 381 x 406mm. \$915 ea.

**TARGET T1500** 2 way full range speaker system featuring 15" woofer and phenolic diaphragm comp. driver. 98dB / 1 watt @ 1 metre. 140 watts continuous, 560 watts peak. 8 ohms, trap. 711 x 457 x 483mm. \$1,170 ea.

**PEAVEY**  
*Audio Telex Communications* (02) 9647 1411

**Impulse 6** Mini two way speaker system in a trap. encl., available in black or ivory finish. 50w continuous, 100w program. 5" woofer with 1" dome tweeter. 70Hz - 20kHz, 84dB SPL 1W/1m. 100v line version also available. Optional VM35 swivel bracket also available. Stereo subs. with built in X-over to suit also available. \$291.

**Impulse 652S** Two way, full range speaker system in a bookshelf style encl.. 175w continuous, 350w program, 4 ohms. Magnetically shielded, black encl.. 6 1/4" woofer and 8" titanium tweeter. Internal crossover has 12dB per octave slope for good power handling. 60Hz - 18kHz, 91dB SPL 1W/1m. Optional VM35 swivel bracket available. \$825-pair.

**Stadia II** Two way full range speaker system, providing high performance in a weather resistant trap. encl., available in black or ivory finish. 200w continuous, 400w program. 12" Kevlar impregnated woofer and CD90 horn with 22XT comp. driver with 1" throat. 58Hz - 18kHz, 94dB SPL 1W/1m. 100v line version also available. Optional VM70 swivel bracket or ATC980A stand also available. \$615.

**Impulse 200** Two way full range speaker system providing ultra high performance in a portable injection moulded trap. shape encl.. 300w continuous, 1200w peak, max SPL of 134dB peak at 1 meter. 12" Black Widow® (1268) woofer and 22XT comp. driver with 1" throat diaphragm and 90x45 moulded horn. 78Hz - 18kHz, speaker and 9" inputs in parallel. Suitable for mounting with VM70 swivel bracket, flying, use with floor stand or self standing. Sensational sound. \$950.

**PHONIC**  
*CMC Music* (02) 9905 2511

**SE 112H** 200W RMS, 12" speaker/1" comp. driver, trap., black carpet finish, 28kg. 430w x 585h x 290dmm. 8 ohms. \$599.

**SE 115H** 250W RMS, 15" speaker/2" titanium comp. driver, trap., black carpet finish, 35kg. 490w x 585h x 355dmm. 8 ohms. \$799.

**RCF**  
*Group Technologies* (03) 9872-5000

**ART 300** Passive 12" & horn

plastic speaker box 300W RMS 600w cont. proq. max SPL 1m 126dB 14kg \$1250

**Monitor 8** 2 way monitor with exceptional bass response for size, 1 x 8" speaker with 1" horn. 5kg. \$995

**MS8W** Subwoofer with high power 300w woofer, designed to complement the Monitor range of speakers. 18kg. \$1075

**SONY**  
*Sony Australia* (02) 9887 6672

**SMS-1P** powered near field monitor, 2 inputs, 1 balanced XLR & 6.5mm, 1 inbalanced RCA & 6.5mm, separate volume controls, bass and treble controls, 15W RMS, 10cm mag shielded driver, 132 x 210 x 220 mm timber cab.. \$579.

**YAMAHA**  
*Yamaha Music Australia* (03) 9693 5164

**5115 IV Club IV** 2-way FOH 15" cone + 2" titanium comp. driver. 250W (noise) 99dB/Watt, 55-16kHz, 27kg, carpet covered trap. cab., metal handles, pole mount, polyswitch protection. \$999.

**5112 IV Club IV** 2-way FOH 12" cone + 2" titanium comp. driver. 150W (noise) 97dB/Watt, 60-16kHz, 19kg, carpet covered trap. cab., metal handles and corners, pole mount, polyswitch protection. \$899.

**SV12 Club IV** 2-way FOH 12" cone + PIE20 horn. 100W (noise) 97dB/Watt, 60-20kHz, 15kg, carpet covered trap. cab., metal handles and corners, pole mount, polyswitch protection. \$699.

**SW118 IV Club IV** 18" Subs.. 250W (noise) 96dB/Watt, 30-2kHz, 32kg, carpet covered, bass reflex encl., metal handles and corners, pole mount, polyswitch protection. \$1199.

**STAGE MONITORS/WEDGES**

**AMPPOWER**  
*Amps Unlimited* (03) 9357 8580

**AB 122M** 125W compact double angle foldback monitor, high impact corners, black carpet finish. 530W x 395H x 300D, 14kg, sturdy carry handle, steel mesh grille, imported driver, Foster horns. \$380.

**AB 1522M** 200W compact double angle foldback monitor, high impact corners, black carpet finish. 570W x 385H x 345D, 19kg, sturdy carry handle, steel mesh grille, Eminence driver, Foster horns. \$500.

**AL 1222M** 200W double angle foldback monitor, high impact corners, black carpet finish. 530W x 395H x 300D, 15kg, sturdy carry handle, steel mesh grille, Lorantz driver, Foster horns. \$525.

**ALP 120M** 100W powered foldback monitor, high impact corners, black carpet finish. 530W x 395H x 300D, 19kg, sturdy carry handle, steel mesh grille, Lorantz driver, Foster horns. \$775.

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

**PowerMAX 3** Compact multi angle (30, 60 and 90 degrees) low profile monitor wedge. 12" Pro series LF driver with 1" throat Ferro cooled HF driver. Stunning sound, rugged all ply construction. Uses ARX PowerPRO dual channel system controller. **PowerMAX 4** Multi angle (30, 60

and 90 degrees) low profile monitor wedge. 15" Pro series LF driver with 1" throat Ferro cooled HF driver. Smooth sounding, loud, rugged all ply construction. Uses ARX PowerPRO dual channel system controller.

**215M** Active 2 way Concert Series multi angle (30, 60 and 90 degrees) low profile monitor wedge. 15" Ultra series LF driver with 2" throat Ferro cooled HF driver. For all professional stage monitor applications. Uses the new LSP-2 dual channel plug-in card speaker processor.

**222** Active 2 way Concert Series multi angle (30, 60 and 90 degrees) very low profile monitor wedge. Dual 12" Ultra series LF drivers with 2" throat Ferro cooled HF driver. For all professional vocal monitor applications. Uses the new LSP-2 dual channel plug-in card speaker processor.

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

**QMX-D12 WEDGE** Floor Monitor version of QMX-D12. 2 x 12" woofers + 2" comp' driver on 90° x 40° (deg) CD horn. 104dB 1 watt @ 1 metre. 133dB peak @ 600 watts. 4 ohms. \$2,370 ea.

**F300** Full range 2 way floor monitor. Vented encl. featuring 15" co-axial woofer + 1" comp' driver. 60o(deg) x 40o(deg) CD horn, 99dB - 1 watt/1 metre 500 watts peak for 125dB. 8 ohms, 550 x 450 x 460mm. \$1,830 ea.

**TARGET T1212** Full range, cost effective, 2 way floor monitor. Featuring 12" cast frame woofer and phenolic diaphragm comp' driver. 98dB 1 watt / 1 metre 140 watts continuous/560 watts peak. 8 ohm. 546 x 381 x 365mm. \$1,025 ea.

**CERWIN-VEGA!**  
*Ashton Adami* (08) 9478 3800

**SM 122** 12" 2-way coax configuration wedge shaped nearfield monitor, 101dB sens., higher gain before feedback, carpet or tolex covered. \$1045.

**SM 152** 15" 3-way coax configuration wedge shaped nearfield monitor, 103dB sens., higher gain before feedback, carpet or tolex covered. \$1198.

**DAS**  
*Magna Systems & Engineering* (02) 9417 1111

**PF-012** 415 x 590 x 250mm, 250W RMS, 21kg, high density hardwood (carpet), 12" bass, 1" horn, impedance 8 ohms, freq. response 60Hz-20kHz, 99dB SPL 2.8v/1m. \$990.

**PF-015** 465 x 660 x 385mm, 300W RMS, 26kg, high density hardwood (carpet), 15" bass, 1" horn, impedance 8 ohms, freq. response 58Hz-20kHz, 100dB SPL 2.8v/1m. \$1100.

**ST-32** 45 x 54 x 70cm, 300W RMS, 24kg, high density hardwood (carpet), 15/7" coaxial speaker, impedance 8 ohms, freq. response 60Hz-20kHz, 98dB SPL 2.8v/1m. \$1600.

**EAW**  
*Production Audio Services* (03) 9415 1585

**SM500iv** high output concert series, full range stage monitor. Single 15" with 2" comp. driver, 60 degrees angle. Dispersion 60 x 45. Max peak output 127dB SPL. \$5295.

**SM200iv** high output concert

series, full range stage monitor. Single 12" with 2" comp. driver, 90 degrees angle. Dispersion 90 x 90. Low profile version (SM200IH) available. \$4895. **SM122e** high output full range stage monitor system. Single 12" with 1" comp. driver, 45 degrees angle. Dispersion 90 x 45. 15" version (SM155e) available. \$2195. **LA212** unique design which features ability to operate as a wedge or stand alone box. Single 12" with 2" comp. driver, full range, bottom pole mount, 15" version available. \$2995.

#### ELECTRO-VOICE

**EVI Audio (02) 9648 3455**  
**FM12C** Ideal for vocal and instrument monitoring, the FM12C's tough, compact polyethylene cab. offers floor orientations of 35deg, 45deg & 50 deg. A Super-Dome tweeter mounted coaxially with the woofer creates a single, full-range source. 13.4kgs. \$1049. **FM1202ER** Ideal for situations demanding more low-end punch, the FM-1502ER includes an EVM 15L woofer and the same great high freq. components as the FM1202 ER. Weight 43.2kgs. \$1779.

#### FENDER

**Fender Australia (02) 9666 5077**  
**0711272 1272** 16 ohms, 200W program. 1x12" speaker, dual FPZ drivers coupled to a dual element horn, 60Hz to 20Hz, 30 or 60 degree tilt, 1/4" phone jacks, Black carpet covering. \$549. **0711275 1275** All other specs as above. 40Hz to 20kHz freq. response. 15" speaker. \$599. **0711282 1282** 8 ohms, 300W program. 12" cast frame bass speaker with 3" voice coil, 2" voice coil comp. driver coupled to a constant directivity horn,

60Hz to 20 kHz, 4th order Linkwitz/Riley xover, biamp switch, 1/4" phone jacks, Speakon connectors. All other specs as above. \$1,099. **0711285 1285** 15" cast frame bass speaker. Other specs as above. \$1,199.

#### HAMMER

**Melbourne PA + Stage (03) 9578 2426**  
**112HWD** floor monitor 12" with 1" comp, 250/500W Dual Angle with Top Hat, 106dB 1w/1m. \$925 ea.  
**110HW** floor monitor 10" with H.F. 150W. Compact, clear and loud, carpeted with corners. \$395 ea.

#### JBL

**Jands Electronics (02) 9582 0909**  
**TR 105** 2-way Stage Monitor, 380mm (15") LF Transducer, Fluid Cooled Comp. Driver, with 25mm (1") Titanium Diaphragm and Optimised Aperture TM Horn. \$995 ea.  
**MR 905** NEW! 2-way Stage Monitor, 380mm (15") LF Transducer, 25mm (1") Exit Comp. Driver, 44mm (1.75") Titanium Diaphragm Comp. Driver and Flat Front Bi-Radial@Horn. Also MR902 (12" 2-way). \$1595 ea.  
**SR4706A** 2-way High Level Full-Range Stage Monitor System: 2226G 380mm (15") LF Transducer; 2447J 38mm (1.5") exit Large-Format Titanium Diaphragm Comp. Driver; 2381 90 x 50 Optimised Aperture Horn, Flat-Front, Bi-Radial@Horn. Also SR4704A (with 1" HF). \$4395 ea.  
**Array 4890** Horizontal Format 2-way Controlled Floor Monitor: 355mm (14") Neodymium LF Transducer; 38mm (1.5") exit, 100mm (4") Large-Format Titanium Diaphragm Comp. Driver and; 60 x 40 Rotatable,

Optimised Aperture, Flat-Front, Bi-Radial@Horn. Also 4891 (vertical format). \$6695 ea.

#### KLIPSCHE

**Horwood Australia (02) 9585 1011**  
**KSM-12C** 12" 2-way; 300W; 85Hz-15kHz; weight 22kg; max. SPL 126dB; can bi-amp. \$1275.  
**KSM-15C** 15" 2-way; 400W; 55Hz-15kHz; weight 27kg; max. SPL 127dB; can bi-amp; 90x40 horn. \$1495.

#### MACH

**Audiology (02) 9584 0033**  
**X1501R** 1 x 15" + 2" horn. 500W RMS, 99dB 1W/1m, 35 kg, 45Hz-18kHz, 118mm birch ply cab. steel handles. \$2199.  
**X1502R** active 1 x 15" + 3" horn. 45Hz-19kHz, 99dB/110dB LF/ HF 1W/1m, 400W LF/75W HF, 36kg, other details as above. \$2599.

#### MARTIN AUDIO

**A.R. Audio Engineering (02) 9810 5300**  
**WMO.5** 8" 2-way miniature wedge monitor with 1" comp. driver/CD horn. 50<sup>U</sup> x 70<sup>U</sup> dispersion. 120dB peak SPL. 70Hz-18kHz. \$1195.  
**LE350** 12" 2-way low profile wedge monitor with 1" HF comp. driver on differential dispersion horn. 125dB peak SPL. 70Hz-18kHz. \$3300.  
**LE400** 15" 2-way passive or active wedge monitor with 1" HF comp. driver on differential dispersion horn. 127dB peak SPL. 50Hz-16kHz. \$3900.  
**LE700** 15" 2-way active wedge monitor with 2" EV DH1A comp. driver on differential dispersion horn and 4" voice coil 15" ATC driver. 130dB peak SPL. 60Hz-15kHz. \$5750.

#### MEYER SOUND

**Richardson & Devine (07) 3252**

#### 4433

**UM-1P** 2-way self powered stage monitor, bi-amped (350W/ch), phase-corrected, constant Q, 12" + 45<sup>U</sup> horn, painted black. \$7995.  
**PSM-2** 2-way self powered stage monitor, 139dB SPL max, 12" speaker + 4" comp. driver (horn loaded), painted black. \$10,000.

#### PEAVEY

**Audio Telex Communications (02) 9647 1411**  
**112M** 65 watt, 8 ohm foldback wedge loaded with 12" heavy duty speaker with a CDM high freq. horn. Black, light weight vented encl. 70Hz - 17kHz freq. response with a 95dB SPL 1W/1m. \$471.  
**112CM** 65 watt, 8 ohm foldback wedge loaded with a 12" heavy duty speaker with a CDH multi flare high freq. horn housed in a neutral bleached oak finished encl. Comes complete with an off white grill, dual 9" speaker jacks and a level attenuator. 70Hz - 17kHz freq. response with a 95dB SPL 1W/1m. \$637.  
**SP112M** Full range floor monitor, bi-ampable, 8 ohms, 250 watts continuous, 500w program. Loaded with a 1201-8 12" Black Widow woofer and a 22XT comp. driver on a CH3 CD horn. 100Hz - 14kHz with 101dB SPL 1W/1m. Features 2 x full range parallel inputs and 1 each bi-amp high and low. SoundGuard high freq. protection circuit. \$1052.  
**DTHSM** Low profile, high output floor monitoring system available in left and right versions. 2 way consisting of 1 x 1505DT Black Widow woofer and a 44T comp. driver coupled to a 60x60 CD horn. Bi-ampable or full range inputs via parallel Speakon® connectors, lockable mode select switch. 400w continuous, 800w program,

1600w peak. Max SPL of 122dB, 68Hz - 16kHz. \$1881.

#### PHONIC

**GMC Music (02) 9905 2511**  
**SE-201M** monitor wedge, 200W RMS, 12" speaker/1" comp. driver, black carpet, 24kg. 8 ohms. \$650.  
**SE-202M** monitor wedge, 250W RMS, 15" speaker/2" titanium comp. driver, black carpet, 25kg. 8 ohms. \$799.  
**SE-201MW** powered monitor wedge, 200W RMS, 12" speaker/1" comp. driver, black carpet, 27kg. 8 ohms. \$995.

#### YAMAHA

**Yamaha Music Australia (03) 9693 5164**  
**WF112M** waveforce low profile 2-way monitor, 12" + 2" waveguide horn. 200W (noise) 96dB/Watt, 45-19kHz, 46kg, bi-amp mode, speakon connectors. \$1895.  
**SM115** IV Club IV monitor, 15" cone + 2" titanium comp. driver. 250W (noise) 99dB/Watt, 55-16kHz, 26kg, carpet covered trap. cab., metal handles and corners, pole mount, polyswitch protection. \$999.  
**SM112** IV Club IV monitor, 12" cone + 2" titanium comp. driver. 250W (noise) 97dB/Watt, 60-16kHz, 20kg, carpet covered trap. cab., metal handles and corners, pole mount, polyswitch protection. \$899.  
**SV12M** Club IV monitor, 12" cone + PIE20 horn. 1000W (noise) 97dB/Watt, 60-20kHz, 23kg, carpet covered trap. cab., pole mount, polyswitch protection. \$699.

#### SYSTEM CONTROLLERS

#### ARX

**ARX Systems (03) 9555 7859**  
**LSP-1** Dual channel Plug-In card Low Freq. speaker proces-

sor. Provides looped output to rest of system, phase correction, eq trim, speaker protection for all ARX Low Freq. speaker systems, or can be supplied with custom cards for OEM and for use with other brands.  
**LSP-2** Dual channel Plug-In card 2 way speaker processor. Provides crossover functions, phase correction, eq trim, speaker protection for all active 2 way ARX speaker systems, or can be supplied with custom cards for OEM and for use with other brands.  
**PowerPRO** Dual channel plus Sub Out speaker processor. Provides crossover to Sub, phase correction, eq trim, speaker protection for all ARX PowerMAX speaker systems. Can also be used with other brands having similar speaker configuration.  
**MicroPRO** Dual channel plus Sub Out speaker processor. Provides crossover to Sub, phase correction, eq trim, speaker protection for the ARX MicroMAX speaker system. Can also be used with other brands having similar speaker configuration.

**EAW**  
**Production Audio Services (03) 9415 1585**  
**MX 8600** all new digital processing system, 2 in/4 out, Inp/outs input/output parametric EQ, variable delay, Hi/Lo pass filters, output limiters, 40-bit internal processing, MIDI/RS232 control.  
**MX800i** close coupled electronic processor, 2-channel, 4-way crossover with overload protection, phase correction circuitry, asymmetrical filters and excellent front panel adjustments. \$6995.  
**MX300i** close coupled electronic processor, 2-channel, 3-

#### EAW

channel, 4-way crossover with overload protection, phase correction circuitry, asymmetrical filters and excellent front panel adjustments. \$6995.  
**MX300i** close coupled electronic processor, 2-channel, 3-

# KR ... perfect, wherever you are

Whether you use Celestions KR's for the gentlest, most subtle background music or for vibrant, energetic foreground, the results will be equally impressive. The bass drivers feature Flexirol™ surrounds, giving longer excursion and more powerful bass, but also longer life. Advanced horn design ensures high treble efficiency, clarity and controlled dispersion, making these new speakers easier to aim and position. The smooth yet incisive HF section of each new drive unit is protected by Polyswitch™ overload protection to minimise the risk of accidental damage. As well as being both attractive and durable, the KR Series moulded enclosures are lighter in weight and easier to handle than conventional wooden boxes. All of these exciting models are compatible with industry standard OmniMount™, as well as a range of custom designed hardware, for easy, safe installation.

Competitively priced from just \$399 a pair



KR1



KR2



KR4



KR8



KR10



KR SUB

The established 75 watt KR1 and 150 watt KR2 ultra compact bass reflex models are now joined in the full KR Series line-up by the compact, 150 watt KR4 for background reinforcement, and for higher sound levels the 175 watt KR8. Where full range high powered foreground reinforcement is needed the 200 watt KR10 is ideally suited. These are full-range 2-way passive systems which present easy amplifier load to make the most of the available power. To give the versatile KR4's even greater operating flexibility, there's a two channel sub-woofer system option too. The KR Sub special 10" bass driver is equipped with twin voice coils and so behaves electrically like two ordinary speakers, generating extra solid bass for those environments where you want the impact but need to keep things compact.



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# CELESTION

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# BUYER'S GUIDE

## loudspeakers & systems

Prices each, include sales tax, and were correct at 15th October. All care taken no responsibility for errors. Four models only shown in each category, all these manufacturers have many, many more. Indicative only.

way crossover with overload protection, phase compensation circuitry, asymmetrical filters and excellent front panel adjustments. 2-way version (MX200) available. \$5095.

**MX100** 2-way, 2-channel electronic subs. crossover with summed monaural or stereo output. Cards selectable for combinations of different EAW loudspeakers and subs.s. \$1995.

**JBL**  
*Jands Electronics Pty Ltd (02) 9582 0909*

**ASC24** Analog Speaker Controller, 2-way Stereo, 24dB per oct. Balanced XLR's, Limiters and CD horn EQ. 1RU. \$3995.

**DSC260** Digital System Controller 2 in, 6 out configuration with up to 30 bands of parametric or shelving Equalisation, 48 db/oct Crossovers, 600 ms of Delay, and limiters on all outputs. 20 bit conversion, 48kHz Sampling Rate. Comes pre-configured for a number of JBL models including AS3218, DMS-1 and Array, with 60 presets available. 1RU. \$4995.

**DSC280** Digital System Controller 2 Channel, 4-way Configuration with Equalisation, Crossover, Delay, and Phase Compensation Functions all in Digital Domain, 48kHz Sampling Rate. Comes pre-configured for a number of JBL models including AS3218, DMS-1, Array and HLA, with presets for user configurations. 2RU. Optional AES/EBU inputs and outputs available. \$10,995.

### KLARK TECHNIK

*EVI Audio (02) 9648 3455*  
**Model DN800** Configurable active crossover. The unit's four inputs and eight outputs can be configured as a stereo 4 way, stereo 3 way or a 4 channel 2 way system. Features include: phase reverse, phase adjust, level control, mute switch, limiter on, Limiter threshold. \$3,999.

**Model DN8000** Loudspeaker Processor features include phase adjust & reverse, separate compressor & limiter on each output. 32 user programmable memories, 60 factory preset memories, memory protection and user lockout with password function, voltage sensing power supply. \$7,399.

### MACH

*Audiology Pty Ltd (02) 9584 0033*

**M20.02** stereo 2-way, limiting, 24dB Linkwitz/Riley cross over, parametric EQ, amplifier sensing, 24 bit processing, 1 RU, 4.5kg. \$1999.

**M20.03** as above but stereo 3-way. \$2499.

**M2.02** stereo passive cross over for use with soft dome installation series cab.s. \$599.

### MARTIN AUDIO

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

**M1/M2** controller/equaliser for ICT300/ICT500 speaker system. M1 provides output for ICS300 Subs.. 1RU. \$495.

**EMX1A** system equaliser/limiter and sub output for EM series. 1RU. \$1295.

**WX3A** system equaliser/limiter/crossover providing 2-way active configuration for W3 system. 1RU. \$2450.

**MX5** system equaliser/limiter/

crossover providing 2-way stereo or 4-way mono configuration for LE700 or W8 systems. 1RU. \$2995.

### MERLIN

*EVI Audio (02) 9648 3455*

**ISP.100** Stand alone IRU digital signal procession system, window configurable, load with stereo input/output modules. Maximum configuration 4 in 6 out or 2 in 8 out performs crossover, EQ, gating limiting, compressing combining selecting delay and dithering function. Also fitted with 8 channel GPI port which is user configurable. \$4590.

### MEYER SOUND

*Richardson & Devine (07) 3252 4433*

**LD-1A** line distributor + crossover for self powered Meyer speaker encl.s. \$4500.

**VX-1** stereo, virtual 3-way crossover, programme equaliser. \$2850.

### PEAVEY

*Audio Telex Communications (02) 9647 1411*

**CEX4La** Totally programmable, all digital 4 way crossover which may be set up in various configurations. Also provides up to 650ms of built in pre-delay. Digital limiters on each output to prevent amp clipping. The CEX4La also has a choice of 3 equalisation types- CD horn EQ, single band parametric and bass and treble controls. 20 x 2 LCD display to indicate precise system adjustment. \$1876.

**CEX5** 2 in 4 out, four way crossover which may be set up in various configurations. Full 24 bit parallel DSP processing and 20 bit quantisation. 5 bands of parametric EQ on each input, each output has the choice of up to 3 EQ selections from All Pass, Parametric, CD horn and Hi/Lo Shelf. Linkable limiter on each output, delay on inputs and outputs, fully programmable, asymmetrical filters, three levels of security. \$TBA.

### RANE

*Jands Electronics (02) 9582 0909*

**RPM26** Dumb front panel Digital System Controller with 2 inputs, 6 outputs. Extremely flexible architecture allowing the device to act as anything from a stereo 3 way system controller with crossovers, delay, limiting/comp. and EQ to a 2 in 6 out distribution system with similar DSP functions. The unit holds 16 presets within the unit which can be fired from RS232 or contact closures. Utilises Renaware software for programming and/or control. 1RU. \$6495

### YAMAHA

*Yamaha Music Australia (03) 9693 5164*

**D2040** professional stereo channel (2 in/8 out) digital channel divider. Digital or analogue inputs, independent crossover filter, Q, comp, and digital delay, 15 memories, external remote controllable. \$6995.

**D1030** digital delay, 3 channel (1 in/3 out), independent parametric EQ/crossover and delays for time alignment, 15 memories, MIDI control, remote control. \$2095.

**C20A** professional system con-

troller, 3 channel, independent, filters parametric EQ/crossover and delays, 15 memories, MIDI control, balanced input/output. \$2195.

### CONTRACTING SPEAKER COMPONENTS AND/OR PARTS

#### ALTEC LANSING

*EVI Audio (02) 9648 3455*

**VI-15 System** Full range loudspeaker. Ground breaking advance in single box utility. Factory assembled system featuring a small-format Vari-Intense horn and a 15" direct radiator in a vented encl.. 1 inch exit titanium comp. driver, 15 inch cast frame woofer, 1,000 Watt peak, 250 watt long term. Weight 24 kg. Black or beige. \$1999. Also available in 12inch: \$1,849.

#### ARX

*ARX Systems '03) 9555 7859*

**Ambience-1** Ultra compact high impact resin installation speaker with truly stunning sound from a small package. Foam rolled surround 5" LF driver, and a soft dome æ" HF driver, and a 2nd Order 12 dB internal crossover. Available in 8 ohm or 100v line models.

**Ambience-5** Compact high impact resin installation speaker with truly stunning sound from a small package. Foam rolled surround 8" LF driver, and a soft dome æ" HF driver with a 2nd Order 12 dB internal crossover. Available in 8 ohm or 100v line models. Mounting hardware available for both Ambience models.

**MicroMAX** High performance installation speaker in a trap, MDF cab.. Pro Series 8" LF driver, and a soft dome æ" HF driver with a 3rd Order 18 dB internal crossover. Available in 8 ohm or 100v line models. Designed to use the MicroPRO system controller.

**MicroSUB** Super efficient Sub Bass speaker for LF enhancement of the MicroMAX system. Dual Pro Series 8" LF drivers in a bandpass MDF cab.. Designed to use the MicroPRO system controller.

#### CERWIN-VEGAL

*Ashton Admor (08) 9478 3800*

**PS-105 II** 10" 2-way high efficiency, 101dB sens., sound reinforcement speaker, tolex covered ply trap. cab., 14kg with six fly points and full steel grilles. \$1217.

**V 122 12"** 2-way high efficiency, 102dB sens. full range sound amplification speaker, tolex or carpet covered trap. cab., 16kg, pole mount, full steel grilles. \$1051.

**HED-270** HED amplifiers manufactured to compliment Cerwin-Vegal Speakers 270W/ch @ 8 ohms, 425W/ch @ 4 ohms and 2 ohms. Balanced inputs, mono bridge, ground lift. \$1693.

**HED-231 EQ** HED equalisers from Cerwin-Vegal 2 channel, 31 band, 1/3 octave graphic equaliser in 2RU. Also available in 2 channel 15 band 2/3 octave for \$651. \$1017.

#### ELECTRO-VOICE

*EVI Audio (02) 9648 3455*

**S40 & S40T** Ideal for Live or Studio applications. Independent PRO circuit protection protects woofer & tweeter. Low flux leakage magnetic design allows placement close to video moni-

tors. Available in black or white sold in pairs. Power Handling, Long Term/Short Term: 160 W/ 640 W. \$699.

**S60/S60T** Available in black or white includes a 6.5 inch direct ñ radiating woofer installed in an optimally vented encl. for extended bass. A one-inch tweeter with dispersion-controlling Director ensures uniform coverage. Power Handling, Long Term/Short Term: 100 W/400 W. \$629.

**S80** A two-way constant directivity system with high sens. and high power handling capacity in a small package. Power Handling, Long Term/Short Term: 100 W/400 W. \$739.

#### FENDER

*Fender Australia (02) 9666 5077*

**0715510 PCN 2** A powerful stereo 2-way, mono 3-way, 24dB per octave Linkwitz/Reilly rackmount electronic crossover. \$999.

**0715520 PCN 4** A powerful stereo 3-way, mono 4 or 5-way, 24dB per octave Linkwitz/Reilly rackmount electronic crossover. \$1,199.

#### JBL

*Jands Electronics (02) 9582 0909*

**P100 Series Loudspeakers** P100 Series house a 4" high compliance full range loudspeaker in a tuned ported steel encl. for consistent predictable performance for applications where hifi fidelity is critical. Flat Freq. response is from 100Hz-11kHz (+/- 3dB without equalisation) and dispersion is a nominal 100 degree conical pattern. Available in a choice of low (8 ohm) or high impedance (70.7V or 100V) versions. Call for more info. From \$240 ea.

**2100 Series Loudspeakers** The 2100 series is a range of co-axially mounted loudspeakers designed for engineered sound applications. Available in either 12 or 15" versions with a 1" pure titanium comp. driver or dome tweeter. Dispersion is a nominal 90 x 90 degrees, with power handling of 150W. Call for more info. From \$695 ea.

**2200 Series Loudspeakers** What most people know as THE JBL loudspeakers, the 2200 series is JBL's Professional Transducer Range. Technological advancements such as Vented Gap Cooling and edge wound aluminium voice coils give the 2200 series better power handling with reduced power comp. Models include the 2226 (15") and the 2206 (12") and the 2241 (18") with 600W power handling and the new super vented gap cooled 2242 (18") with 800W power handling. Call for more info. From \$695 ea.

**2400/2300 Series Comp. Drivers and Flares** Continuing the JBL tradition, 2400 series comp. drivers feature pure titanium diaphragms with diamond edge surrounds, new improved coherent wave phase plug design for reduced distortion and throat exits in 1", 1.5", 2" and 3" formats. 2300 Series horns feature constant directivity bi-radial topology with a large number of dispersion and size options. Call for more info. From \$775 ea.

#### KLIPSCH

*Horwood Australia (02) 9585 1011*

**C10T** 8" ceiling speaker; dual cone; 45Hz-19kHz; weight 283gms; 25W; with transformer; 70 and 100v line applications. \$52.

**CF883T** high compliance ceiling speaker; 8" with 3" high freq; 30W; weight 483gms; with transformer; 70 and 100v line applications. \$165.

**FA-116T** 6" high compliance ceiling speaker; full range 90Hz-20kHz; 25W; with transformer; 70 and 100v line applications. \$64.

**FA-136T** 6" high compliance ceiling speaker; Co-axial; 90Hz-20kHz; 50W; with transformer; 70 and 100v line applications. \$137.

#### MACH

*Audiology (02) 9584 0033*

**M42** 1 x 4" + ring dome tweeter, 50W RMS, 54Hz-20kHz, 87dB 1W/1m, 2kg, ABS case, mounting bracket points, black or white. \$399 pr.

**M62** 1 x 6.5" + ring dome tweeter, 80W RMS, 57Hz-20kHz, 90dB 1W/1m, 4kg, ABS case, mounting bracket points, black or white. \$599 pr.

**M68** 1 x 8" + ring dome tweeter, 120W RMS, 54Hz-20kHz, 94dB 1W/1m, 6.5kg, ABS case, mounting bracket points, black or white. \$999 pr.

**M1W62** flush mount ceiling or wall speakers, 1 x 6.5" + ring dome tweeter, 70W RMS, 80Hz-20kHz, 88dB 1W/1m, ABS case, white only, paintable. \$179 pr.

#### MARTIN AUDIO

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

**C115** surface mount speaker with 5" ICT (Inductively Coupled Transducer) driver in weather resistant encl.. 111dB peak SPL. Unblowable HF driver. Light grey/graphite. Swivel Bracket included, line transformer option. \$225.

**C516** flush mount speaker with 6.5" ICT (unblowable HF) driver including grille and back-can. 111dB peak SPL. 80Hz-20kHz. Line transformer option. \$245.

**ICT10** 5" ICT (unblowable HF) 2-way PA speaker in weatherproof polypropylene magnetically shielded encl.. White/black. Onmounnt fittings. \$225.

**EM15** 2 x 5" ICT (unblowable HF) 2-way trap. miniature PA speaker. 113dB peak SPL. White/black. Onmounnt fittings. Subs. option. \$397.50.

#### MEYER SOUND

*Richardson & Devine (07) 3252 4433*

**HM-1** full range 7" coaxial self powered speaker. 1000 dispersion, 48V DC power supply, 42Hz-20kHz, 116dB SPL max. options include Subs. and weather proof version. \$1800.

#### MISCO

*Audio Telex Communications (02) 9647 1411*

**JC80PA** 8" coaxial ceiling type loudspeaker for high quality distributed music and paging applications. Featuring a piezo tweeter coupled to the low freq. driver to eliminate phase distortion and produce an extended freq. response. 45Hz - 18kHz, 97db SPL 1W/1m, 30 watts, 100v line tx also available. Waterproof versions available, also 4" and various other sizes for other applications. \$74.

**PEAVEY**  
*Audio Telex Communications (02) 9647 1411*

**JE2500WRB** Weatherproof music column, 20 watts RMS, 100v line. 2 x 5.25" full range speakers. 200Hz - 16kHz freq. response, 98dB SPL. Suitable for paging or background music applications indoors or outdoors. Wall mounting swivel bracket also available. \$189.

**ATC5101M** 4" ceiling type dual cone full range speaker for paging, evacuation and background music applications. 15 watts @ 8 ohms. Comes with supervisory line capacitor to SAA specs for evacuation and a 5 watt 100v line transformer mounted on rear of magnet with various tapping's. 80Hz - 18kHz (± 5dB), 91dB SPL 1 watt at 1 metre, not half a metre! \$18.

#### PHONIC

*CMC Music (02) 9905 2511*

**Versatap 30** 30W (8 ohms), 70.7v taps 2.5, 5, 10, 16 watts. 4" Woofer/1" soft dome tweeter, indoor/outdoor, black or white finish. \$250 pr.

**Versatap 50** 50W (8 ohms), 70.7v taps 2.5, 5, 10, 20 watts. 6.5" polycarbon Woofer/1" soft dome tweeter, indoor/outdoor, black or white finish. \$399 pr.

#### SOUNDSPHERE

*Audio Telex Communications (02) 9647 1411*

**SoundSphere** 360 degree spherical hanging speakers with quality, hi-fi like sound reproduction. Ideal for difficult locations such as churches, sporting arena's, airport terminals, factories etc, especially where feedback may be a problem. Made in the USA and available in a variety of colours. From 35 watts up to 400 watts, subs. also available. Optional 100v line transformers also available. From \$494.

#### YAMAHA

*Yamaha Music Australia (03) 9693 5164*

**515** compact PA/monitor, 2-way speaker, 12cm Woofer + waveguide horn, 40W (noise), 88dB/watt, 65-40kHz, 3kg, trap. cab. free/angle/wall/ceiling mounting options, polyswitch protection. \$199.

**555** compact PA/monitor, 2-way speaker, 16cm Woofer + waveguide horn, 70W (noise), 90dB/watt, 60-40kHz, 6kg, trap. cab., many mounting options, polyswitch protection, full magnetic shielding.

Next month:  
HUGE recording equipment Buyer's guide!

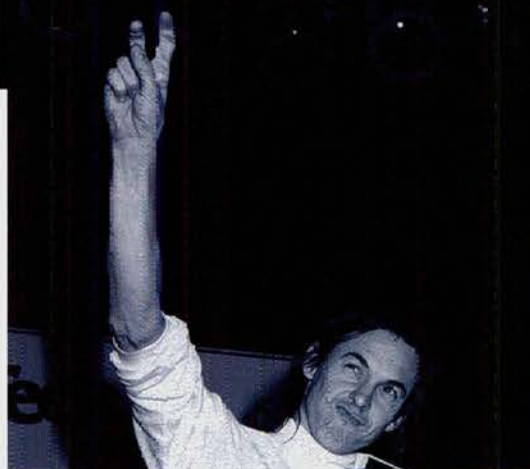
# ON TOUR

## Felix returns with his candid musing

**G**roupies - gorgeous chicks who come backstage, chat you up, buy you drinks, take you home, rub your sore back, then 'hubba, hubba' all night long. Yeah right. Maybe if you're Bon Jovi or Tom Jones or maybe Australian Crawls' roadcrew. But in my experience they're either trouble, time wasters or thieves.

The hipper the pop group the hipper the backstage crowd. Rarely there to see the gig but to be seen at the after gig party.

For most of us in the real world, groupies are just friends who 'dig the band' or someone who'd prefer talking to you about your music, your travels and experiences.



# GROUPIES

## The Good, the Bad & the Ugly

Born out of the pop explosion of the 1960's groupies or rather 'rock groupies' (Jesus probably had groupies), evolved from a new age of sexual freedom and the birth of the touring rock group led by such bands as The Beatles, The Stones, The Doors and of course Led Zeppelin.

What started as a few shy fans wanting to get that little bit closer to their heroes grew into a well organised, highly motivated and very determined class of people willing to do anything (anything?) to hop on the debauched circus of a rock'n'roll tour. Groupies became as an essential part of a tour as the gaff and a good lawyer. Many became as famous (or infamous) as the stars they hung out with. A band's status would be judged by the quantity and quality of the groupies travelling with them!

As the party couldn't last forever. For all the comfort and ego massaging groupies could offer, the down side was the trouble they could cause. Everything from breaking up a famous song writing team, to obsessive stalking, kiss and tell memoirs sold to sleaze magazines, paternity suits to just a bad dose of the clap. It was the end of free loving, easy going groupies of the 60's and 70's and the beginning of strict backstage passes, security guards, minders and paranoid egocentric rock stars. The new status symbol was how few people could get near you. The new groupies were mag journo's, other muso's, TV and film celebrities and the obligatory model or two.

That's cool. The best part about touring and travelling is meeting new people or as Spinal Tap bass player Derek Smalls puts it, "my special new friend". Finding out about their life, their town and if they would like to come to a party afterwards. Well, you've got to try.

I've met some weird and wonderful people on the road but for every nice one who just wants to chat about the band, share a laugh, a drink and a smoke (and gosh even a fun night together), there's one who comes backstage to tell you how shithouse the band was, drink the rider, steal anything not tied down, get drunk and make trouble. Or come on flirty all night before pointing out the fuming muscle man in the corner staring at you is her boyfriend.

I remember a gig in the charming little town of Ipswich in the backlands west of Brisbane. Two 'lovely' girls staggered into the dressing room speaking the local lingo - meaning every second word was either f\*\*\* or c\*\*\*. Along with the beers, we had a bottle of Jack Daniel's with the rider. I must have turned my back for a second when I noticed the Jack was missing. "Ummm, have you girls seen the Jack?" I asked politely. "Nah, we gotta go now" they replied. "No worries, I'll just have a quick look in your bag if that's OK" I said. Jesus Christ, they went ballistic! Yelling and screaming, throwing punches and scratching me as I tried to extricate the precious Jack. After regaining it and in no uncertain terms asking them to leave, they

were still yelling and abusing me like I was the criminal

Groupies don't have to be in the same room to cause trouble. On one of our tours to England our guitarist (whom I'll call Steve because that's his name) was seeing three girls. One night we were all sitting around drinking and talking whilst he was perched by the phone waiting for a call from one of his ladies. The phone rings and he grabs it. I hear a girl's voice say, "Hello Steven?". In his smoothest voice he replies "Hi, is that Carol?". "No" she replies. "Wendy?" "No." "Sue?" "No...." It was actually his girlfriend ringing from Australia!

Groupies of today. I don't know. It's hard for a cynical old bastard like me to imagine the sweet young things you see at gigs these days doing the things I've seen and read about. One thing that hasn't changed is how much it still gets my goat when one of those sweet, young things comes up to you and says "are you a roachie?" in that tone of voice that indicates they think you're a knuckle dragging sexual deviant whose job lies between the toilet cleaner and a box factory worker.

As usual I think to myself should I explain. I prefer sound engineer, that I built this PA, that I own my own business and I've probably seen more life in one week on the road than she's seen in a whole year of her bank job? Nah, why bother? That's right darling. I'm a roadie ..... wanna come to a party afterwards?

**H**uman Nature recently played the Perth Entertainment Centre as part of their first national tour as a headlining act. Yves Aucoin, the French-Canadian lighting designer on the tour was described by the local newspaper as creating "a light show to leave you breathless". Aucoin certainly knows how to work an audience and crafted the lighting to show off the four member group in such a way that he must take some responsibility for the hysteria of the mainly female teenage audience!



Photo: Bob King

# Human Nature

Eternal teenager Jacqueline Molloy speaks to lighting designer Yves Aucoin

Aucoin likes to analyse the audience and use a few tricks to enhance their enjoyment of the show; "there are certain things you can do with lighting to make the show look good and after that you play a game with the audience of teasing and charming. When I light for a young audience I always cheat the beams a little more into the crowd so that they feel more involved with the show. If the girls in the audience are lit they believe the performers can see them and it adds a charge to the chemistry". Judging by the number of girls in the audience who either fainted or screamed during the show the chemistry was running pretty hot.

Aucoin spends most of the year design-

**"If the girls in the audience are lit they believe the performers can see them and it adds a charge to the chemistry."**

ing and touring with *Celine Dion* and worked with *Human Nature* when they supported *Dion* on her last Australian tour. He was impressed by the group and interested in working with them again. "The way they handled the audience was quite amazing particularly since it was not their audience, they had an easy manner and a very cool style and they worked hard. It's very inspiring for me to work with acts like that."

The *Human Nature* tour played eight shows around the country over a couple of weeks and the

schedule didn't allow for a lot of programming time, "it's quite a busy show mainly because there are lots of little details and because I didn't have much time I initially programmed it so that at least the basics would be covered and then I created additional looks as the tour progressed". Aucoin usually likes to do longer tours because he believes that his designs are never really finished until at least the twentieth show. "I operate the shows myself because my designs are always evolving, I like to get familiar with the show and then make subtle changes as I go along. Sometimes it's just a question of a good cross fade or adjusting the timing slightly. Often it won't be anything that the audience will consciously notice but they feel it".

For the *Human Nature* tour Aucoin designed a rig that allowed flexibility and a multitude of stunning looks. He likes to go for depth and layers with light and prefers to use back light, top light and side light rather than front light. Though he also appreciates that an audience is paying to literally see the act and takes this into account. "I like to use powerful follow spots front of house and nothing else from that direction. The spots work hard on the four guys in the group allowing visibility and then I can have some fun with the rest of the rig". The rig consisted of a central pod and several arms of truss fanning out towards upstage. The pod was motorised

Yves Aucoin (wow, who'd be looking at the band!)



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# O N T O U R

to allow for height variability and to show off the VL 5s and VL 6s hung on it but Aucoin didn't work the look to death.

The rest of the rig consisted of more VL 5s and VL 6s, NSP Parcans, ACL's, Parcans with Colorset Series 2 scrollers, profiles and strobes. The stage setting was fairly simple and effective using risers with mesh on the front and a star cloth as the main components. The stage set-up was intentionally simple according to Aucoin. "Since it's their first tour they didn't want to go overboard and wanted a basic set-up that would look good. There are a few easy but basic tricks such as the mesh on the risers which help to make the set-up effective". Two smoke machines, 2 oil crackers and a mirror ball enhanced the many looks that Aucoin coaxed from his rig. He toured a WholeHog 2 control desk around the country which cut down on set-up time.

When it comes to gel colours Aucoin likes them saturated; which he believes is fairly standard for rock n roll. He often turns to fashion for inspiration on colour choice and is not averse to following the seasonal trends. "Fashion reflects what is currently trendy and I see no reason why colour in lighting shouldn't reflect what society is embracing, though I did draw the line this year when I saw that the chic

colours were to be a mixture of brown and beige. I couldn't really see them working for rock n roll!"

Aucoin was an early starter with lighting, already lighting shows at primary school by the age of 12. He continued through high school and it seemed a natural progression to begin working in the industry after finishing school. Rock'n'roll was not a conscious choice though he does find it more stimulating than theatre where he believes the lighting process is a bit drawn out compared to the instant gratification of rock'n'roll.

Apart from lighting *Celine Dion* which he has done for eight years, Aucoin regularly works with several other French-Canadian acts including comedians and singers. He has also designed for *Julie Iglesias* which he really enjoyed. "Julio is a complete professional, he knows what he wants and he works very hard to achieve it, he's also an excellent French speaker which was great for me!"

Yves Aucoin with Tim and Les from Concert and Corporate Productions



Like many people who spend a lot of time on the road touring Aucoin loves the work but finds the lifestyle can be a bit gruelling. Ideally he would like to design more and tour less and will see how he feels after the 2 year world tour he will embark on with *Dion* next July. For now there is plenty of variety waiting for him on his return home to Canada. Between now and Christmas there is a musical based on the life of *Elvis Presley* to light, a circus and several more comedy acts. To finish the year on a high note he will light *Celine Dion* at Caesar's Palace in Las Vegas on New Year's Eve.

## R O U G H R I D E R

I have a question for all you crazed technicians like me who are kept awake at night trying to decipher equipment lists instead of lying curled up under the doona transfixed by the latest Patricia Cornwall horror story. But instead you're trying to work out why a show would need 450 jumbo sized garbage bags and 1000 plastic ties. Very kinky indeed. Intrigued? I was.

I'd just been hired as a lighting tech on a production that was touring through and I had the job of sourcing the equipment that was to be hired locally. Everything was going fine until I got to the end of the list and the last item was 450 jumbo sized garbage bags - extra strength and 1000 plastic ties. I was a bit stumped by this one and decided to defer to a higher power; the tour manager!!! I got on the phone knowing that he's a busy man and I'm just a lowly tech and I quickly said my

piece. There was a slight pause and then he said, "of course its not a f\*\*\*\*\* mistake; its spring, what are we supposed to do?" And on that helpful note he hung up.

Now I'm not exactly the first cab off the rank in the brains department but I do okay and this one had me beat. I double checked the equipment list to see if I'd missed a clue but I could find no insight into the garbage bag mystery. I was scratching my head, as you do, planning to duck off to Coles and do the deed anyway, when one of the other techs popped his head around the corner and thrust a piece of paper at me saying "you'll probably need this".

I read the page and everything fell into place. Why was I the last tech in the place to know that it was an outdoor gig in an amphitheatre! How could I have been so thick? We all know what happens to outdoor gigs in spring; it

always rains. Even when the weatherman assures you with his radiant smile that spring is sprung and the weather will be glorious; it still rains!

What do we do to luminaires overnight in spring in an outdoor venue? We cover them with jumbo strength garbage bags and tie them snugly with plastic ties. Next day we go through an intense procedure worthy of neuro surgery as we remove the bags and ties, counting them to make sure we haven't left any plastic behind to cook on hot lights until well done. Nothing pisses an LD off faster than seeing melted bits of plastic garbage bags hanging off his beloved rig. Well perhaps only one other thing could really make him mad: and that's telling him that you've just run out of Congo Blue gel!

Rufus B.



# LIGHTING

November 1997

MONTHLY

Edited by Catriona Forcer

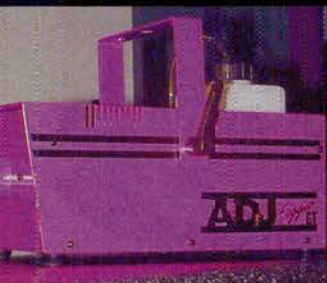
## LXbizzBITS

### PRODUCTS

#### ADJ FOGGER GT 700

Just released onto the Australian market, the ADJ Fogger GT 700 is a simple, entry level fogger which retails for just \$349.

A 700W quick warm up heater block provides 2500cuft/min.



The pump system keeps the fluid to the block constant and the machine is protected from overheating with two important forms of protection. The

first is a thermostat that disengages the heating element when the correct fog temperature is reached, and will cut off power in case of over heating. The second form of protection is a thermofuse device which is added on top of the heater block as a final means of a fail safe device. The machine has GS and CE approval. To complete the package you also get a remote control, an Australian type mains plug, a hanging bracket and a 1.5L fluid container. Call: Show Technology (02) 9898 1111.

#### VARYSCAN 5 MV 1200 HMI

JB Lighting have released the Varyscan 5 MV 1200 HMI moving light which has the following features: detachable moving head 360° for x movement; 1 colour wheel with 7 standard dichroic colours plus white; 1 gobo wheel with 4 rotating metal gobos; 1 gobo wheel with 4 rotating glass gobos; 1 gobo wheel with 4 fixed metal gobos; 1 effect wheel with 6 special effect filters; 1 wheel for zoom function; 4 rotating prisms; full colour mixing (CMY); variable focus; shutter with strobe effect; dimmer: 0-100%; fast, infinitely variable iris; DMX512; variable flood effect; and more. Contact U.L.A. (07) 5532 9922

#### SOURCE 4 LAMPS

GUVT are the authorised importer/distributor for the approved 240 volt Ushio lamp that is used in the ETC Source 4 range of luminaires. They currently carry good stocks of the 575w HPL 240v lamp. Call: GUVT Adelaide (08) 8340 1999.

# Lights in the Dark

## On location in the Megalong



Martin McGrath, DOP and Katrina Crook, focus puller.

In the *Winter Dark*, starring Brenda Blethyn, is being shot around Blackheath in the Blue Mountains. The script, from a Tim Winton novel must be good, because Blethyn was an Oscar nominee last year for her role in *Secrets and Lies* as the shrieking mom whose adopted daughter turns up out of nowhere. Miranda Otto, Richard Roxburgh, and Cate Blanchett are also in the film directed by James Bogle, and shot by Martin McGrath. It's cold,

it's drizzly, and it's outside.

The chilly day I visit the location on an isolated property in the Megalong valley, Blethyn is sitting in an old Land Rover keeping warm, an art department kangaroo carcass is tangled in a barb wire fence, and a sheep dog is running through the dry grass, while the crew fiddle with mics, cables, tracks and cameras for the afternoon's scenes.

*continued over*

# Lights in the Dark

continued from previous page

## The gaffer

Shaun Conway hasn't much to do today, because it's a overcast day, and no lighting fill is needed. "If we put lights in, it would start looking lit," he said. "There's no real reason, unless you're matching something that was shot in full sun. All DOPs and gaffers would love it if you could shoot in the first and last three hours of the day, but of course, you can't.

"It's been a good shoot. The weather's been quite good. As the title suggests, it's winter, and dark, a dark film. We've had night shoots every night up until this week. So there's been a lot of lighting big areas like paddocks.

"We did a setup at what they call the Stubbs' house, which is a big open field with a house at the top of the hill. We used a 30m cherry picker, and I've just recently bought a Leonetti Sunray 18K which we put up in the picker. That lit the whole field, and the house at the same time. That was the moonlight, and we kept it fairly hard. No diffusion on it at all. When it went through the trees, we had lots of dark areas, which suits the film. We warmed it up as well with a half 85, so it wasn't that typical big blue moon that you get on a lot of films.

Setting up the Leonetti Sunray 18K



"Then we supplemented that with a bit of soft bounce around camera, Gryflons, a couple of reflectors with 4K Pars into them, to give another edge back on the actors. That night, we had an interior car scene, where I used a Miniflo in the car under the dashboard. That was great, because you can go off the 12v supply while the car's driving around.

"The 18K was doing a great job, the spread I was getting out of the thing was fantastic. You could go anywhere and shoot, and the director is like that. He likes to run off and shoot something. We covered the whole area, which was just great. For night shoots, that 18K solves all the problems.

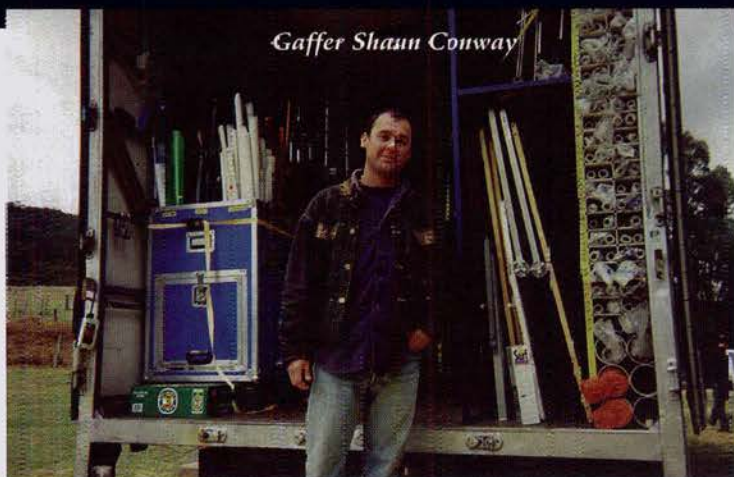
"We use the 18K on day shoots as well, back it way off and shine it through for day interiors. It's perfect, it's got the legs to get right through the house, giving good quality light.

"I like the Leonetti, because it's lightweight, 65kg, two guys can lift it. The budget didn't allow for a cherrypicker every night. Some nights, we had to build 12' towers, and lug the thing up there. It wouldn't have been as easy with some other lamps. It's lightweight, great spread, and it's all flickerfree. Everything in my truck is flicker free, which means we can overcrank the camera for dream or stunt sequences."

## A circular scene

For a dinner table scene, in a location house, McGrath wanted to be able to move the camera in a circle right around the table. With nowhere to hide the lights, Conway had to devise a way of lighting the actors at the table. "Everything's seen, which is always difficult. I hung Chinese lanterns over the top to the table. We also used them on our last film, *The Well*. It's an old idea, which has just come back. It's fantastic. I got a 500w, and we could move it to suit each shot to get a nice soft glow on the face. To supplement that, we put KinoFlo down underneath the table, to get an edge, or a bit of fill. It was mainly for the interiors that we used KinoFlo, which are great because you can hide them. It was one of those sets

Gaffer Shaun Conway



where you couldn't hide anything. We used a couple of 2K Fresnels through the window. We broke up the light with a frame we made up. Slashes of light came through, and hit certain parts of the house. It was an old dark location farmhouse. We tried to keep it dark, and moody. We didn't want to overlight. It locked good.

"Another scene was a night shoot outside Stubbs' house. Again we used the 18K as a three quarter backlight on the house, and inside we bounced some blondies off poly. Inside the kitchen, we had two reflectors with 4K Pars in them, coming back and lighting the front of the house. That was kept under exposec, so it didn't look like day light. It's really effective once it's pushed through the trees. We laid down sheets of poly, and a bit of fill for the actors, and put on a CMC sepia gel which we got in from the States.

"Martin and I tested gels on the makeup tests at the beginning of the shoot. I had a selection of gels, we put that one on, and it worked fantastically. We even use it in the day, it gives a warm quality to the skin tones."

## The DOP route

While we're standing around, Conway explains the lighting department. "You usually start off as a genry operator, which involves running the cables and looking after the generator. Then you move onto third electrics, lamp handler. The biggest step up is to best boy, the gaffer's right hand man, who basically runs all the guys, and tells them what to do."

"Does life stop at being a gaffer," I wondered.

"Well, you could fantasise about picking up a meter, and shooting your own stuff. But it's hard, once you get known as a gaffer. The big thing is the investment in gear. You can't just turn around, and decide to go buy a meter. You know what to do, or you think you do, because you've been lighting with these guys every day. And you often have the opportunity to light things yourself and even take the readings. It's tempting, but a lot of things stop you. But there's hope." ● **Madeleine Murray**

# GamFusion

Is it the most under rated product on the television lighting market today?

By Cat Forcer

GamFusion, manufactured by The Great American Market, is a logically sequentially-graded series of high temperature polyester diffusion materials. GamFusion ranges from 10-10 (barely perceptible) to 10-90, a dense diffusion that reduces beam intensity by 85%.

Rohan Thornton, Lighting Supervisor at GTV 9 in Melbourne, is a keen advocate of GamFusion.

"We at GTV 9 have been using the GamFusion range of products exclusively for our diffusion medium needs for nearly two years now," said Rohan. "Miller Professional Products introduced them to me and, after a two month trial period, we decided to use it."

## RANGE

"The product offers an easy to use incremental method of diffusion," explained Rohan. "It ranges from almost clear right through to almost cardboard. They are graded in percentage levels ie. GAM 10-10 is one of the most transparent, GAM 10-90 has the lowest transmission rate."

## ADVANTAGES

"In an industry where level and colour temperature is critical, the product allows the user to 'soften a lamp' while maintaining level," Rohan said. "If you put in a GAM 50, and the lamp is still a little bright, you can increase it to a GAM 55. It becomes a little softer and it is the right level."

"The product works extremely well with profile spots. You are able to take the traditional harshness out of the lamps, while still maintaining the ability to shape and shutter the beam. It is also quite a nice way of softening projected images in those profiles with dubious optics - GAM 30-50 is great for this."

## USE

"At the moment, we use GamFusion on every programme that is produced out of GTV 9 in Melbourne," said Rohan. "One off the wall use for GAM 10 is that it is the best substance we have found in my local Volunteer Fire Brigade to repair torn fire hose!"

## DURABILITY

"It is a little more expensive than other diffusion methods but it's durability seems to be better than other products," said Rohan. "It also comes in 600mm and 1200mm width rolls which is very handy. By all accounts in the testing we have done, it takes longer to 'brown out' due to extended use than other mediums."

"To be honest, I have not compared it to published specifications as traditionally they are only part of the promotional push. I am however extremely happy with the overall performance of the product."

## IMPROVEMENTS

"The only criticism I would offer is two fold," Rohan told me. "First, there is a need for an increment between GAM 60 and 70 as there is a large gap between these two levels. I have talked to representatives from both GAM and Miller who have promised it for over a year now but, to my knowledge, it has not materialised. Secondly, Millers do not keep a realistic stock.\* If you need extra rolls in an emergency, you may have to wait up to

<b>GamFusion 10-10</b>	Almost clear, hardly perceptible diffusion to even light beam and slightly soften edge. Full barndoor and shutter control. Spot intensity 92% (-1/8f stop). Flood intensity 85% (-1/4f stop).
<b>GamFusion 10-20</b>	Slightly diffused, smooths beam with minimal softening of edge. Shutters and barndoors still work well. Spot intensity 90% (-1/8f stop). Flood intensity 82% (-1/4f stop).
<b>GamFusion 10-30</b>	Ideal for use in followspots. Softens hard edges of the spotlight. Spot intensity 89% (-1/8f stop). Flood intensity 76% (-1/2f stop).
<b>GamFusion 10-40</b>	Softens the edge and smooths the beam. Light scatter apparent. Barndoor and shutter control affected. Spot intensity 88% (-1/4f stop). Flood intensity 64% (-1/2f stop).
<b>GamFusion 10-50</b>	Softens the beam, spreads the light. Clearly effects barndoors and shuttering of light. Spot intensity 85% (-1/4f stop). Flood intensity 45% (-1f stop).
<b>GamFusion 10-60</b>	Beam still apparent but edges very soft. Barndoor and shuttering effected with resulting soft light quality. Spot intensity 75% (-1/2f stop). Flood intensity 24% (-2f stop).
<b>GamFusion 10-70</b>	Beam is hardly perceptible. The light is very diffused and wide. Barndoor and shuttering dramatically effected. Spot intensity 52% (-1f stop). Flood intensity 7% (-5f stop).
<b>GamFusion 10-75</b>	Almost total elimination of beam, shuttering and barndoor edges. Spot intensity 28% (-2f stop). Flood intensity 3% (-5f stop).
<b>GamFusion 10-80</b>	Eliminates beam edges. Barndoor and shuttering are not apparent. The light is totally diffused. Spot intensity 20% (-2f stop). Flood intensity 2% (-6f stop).
<b>GamFusion 10-90</b>	Total diffusion. No apparent edges. Ideal for light boxes where camera or audience will look into the light source. Spot intensity 14% (-3f stop). Flood intensity 1.5% (-6f stop).

three weeks for Miller to import more."

## CONCLUSION

"I believe that GamFusion is one of the most useful yet under rated products that has been released on the television market in the past few years," Rohan stated. "It has certainly revolutionised the way we approach our basic lighting techniques."

*\*With over 200 colours including 11 grades of GamFusion and the increasing popularity of the product, Miller makes every effort to maintain an increased selection of GamColor gel stock.*

**Price:** \$170 for a full roll, \$88 for a junior roll.

**Manufacturer:** The Great American Market +1 213 461 0200  
**Australian Distributor:** Miller Professional Products (02) 9439 6377

**New Zealand Distributors:** Lighting Supply Company +64 9 939 9217; Spot Light Systems +64 9 378 8147.

**Hong Kong Distributors:** Engineering Impact +852 271 10222  
**Singapore Distributors:** Cine Equipment Pte Ltd +65 252 5089; Centrol P/L +65 473 7098; Transmarco H. Warta +65 296 0193.

# The Altman Stage Lighting Dynasty

*On a quest  
for quality*

**A**ltman is almost a generic name for stage lighting, certainly up there with Strand. While Strand is established longer and its name refers to a place in London, Altman the company is headed for 50 years in business and is the name of the family who own it.

I visit Altman Stage Lighting Company in Yonkers, just up the Hudson River from Manhattan and found a slice of American industrial ingenuity in a complex of buildings nestled on six riverside acres. The Palisades of New Jersey are a mile opposite, a wooded cliff frontage which stretches out of sight along the riverbank; a gift of undeveloped nature donated by John D. Rockefeller.

Robert Altman is the CEO, a youthful 44 with a genial manner and unassuming but knowledgeable demeanour. He is host to a business that is, by volume, the largest single manufacturer of stage and studio lighting fixtures in the world. The company makes 12 product lines, made up of about 200 different products, with 8,000 items in manufacturing inventory and employs over 140 people.

World famous, Altman has an astronomical number of luminaires - Par cans, Fresnels, Ellipsoidals, Strip Batts, Floods, lighting stands and so on. In one year alone they shipped 40,000 360Q's - the ellipsoidal (leko) everyone uses everywhere.

Recently, Altman purchased another factory adjacent to the plant, taking the site to seven buildings on nine acres. A full-scale refit is underway to bring the firm's manufacturing and business practices up to ISO 9000 standards.

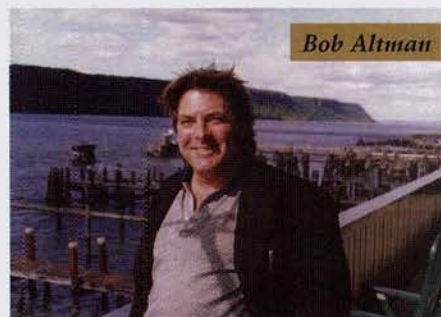
Through this, the endless lines of lekos, Fresnels, Par cans, lighting stands, clamps, followspots large and small lighting flows out of the Yonkers plant. Trucks deliver castings and raw metal in the morning, a line of trucks,

UPS, FedEx and common carriers haul away the orders in the afternoon.

When the company introduced their U.V. fixtures they set about changing the way they build things. Manufacturing engineer, Bruce

Johnson joined the company and re-organised the plant. Instead of Shakespeares being assembled on one long bench, he devised individual workstations. Assembly jigs and templates were designed, tasks analysed. The result wasn't just faster assembly but better assembly. Each line worker was cross-trained to do any job on the line. Quality improved out of sight.

Production doesn't run all the time for one product either, which makes life interesting. Hardly anywhere will you find a company who can make so many products in such an organised fashion. This requires that parts need to be fed to the workers in a timely manner, which could



Bob Altman

be a production managers nightmare. The Altman solution was to provide a network to link the 35 workstations to a custom-manufacturing program.

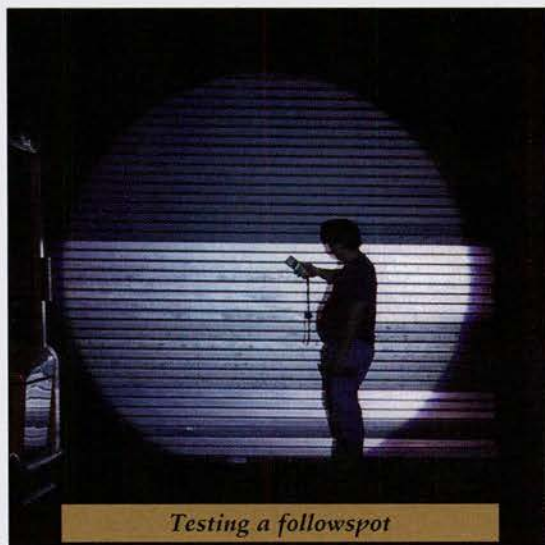
While Altman has always been a profitable business, the conversion from old style fabricators to a progressive manufacturing plant is recent and on going. An outside sales staff has been put into place, headed up by Robert Kliegl (reference: klieglight in your dictionary). Kliegl manages the factory sales staff and the expansive Altman Dealer Network in addition to projecting factory demand.

Still, Robert Altman estimates they would do 25% better if they could ship everything that is ordered. Even with their 40% increase in productivity, Altman's sales have increased by about 60%. So, the transformation continues. He is however, relaxed and informal, which is reflected in the people who work for him. Despite the relatively large size of the company, there are no suits and ties in evidence.

Altman has had his battles though, back in the late 1970's they were building another factory on the site when a union staged a walkout. Picketing the plant they stopped a critical delivery of concrete piles, almost 20m long - each weighing tonnes. The pile drivers were ready and willing, the delivery Teamsters not prepared to cross the line.

New product is the key to moving forward, along with doing things better. Lamp technology has been a motivating factor as is the ability to computer model what a lamp is actually doing in a reflector. This year, at LDI, Altman is showing a new Focusing Cyclight. It has a vertical adjustment so a strip of units can be ganged and aligned to shine higher up or lower down on a cyclorama while maintaining the same geographical placement overhead or from the floor, on stage or in the studio. The safety screen is an ultra fine mesh so the lamp efficiency is insured. Units click together with a captive

*continued on next page*



Testing a followspot



Bob Kliegl

# NEW MINISCAN HPE



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PROFESSIONAL SHOW LIGHTING

# Altman Dynasty

*continued from previous page*

cam and can follow along the infinity curve if desired. It's a neat unit

Most significant perhaps is a new architectural lantern, the Master Ellipse. This uses a new Philips lamp, the CDM, which is a 70w discharge lamp that virtually burns cold - for 10,000 hours. It produces a staggering 92 lumens per watt, compared to around 20 lumens per watt you might expect from a tungsten lamp.

Altman sees CDM technology eventually getting into stage and studio lighting, albeit with limited dimming capability, but for now it opens up a lot of extra architectural business, which is where they see solid growth. "Every guy builds a building wants to light it up, and when he does the next guy wants it, too," says Robert Altman.

Chasing better products means revisiting trusty old ones, too. The 350Qs have a new reflector, which increases light output by double or so, and it is available in a retrofit kit if you have any old Altman



Altstar controller

ellipsoidal 'lekos'. By the way, the name 'leko' actually belongs to Strand, even though we all call any axial ellipsoidal a 'leko' right? Altman got the reflector technology right by computer mapping what the lamp does in there. The result is a faceted reflector where the facets are unequal from top to sides

I see everything at Altman, even the secret stuff I can't talk about yet, which impresses me. This is one of those firms that are clearly gearing up for the next millennium. And because the love of lighting as an art flows through the veins of the people at Altman, it's their nature to push the envelope.

On my ride back to JFK airport with Bob Kliegl, I reflect that in one day I have learned a lot - and have had a glimpse of the future.

• Julius Grafton

*Altman Stage Lighting Company, Inc. is represented by Chameleon Professional Lighting Sales (02) 9310 5222.*



In the rental dept.

## LXbizzBITS

### NEWS

#### GUVT ADELAIDE PROJECTS

GUVT Adelaide recently supplied 240-way lighting patch panel system for a project in Thailand. They also supplied a quantity of **Source 4** luminaires to AFCT, upgraded the Arts Centre with an **ETC Express 125** and supplied **DDX Units** to the Whyalla Cultural Centre. They designed and constructed a Time Tunnel effect 15mtrs long for the Darling Harbour Trade stand. The Tunnel had over 1700 lamps running of a custom designed computer, DMX matrix memory system, Interchasing in a 8 x 24-way matrix enabling full spiral wipes and spins in both x and y co-ordinates in 192 configurable combinations. This was the main entrance to their stand as a walk through tunnel for all to see. Included was a computer controlled 24" Fibre Optic Star Curtain on display.

#### JESUS CHRIST SUPERSTAR

Production is underway for the show **Jesus Christ Superstar** at the Hills Centre, Castle Hill. Featuring a full star cast including Angry Anderson and Mark Williams, the production will also showcase some of the latest Martin products to arrive in Australia - such as the **MAC500**, **MAC600**, **MAC1200**, **Martin Lighting Director**, and **Case Pro 1 Controller**. The production is running for two weeks - from Friday 31st October until Saturday 15th November.

#### HELL'S SOFTCUE

Howard Eaton Lighting Ltd (HELL) have supplied the Kalong Theatre, Singapore, with **SoftCUE** - the memory cue light which brings the technology of lighting and sound systems to the theatre's prompt corner. Whilst the system can be used in conventional 'manual' mode using **STANDBY** and **GO** switches, **SoftCUE** has the unique advantage of being a memory system with total recording, playback and fault reporting facilities.

Details: Howard Eaton Lighting +44 1273 400670.

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**Le Maitre**



**W**hich is the right fresnel for your application? Let's go back to basics and decide exactly what we want the luminaire to do, before attempting any decision. What are fresnels good at doing, and why? The range of answers to this question might surprise you: television LDs<sup>1</sup> seem to believe that you can do almost anything with the right fresnel, film DOPs<sup>2</sup> use them for some applications, the on-stage bars of theatres and opera houses are loaded with them, yet they're almost totally absent from concert rigs. The fresnel spot's greatest strength is its unique versatility in offering a wide range of beam angles and a choice of beam edges.

do a better job, either in light output, beam edge, size, price or whatever, but you won't find a single type of luminaire that will do as many jobs so well. That said, there are great distinctions between the performance of the various fresnels out there for sale; many cover the same range of beam angles but a 650 watt minifresnel is rarely directly interchangeable with a 20 kilowatt location unit and some fresnels really do perform better than others when it comes to tightly defined beams or sharp cutoffs. Beam distribution graphs, as supplied on many luminaire specification sheets, will provide a good indication as to the presence or otherwise of a "hot spot" in the beam and, with a bit of careful interpreta-

# Getting the **FRESNEL** you deserve

The fresnel lens is a spin-off from the work of physicist Augustin Jean Fresnel (he was French, hence the silent *s*) who was actually developing lighthouse optics in the early nineteenth century. It was designed to reduce the thickness and weight of short focal length lenses by cutting away the middle of the lens, but retaining the surfaces that are responsible for refracting the light. Unfortunately some light leaks out of the steps in the lens, rendering it less than ideal for a sharply focused beam but extremely useful for soft-edged pools and seamless blending of adjacent beams. (A good rule of thumb with fresnel lenses is: the more steps in the lens, the softer the beam edge.) It is the short focal length of the fresnel lens that gives the fresnel spot its wide range of beam angles in a compact space. The longer focal lengths of the lenses in the hard-edged PC spots require a luminaire up to 50% longer in order to achieve a comparable range of beam angles.

Consider just what you want the beam from your fresnel spot to do: soft edged tight pools? wide area washes? big hard backlights? area specials? low side light? set dressings? sunlight through windows? slashes on drapes? et cetera, et cetera. For any one of these jobs you could find a luminaire other than a fresnel that could

tion, the softness of the beam edge.

One of the great fallacies of the lighting industry is that there is an optional accessory for fresnel spots called barndoors. To put it bluntly **barndoors are not an accessory**, no more so than a lamp is an accessory. You are doing yourself, your venue and all LDs who use your luminaires no favours if you buy more fresnels than barndoors. Particularly be careful of the assurance from your supplier that you can always buy more barndoors later when you have the money, if it turns out you really need them. You do really need them - now; besides bitter experience teaches that you just bought the last of that model of fresnel ever made, and "no, there aren't any spare barndoors", or, "sorry we just sold the last ones" to another buyer who didn't get the full complement of barndoors with their initial purchase.

The design of the barndoors should be at least as important a factor in selecting your fresnel as any other. Good barndoors rotate easily without catching on colour frames, colour frame runners, knobs etc. They close down into useful shapes and sizes of beams, don't leak light from their sides or edges, are safely and securely attached to the luminaire and can be adjusted in the knowledge that the doors

*continued over*

## LXbizzBITS

### PRODUCTS

#### STARGAZER

LyteQuest Pro has introduced its new StarGazer lighting effect which uses 48 coloured lenses to create a sound-activated 240 multi-coloured beam effect. Enquires to: Gemini Sound Products 0011 1732 802 6004.



#### MARTIN STOCKS ARRIVE

Show Technology have taken stock of a heap of new Martin products including the **Martin Case Pro I Console**. Designed as a touring desk, the Martin Pro I Case guarantees overview and direct access to all functions - even multibrand applications containing both conventional and intelligent lighting. A lighting designer can see the fixture set up graphically on screen for easy identification. And, its automated programming and colour library for CMY fixtures means total control and ease of programming in minimum time. Retail price is \$16,999 inc. tax.

Also new is the Martin MAC Dome which has been created to reflect the wide variety of potential applications for the MAC500, MAC600 and MAC1200 making applications for this range of moving lights limitless. It allows MAC luminaires to be used outdoors in a protected environment. Retailing at \$3,099, to house MAC500 and MAC600.

Just landed in Australia are new Martin product guides. Martin have put together a 72 page full colour booklet on the latest products being released world-wide.

For more information, call Show Technology on (02) 9898 1111.

#### STAGE SAFETY

The Stage Safety range of HEADS! Cable Guards is becoming increasingly popular in Australia. Designed and manufactured in Australia for Australian needs, the Drop-over Guard has sold well in its first month of release with the custom colour option proving popular.

The Guard-5 will be in production at the end of November and next on the agenda will be 45° corner pieces and End-caps for the Drop-over Guard. The design of the corner pieces will allow them to be used for left and right hand corners. Contact Stage Safety on (02) 9327 1989 or 0414 406 052.

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## Getting the FRESNEL you deserve *continued*

will stay in place. Which brings us to the matter of blackwrap, a topic worthy of an article to itself. Marketed by Lee as "Black Foil" and Rosco as "Cinefoil", blackwrap is a heavy-duty, matte-black aluminium foil, sold in roll dispensers similar to those for cooking foil. It is indispensable in stopping the light leaks from badly designed barndoors, adding a fifth barndoor for that difficult cut-off when focusing, or in flagging a flare out of a camera lens. It is indefinitely reusable and flutters gracefully to the floor in the middle of a show if not properly attached. There are no reports available on its value as a cooking aid.

If all fresnel spots have similar beam angles, then the area which can be covered by a fresnel isn't the major factor in choosing the right fresnel, we become much more concerned with light intensity. While a 500watt Minuette and a 10kw Vega may both be capable of a fifty degree beam angle, it isn't such a tough decision to take as to which one may make a good backlight in a moonlit scene for a mainstage opera and which one may be better suited to a splash of light on an unoccupied chair in an intimate box set. This still doesn't explain why are there so many different models of fresnel spot. Just look at the selection of 1kw / 1,200w fresnels currently on the market: they show a wide variation in size, weight, light output, robustness, ease of use, and of course, price. The fresnel spot, in common with virtually every piece of technology we use, is the result of a series of trade-offs between conflicting goals. An

obvious trade-off is the one between durability, weight and price. A durable luminaire will generally be heavier if made from commonly available materials, or more expensive if made from less readily available low-weight, high-strength materials.

The beamspread of fresnels is varied by moving the reflector and lamp with respect to the lens and there are several different approaches to achieving this. The simplest design, found in most low cost fresnels, is to have a lamp tray with reflector attached that simply slides back and forth with a knob which is tightened to stop the sliding. If the lamp tray slides too easily when the locking knob is released, the lamp tray will go careering in the direction that gravity wants to take it, which would be fine if the tray didn't come to a sudden stop at the end of its travel, which would also be all right if the lamp didn't happen to be on most times when you are focusing; but that's soon remedied as the hot filament disintegrates from the impact. It's surprising how few lamps you have to blow to make up the cost difference between a fresnel with a nasty focusing mechanism and one with a smooth reliable system. Several manufacturers have developed variations of this simple mechanism with spring-loaded plates under the lamp tray to slow down the movement and non-stick pads to prevent it from seizing completely. Many fresnels use a lead-screw system to drive the lamp tray back and forth which is generally satisfactory, although some older versions require con-

## LXbizzBITS

### PRODUCTS

#### CONFETTI BLASTER

TubeWORKS have unveiled the ConfettiBlaster, a high powered automated confetti system which provides an instantaneous and continuous stream of confetti. The duration of the blast is limited only by the amount of confetti placed into the reservoir. Until now, confetti had to be shot out of a low capacity air cannon, which had to be reloaded after a one second blast. It can operate on the ground, on an elevated surface, mounted to lighting truss or attached to overhead areas. There is a 1.5 gallon reservoir, however, peripheral attachments are available which allow up to a 55 gallon capacity. Many units can be linked together for large scale events. Other low density products can be shot including theatrical snow. Enquires to: TubeWORKS 0011 1 818 879 2386 (dealer enquires welcome).



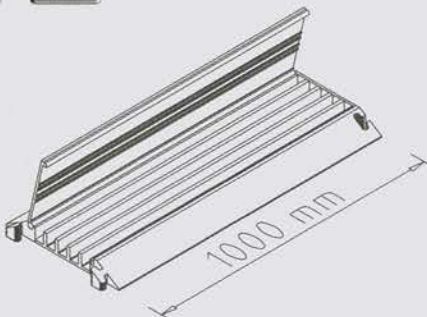
#### JEM TECHNO-FOG

Show Technology now stock the Techno-Fog which has a fluid capacity of 1 litre and houses a Direct Thermal Protection device to prevent overheating and comes with a compact hand-held remote. The Techno-Fog has a new code, JEMFOG103 and it will replace the Showfogger so be aware to amend any orders or quotes. Retail price is \$649 inc. tax. Call: Show Technology (02) 9898 1111.

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## Getting the FRESNEL you deserve *continued*

stant care and attention to the lubrication on the screw thread. Some manufacturers have used a pulley and wire rope system with great success, although over-enthusiastic lubrication of this mechanism can completely remove the friction they rely on to keep the lamp tray in place, thereby transforming them into a variation of the slide and shatter systems previously mentioned. One of the more interesting mechanisms is that found in some older Mole Richardson "Junior" (2kw) and "Senior" (5kw) film and television fresnels, which have an arrangement of arms and universal joints which move the lamp tray along a set of rails. A fine mechanism when it works, but a real pain to maintain.

The desire to fit more luminaires into a given space, lift and store them more easily and use the minimum quantity of materials to build them from, has pushed the size of fresnels down drastically over the last few decades, but it has also pushed their skin-temperature up. All one kilowatt fresnels have to get rid of the same amount of heat, which means that smaller bodied luminaires have more heat passing through each square millimetre of their surface and are not only going to be hotter to touch, but will reach their running temperature sooner after being powered up. The so-called "mini" and "baby" fresnels either have to be focused more rapidly than their larger brethren or provided with adequately insulated knobs and handles to allow for the higher temperatures. A few early mini fresnels had well insulated

handles, but the focus crew burned their knuckles anyway, as there was insufficient clearance between the handle and the luminaire body to fit your fingers when focusing.

The other problem with smaller sized fresnels is smaller diameter lenses. Smaller lenses tend to have fewer steps and therefore harder edged beams which are more difficult to blend but that's not the worst problem with small lenses, it's gel life. As an example: a luminaire with a 150mm diameter lens will often be used where a 200mm diameter lens would have been used in the less compact model. The ratio of lens areas is 1.77 to 1, meaning that each square millimetre of colour filter on the 150mm diameter lens model will be subjected to 1.77 times as much heat and light energy as on the 200mm lens model. Perhaps this helps to explain why you're burning through so much Congo Blue in those backlights. Maybe those baby 2ks weren't such a bargain after all.

Getting the fresnel you deserve, as with any purchasing decision, relies on striking a balance between, performance, robustness, purchase price, maintenance and running costs, ease of use and the various inducements offered to you by your luminaire salesman. (Whatever else you may think, those really cool electric blue chamois jocks emblazoned with "Boris Lighting Inc" don't make up for all the extra hours spent cutting replacement gels or pop-rieveting the leaves back on to the barndoors.) And remember, if a company

## LXbizzBITS

### NEWS

#### LSC KEEPING BUSY

LSC Electronics have supplied **Production Works** in Hobart an **Avalites Diamond 3** console. Tony Miller, Production Works General Manager, said that he is more than pleased with the latest addition to their inventory, and that this is the level of equipment that he is purchasing to meet the needs of international touring acts. He also said the console is available for sub hires.

Both the **Universal Theatre** in Melbourne and the **George Wood Performing Arts Centre** have purchased **Axiom 48s**. LSC has recently finished a complete stage lighting fit out at **Ormond College** including dimmers and bars. **Stage One Promotions** has just purchased **12 Tour Series** dimmers for the Myers and David Jones window displays.

really believes that their luminaires are worth owning they will be anxious to lend you one or two to try out under your production conditions.

• **Andy Ciddor**

*LD - Lighting Director or Lighting Designer (this abbreviation is the safe one to choose if you aren't really sure of a person's official job title)*

*2 DP - Director of Photography (to further confuse the issue the abbreviation DP is also used)*

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# JEM Hydrosonic 2000 Smoke Machine

By Cat Forcer

Last year the purchase of JEM Smoke Machines by Danish lighting giants Martin Professional resulted in the Hydrosonic 2000 smoke machine being launched. The machines are produced in Denmark.

The Hydrosonic 2000 incorporates 'HOT Technology' which is achieved by producing large quantities of minute airborne water based particles. The machine then pulses these, with precision via in-built transducers, to create cavitation of the fluid as small bubbles are formed on the surface. These bubbles burst and the resulting matter is blown from the machine.

The JEM Hydrosonic 2000 uses this unique technology, and creates its effect without the need of heat, temperature controls, jets, nozzles or compressed air.

AVLA (Audio Visual Lighting Australia) are a Perth based company specialising in sales and hire of audio, visual and lighting equipment. Company Principle, Gino Lombardi, talks about the JEM Hydrosonic 2000 smoke machine.

## USE PURCHASED FOR

"We've purchased three so far - two for our hire department and one for a nightclub installation," said Gino. "Our hire department uses them mainly on corporate events where big clouds of white smoke aren't wanted. To get the definition of the light beam a haze type machine is best particularly for the corporate/presentation type of work. The nightclub caters for a more mature age group and that's why a Hydrosonic 2000 was used - people see clouds of smoke and perceive all sorts of things."

## FLUID

"It uses its own JEM Hydrosonic Fluid," Gino told me. "It's a water based machine so there's no residue and it's a lot healthier. It does consume a lot of fluid, probably more fluid than a standard smoke machine but I think at the end of the day, it earns you more money because of the kind of jobs it goes into. It's not a drive away hire unit."

"As there is no residue, it doesn't effect other equipment. The machine runs cold, you can put your hand in front of the unit and the haze is cold."

"Wholesale, the fluid costs \$45-\$50 for a 10 litre container. I think that cost should come down, the wholesalers are working on that hoping to get it down a couple of dollars in the next year or so. At the moment it's all being imported and they're looking at local manufacture. Basically they're importing container loads of water! We've got perfectly good water in Australia and if they can manufacture it under licence, it'll bring the price down. It would make the unit more appealing to the sales side of the market. At the moment production companies are buying them but there are not a lot of them going into direct sales



Gino Lombardi

eg. theatres. A theatre here in Perth was interested but the cost of the fluid put them off."

The machine has a fluid capacity of 9.5L. Show Technology did not have the authority to reveal the composition of the fluid, claiming that JEM keep this information confidential, although they did say that it was 95% water and 5% different mixtures of glycol.

## WARM UP TIME

"That's the beauty of this machine, it's instant start - you're not waiting for heating elements," said Gino.

## NOISE

"It's got a pump in the background and it's probably slightly louder than a smoke machine," said Gino. "It does make noise, but what is loud and what is quiet? I think it's certainly suitable for theatre but I'd question television use."

The JEM Hydrosonic 2000 has a built-in fan to guarantee the optimum dispersion of effect.

## OUTPUT

"The haze is good" stated Gino. "The machine is continuous so the haze keeps going. It can fill quite a large room and stay there all night long. We've filled a 40m x 35m size room with a 5m high ceiling quite easily."

The machine will remain on station indefinitely, subject to fluid capacity.

## CONTROL FEATURES

"We're basically using the features off the unit itself but it's DMX compatible," Gino said. "It has total control over the unit - flow, time, density - and it's quite good."

The JEM Hydrosonic 2000's control panel features: Timer; Output Level Control; Fluid Control; Machine Status; and DMX Address settings. The Display Type is 4 Digit, 7 Segment LED.

Side view



continued over

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# JEM Hydrosonic 2000 Smoke Machine

continued from page 78

## IMPROVEMENTS

"There's no remote, it's all built on to the unit", said Gino. "You will not need a remote if you're running it from a desk but in some instances a control desk is not available and a hand held controller would be useful.

"I would also suggest that the unit could have some better wheels on it. It's quite a large unit, physically not that heavy, but cumbersome to lift it - you need two people. Some rubberised wheels that move better on the floor than the wheels it's already got would help. Maybe some handles off to the side, rather than the top, would be good too.

"Being a large unit, a factory built roadcase would be appealing. It's an expensive unit and you need to protect it. Scars go in a roadcase, why don't smoke machines? You can get them built locally but factory built would be the way to go."

## MAINTENANCE

"I think the most important thing as there are no heaters and build up as such, is keeping them clean and emptying the tank when transporting them," said Gino. "It's got quite a large tank because it's got a pump in it, so you've got to make sure that you empty it out of the actual chamber and put it into it's container.

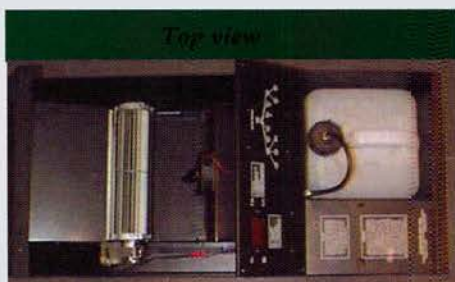
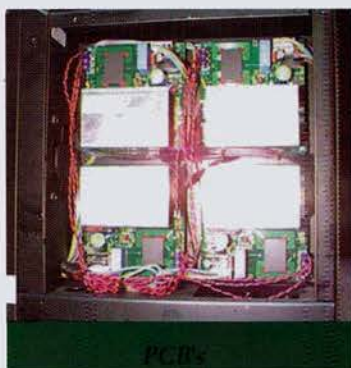
"It's almost maintenance free. Like most electronics you have to keep it dust and grime free but it's virtually a sealed unit."

The JEM Hydrosonic 2000 has an Atomiser Tank Evacuation System which allows the Atomiser Tank to be emptied into the bottle before transportation.

## FINAL COMMENT

"It's a great unit and we've been happy with it," said Gino. "I'm sure over the next year or two, we'll buy some more for our production company."

**Size:** Length 875mm; Height with wheels 475mm; Height without wheels 415mm; Width 405mm; Weight approx 32Kg.



**Power Supply:** 220V to 240V AC 50Hz, 400W

**Price:** \$4097.55

**Manufacturer:** JEM Smoke Machine Co. Ltd +44 790 54050

**Good People to Know:** AVLA (08) 9227 1399

**Australian Distributor:** Show Technology (02) 9898 1111

**NZ Distributor:** Show Technology (02) 9898 1111

**Hong Kong Distributor:** Laser Theatre + Lighting +852 279 79803

**Singapore Distributor:** Martin Professional Pte +65 842 3031

# LXbizzBITS

## NEWS

### WHAT'S NEW AT CLS CLS NEWS

**Sexpo** came to Melbourne recently exhibiting various aids (some seen to be believed) to assist in the spicing up and educating of the public, bare skin and thousands of men thundering through Jeff's Shed on their unchbreak. CLS crew provided a ground support truss system for the main stage - a real eye opener.

Working with Melbourne's Photomation, Garion Hall of CLS designed, installed and operated the **Victorian Training Awards** ceremony held at the Melbourne Park Function Centre. Gear included 12 Color Ranger scrollers, 20 x 650w profiles, 20 x 650w fresnels and a dozen 1.2K fresnels. Three 12ch dimmer racks and a Jands Event+ 48/96 took care of control. A complicated multi-image slide show complemented subtle lighting effects against stretched lycra light boxes.

A four-piece rap band called **K-Ci Jo Jo** arrived in Melbourne for a one off gig at the Festival Hall. Production was by Troy Balance (final gig) with LD's Leigh Greig and Matt Hansen of CLS and lighting operator Sam Hopkins. Gear included: 6 chain motors; 4 Cyberlights; 12 Intellabeams; 6 Data Flash; 100 par cans; 6 Thomas groundrows; 2 nine lights; 120 dimmers; 8 Mole faye duets; 1 x 48 x 30ft cyclorama; 1 Jands Hog; 1 Event Plus 46/98 desk; 2 Lycian short throw followspots; 1 F-100 and 1 DF50 smoke machine.



# Wild Gravity

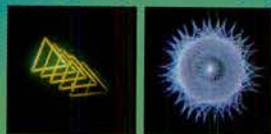


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 Address: Units 3-4, Kingston Industrial Estate, 81-86 Glover Street,  
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MH-180 Earthquake



MH-120 Hypermoon



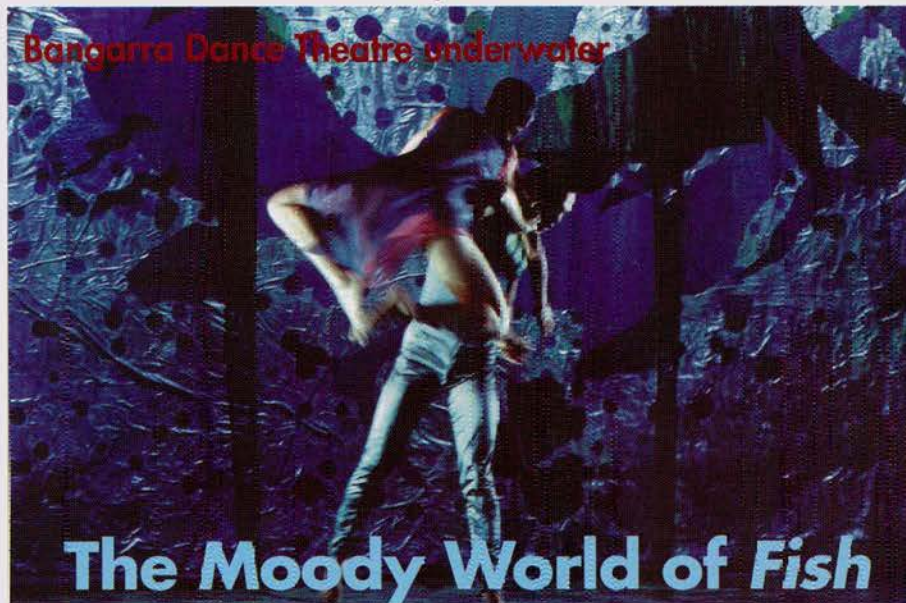
MH-260 Ninja



Write in Reader Service Number: 179

# Festival of the Dreaming

Madeleine Murray takes a look at two of the Festival highlights



Photos: Greg Barrett

The first dance, *Swamp*, opens with strong horizontal shafts of blue and green lights sprayed across huts of upright reeds. The stage has no beginning or end, it is a evocative, evanescent world of slatted light. Forms appear, and disappear, like fish underwater. The next dance, *Traps*, features a red and black backdrop, a visceral form which changes shape dramatically with the lighting. The last piece, *Reef*, is a dappled depth of colours using Monet tones of purples, blues, and greens. *Fish*, designed by Peter England, and lit by Joseph Mercurio, is a brilliant collaboration. The result is a mesmerizing, elusive orgy of splendid colours, haunting space, and eerie images.

The whole thing is driven deep into the psyche by the Bangarra dancers, and David Page's haunting, compelling music.

## Swamp

"I was going for a mystical dark look," Mercurio said. "I wanted people coming from nowhere. The reed houses didn't take a lot of light well, so they needed to be kept quite mystical and dreamlike. There are five lights on each sidelight stand. Two or three of these lights were just there to paint the air with that swampy green light, that was sitting above everything."

"Some people thought it was too dark. I wanted to keep it low, and mysterious, people materialising from nowhere. I've always loved not being able to see everything. What's the point in being able to see everything?"

The main source of light was the sidelight. There were five sidelight positions, and each had five 1.2K Selecon Profiles on

it. The other main key source was overhead 743s in a deep blue. At one point, each dancer in the reed house is dramatically lit from below by a light at their feet.

"It's actually a really simple rig," Mercurio said. "The only hard bit was the amount of colour, and getting the colours to blend and work together."

## Traps

The powerful, mysterious backcloth, called the wound, keeps changing under your eyes. At one point, the centre is translucent, and shadows move behind it. Other times it seems to be squirming, and thrusting out onto the stage.

"The lighting in *Traps* is quite a lot brighter, with a more general, washy feeling," Mercurio said. "The backdrop was the main area for me. We staggered it. At first it was just a drop, then you saw the cut, and the long fade at the end resolved it, as if the wound has been healed."

Mercurio used two 2K fresnels, and a bank of Codos as front lighting. From behind, he had one 2K fresnel. "I did a trick with the cloth. I used the reflective cloth from *Reef*, and I was pumping a lot of light into that, and it bounced back. It gave it a very soft quality, because it was all reflected light."

## Reef

*Reef* was as magical as the other two dances. Leaf shapes and foliage seemed to appear on the stage, then vanish, without any physical movement of shapes. "The

*continued on page 86*

## Edge of the Sacred

### Lighting musicians and dance

*Edge of the Sacred* was an ambitious project combining the Sydney Symphony Orchestra, on stage with dancers from the Aboriginal Islander Dance Theatre. The orchestra was divided into sections according to the elements, earth (brass), air (woodwinds), fire (percussion), and water (strings). The dancers moved around on two long, narrow strips, and two ramps connecting them.

LD Pascal Baxter's job was to light all these elements. He had to be colourful, bold, and light the dancers. But he also had to light the entire orchestra and stage, without disturbing the musicians, who still had to read their sheet music. "I'd never lit an orchestra before," Baxter said. "Derek Coutts, the LD for the SSC, helped me to sell the orchestra on a lot of things that were disturbing for them. I've got a lot of pinspots on the double basses, violas, and



cellos, to outline their sensual forms. At first, some of the players didn't like that."

Phil Dunesky, a lighting coordinator for the Opera House, explained that, "Orchestras are used to short focuses, where they come in from each side. The lights

*continued on page 86*

# Has your scanner all the functions\* of a Galileo IV, plus electronic ballast and weighs just 30kilos?

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LIGHT TECHNOLOGY

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ANNIVERSARY



Pilot 1600 is a universal controller; it can be used with the Galileos or any other unit requiring DMX512 standard

The lavish \$12 million production of *The Wizard of Oz* is the latest creation from Kenneth Feld, one of the world's foremost producers of live family entertainment. Touring Australia for nearly three months, the show has already been on the road for three years.

Kenneth Feld is quoted as saying, "when the movie was designed in the 1930s it was high-tech, so what we've done is retain all the things you love and cherish but set it visually in a high-tech setting for the 90s using cutting edge technology for the staging, lighting and special effects".



# The Wizard of Oz in Oz

The latest Kenneth Feld Ice Spectacular arrives

To achieve this, Feld brought together a top international creative team: British Production Designer, Mark Fisher (The Rolling Stone's Voodoo Lounge Stadium World Tour, R.E.M.'s Monster Tour, U2's Zoo TV Tour), Lighting Designer, LeRoy Bennett (Prince's, The Cure's LD), American Director, Jerry Bilk (Creative Director of Walt Disney's World of Ice), Costume Designer Frank Krenz and Choreographer Robin Cousins.

Mark Fisher developed a bi-level, 3D set complete with movable ramps and bridges and a bowed-out proscenium specially designed for the best sight-lines possible. Dorothy's house is motorised so that the tornado does indeed whip it up into the air; the Wicked Witch of the West and the winged monkeys do fly; while the Wicked Witch's castle and the Wizard's 25ft high

throne travel onto the ice through a specially designed drawbridge.

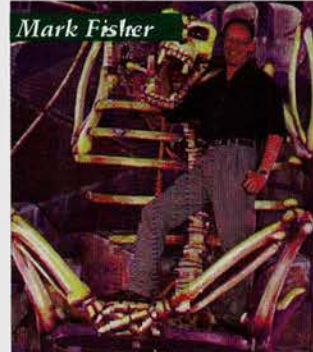
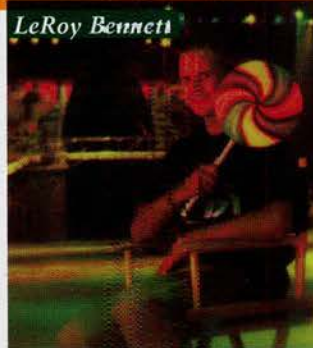
Lighting designer LeRoy Bennett, renowned for his work on major rock concerts, said: "Being white, the surface of the ice is a wonderful blank screen on which to project lighting effects." The yellow brick road, for example, is created by gobos as are 17 other different effects including snowflakes and poppies.

Lighting electrician Douglas Pablo Moscinski, has been with the tour since rehearsals back in 1994.

"I started work on the show in the spring and through the summer we were putting the rig together before rehearsals in late July," said Pablo. "We rehearsed through August and opened in September. We put a lot into it, it's a big show. I spent many nights with LeRoy Bennett so that when the show was transferred to our capable hands, we'd know how to make it lock."

The show spent three years touring the US and Canada before travelling to Canada.

"I've been to just about every major city in the States and probably back too," said Pablo. "The show is somewhat adaptable



but we have to keep the fly-track a certain length at the first three beams. We can take any where from 15ft to 20ft out of the rig without much of the problem. If we go any more than that, we have to make adjustments which are time consuming."

The show spent a few weeks in rehearsals at the old Navy base in Quakers Hill, Sydney before the start of the Australian tour. Rehearsals were necessary because there were quite a few new skaters on the team.

"It's nice to be able to put things up and tinker with it before you get into a situation where in two hours

there's a show and nothing's working," Pablo said. "We also had to teach new crew guys their cues."

It was during the rehearsal period that a tragic accident occurred. A crew mini bus was involved in a road accident which killed the Props Manager and injured some crew members.

The Tomcat trussing was four beams across with a centre spine and some ladder trusses. A fly-track is supported underneath the grid. A massive 288 MFL Thomas par cans are arranged throughout the rig as well as 28-lamp moles with



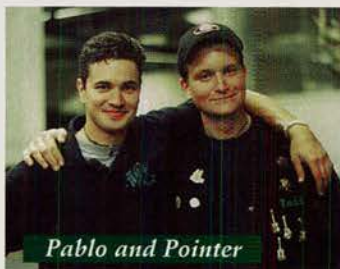
Color Ram colour scrollers on them and 2 Arri 4K fresnels with dimmer shutters. 8 Lycian 1290 XLT 2K spotlights were used.

Moving lights included 34 VL4 wash luminaires and 18 VL2 spot luminaires. Added to this were 20 Clay Paky Superscan's.

"The Superscans are used for gobo projection particularly the yellow brick road," Pablo said.

Other equipment included an Alumifax high pressure mist system, 2 bubble machines, and 2 High End Systems F-100 foggers. There were 2 96 ETC dimmer racks and 1 48 ETC dimmer rack. Control was by a Compulite Animator lighting console and a Vari\*lite Mini Artisan.

"All our Vari\*lites are strictly on the Artisan with every thing else on the Animator," added Pablo. "I like the Animator but then I got to go through it with Troy Eckerman who programmed the show on the console. He taught me all the tricks so it wasn't a struggle for me and I like it."



Pablo and Pointer

Gary Westcott, assistant lighting designer, programmed the Vari\*lites.

All of the gear, except for the Vari\*lites, travels with the show taking up 15 containers. They also carry a ground support system which they rarely have to use.

**Head Electrician** Todd 'Pointer' Straley **Electricians** Douglas 'Pablo' Moscinski, Kevin Scroggins, Adam Morrison, Jason White  
**Sound** Wendy Edwards, William Pile.

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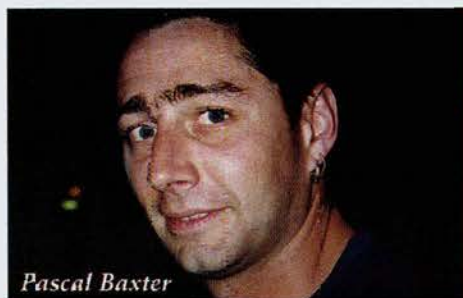


## Bangarra Dance Theatre

*continued from page 82*

only thing in Reef were the gobos," Mercurio said. "The rest was simple side-light and downlight. There were twelve gobos from the side, and ten from above, all in Selecon 1.2K Profiles. It's not a heavily cued show. There's about 60 in the hour. But there's quite a lot of cues that trigger autocues, which I'm beginning to like more and more. A cue will happen, and then, five seconds later another cue will automatically happen, so things have a constant movement."

Another wonderful effect was the dancers sitting in a circle, then throwing white dust into a criss cross of light beams in the middle. The dust hovered in the air, and caught the light.



Pascal Baxter

## Edge of the Sacred

*continued from page 82*

don't cross centre, because the musicians are sitting in a semicircle. So if you cross centre, and get into their eyes, they get upset."

Baxter had to avoid colours in the scrollers that would disturb the musicians. He couldn't use magenta or red on a harp, because every fourth string is red. Nor could he use yellows or ambers on the scores, because the pages are often an aged sepia colour.

"I've tried to get a dance/drama feel, also choreographed to the music," Baxter said. "The biggest problem, was how do you make six dancers stand out among 85 musicians, without followspot, or lots of bright light on them?"

The sound track is live, rather than on a mini disc, which made programming the cues more difficult. The conductor can vary up to ten seconds.

The Concert Hall of the Opera House is basically rigged as an acoustic venue. "I had to get a theatrical look," Baxter said. "That was achieved by putting in a lot of trusses. There are two shows, so it was hard to work out where I could have my truss positions, where I could get the angles. That took me a lot of time. I couldn't use booms or sidelight, because that would light the audience. But we got around that.

"When you want a lot of special spots, and have to refocus lights by shuffling a whole orchestra around, it's time consuming. The Vari\*Lite were great. Because Steve is such a fast operator, we used them a lot. When you're working with so many people on stage, you can't hold them up."

The Concert Hall is a flowing sculptural space, with a vaulted ceiling. Baxter lit the organ pipes in blue at one end, and swept orange dappled light around the hall and audience for a beautiful finale.

### Vari\*Lite

Steve Saunders operated the Vari\*Lites on a Whole Hog 2. This is the first time the SSO had used moving lights. "I've always wanted to see a full symphony under Vari\*Lites," Saunders said. "This is a step in the right direction."

### The Lights

The concert hall has been rigged over the last few years. It has 22 winch lines through it, plus heavy duty winch lines, 1 tonne pickups for lifting big box grids and mother grids for other effects rigs. "This show has stretched the hall pretty much to its working limit," Dunesky said. "You wouldn't want to put too much more in there. We've used all the side dimmers that are easily accessible. There's more up there, but they're a problem to get to. Pascal has used a fair bit of the inhouse lighting in the roof, which is handy to have, because it's quick and easy to reach."

Baxter used all the available hall lights, except the 1Ks. The rig is Opera House trussing and cabling. Other lights were hired from Chameleon. Baxter brought in quite a few bars of ACLs, as well as pinspots, Shakespeares, Profiles, and some Molefays. The Vari\*Lites came, with a sensitivity to the small production budget, from Mark Hammer, at Jands.

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# SELECON

# BUYER'S GUIDE

## fog machines

Prices EXCLUDE sales tax, and were correct at 15th October. All care taken no responsibility for errors. Four models only shown in each category, all these manufacturers have many, many more. Indicative only.

### FOG MACHINES

#### AMERICAN DJ

ELSTA (02) 9568 2100

**FOG HOG Junior** 700w element, 4 minute warm up, 2,500 cu ft/min output, 800mL tank capacity, FC-6 remote included, weight 4.5kg, wide range of optional controllers available allowing DMX and programmable control of the Fog Hog Junior. Comes in a promotional packaged box. \$204.10.

#### ANTARI

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**F120** The smallest of the Antari range - 700w element, 4 minute warm up, 2,500 cu ft/min output, 800mL tank capacity, FC-6 remote included, weight 4.5kg, wide range of optional controllers available allowing DMX and programmable control of the F120. \$204.10.

**F150** Antari "Mini Fogger" - 700w element, 4 minute warm up time, 2,500 cu ft/min output, 1,300mL tank capacity, FC-1 remote included, weight 4.5kg, includes powerful pump and EGO thermostat for accurate temperature control. \$286.89.

**F250** Antari "Nice Fogger" - 1,000w element, 4.5 minute warm up time, 5,000 cu ft/min output, 1,300mL tank capacity, FC-1 remote included, weight 6.5kg, includes powerful pump and EGO thermostat for accurate temperature control, optional radio remote available. \$368.85.

**F550** Antari "Aeolus Fogger" - 1,500w element, 11 minute warm up time, 20,000 cu ft/min output, 5L tank capacity, FC-2 remote included with timer and duration control, weight 15kg, includes resettable thermal protection switch, optional DMX interface available, ideal for venues or any application where large fog output is required. \$737.70.

#### HIGH END SYSTEMS/LIGHTWAVE RESEARCH

TechScape 1-800-773-187

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**F-100™ Timer Remote** with 7.6mtr cable allows setting of duration and interval in seconds, output volume and allows 0-10V proportional control, LED indicators. \$315.14.

**F-100™ DMX Remote** allows F-100 to accept DMX512 commands. LED indicators provide status information. \$408.38.

**Coldflow™ LCO Exchanger Module** uses liquid carbon dioxide to supercool a manifold through which smoke passes producing a cool dry dense fog 1cm to 100cm from the surface. \$2486.33.

#### JEM

Show Technology (02) 9898 1111

**ZR20 Mk2** is compact, portable and easy to relocate. Comes complete with a 1500W heater and takes 7 minutes to warm up. It has remote control connections (4 pin XLR) and comes supplied with universal remote control or standard remote control, optional plug-in DMX module. Has a fluid capacity of 5 litres and weighs 11kg. \$1118.40.

**ZR31** produces both smoke and haze and bridges the gap between ZR20 and ZR41. Supplied with universal remote control, 2.5kW heater, DMX connections (5 pin XLR) and has a fluid capacity of 5 litres. Weighs 17kg. \$2176.20.

**Fogger Mk3** fast heating, high-powered 1000W heating chamber, cuprous Helicoil vaporising system for quieter control, includes remote with timer control and auto feature with LED indicators. Comes complete with thermal protection and includes 1 litre of fog fluid free. \$662.22.

**Techno-Fog NEW!** tough but tiny. Hand held remote control offers the user an auto timer circuit as well as a smoke density level. Incorporates



rates all of JEM's latest technology including - 4750W heater, 7 minute heat up time, overheat protection, 1 litre fluid capacity, auto timer/variable output remote and only weighs 6.5kg. \$506.22.

#### LE MAITRE

U.L.A. (07) 5532 9922

**G100** high volume smoke output with low noise, clean dry non-toxic smoke, hand held remote, Genesis Technology. Ideal for small venue or mobile use. Smoke output: 250 cubic metre per min. \$795.

**G150** smoke output: 315 cubic metre per min, digital microprocessor control, low power consumption, quiet operation, 0-10v, continuous smoke output with no down time, timer remote and simple DMX remote optional. \$1158.

**Minifog** smoke output: 160 cubic metre per min, powerful smoke output, easy service, full electronic temperature sensing and mechanical fail safe, 12 litre reservoir, 8kg, Genesis Technology. \$578.

**Red Devil** smoke output: 180 cubic metre per min, variable smoke output, easy service, electronic sensing and fail safe, continuous smoke output available, Genesis Technology. \$723.

#### MARTIN

Show Technology (02) 9898 1111

**PRO2000 Fogger** uses microprocessor-based technology in conjunction with a specially designed heating element. Has variable smoke output and pressure control, plug-in remote control, a DMX interface, and electronic and mechanical overheating protection. Weighs 13kg, has a 9.5 litre fluid capacity and a 1600W long-life heating element. \$982.80.

**PRO1000 NEW!** Incredibly small smoke machine with built-in overheating protection, programmable output and manual control via a remote handset. Weighs just 5kg. \$506.22.

#### MDG

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**Max 3000** Manufactured with solid steel, milled components of copper, aluminium and industrial alloys the MDG range is built to last. The Max 3000 is perfect for theatre opera TV or Photo studio work. Output up to 85 cubic metres per minute, and available as portable, semi-portable or stationary versions. From \$5132.

**Ultra Max 2500** With an output of 800 cubic metres per minute the Ultra Max 2500 is for serious outdoor use and special events. It comes with the MDG 5 year warranty because it has been designed for daily and continuous use. \$7389.

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**Rosco 1000** a lightweight, compact machine with 1.83m remote control. DMX interface module available. Ideal for small to medium stages and school halls. \$750.

**Rosco 1600** variable fog output from a trickle to billows of fog. Compressed air port for special effects and to assist cleaning. Supplied with 4.5m remote cord. DMX interface available. \$1400.

**Rosco 4500** the highest output of Rosco machines designed for large venues and outdoor performance areas. Variable output producing dense clouds of realistic stage fog. DMX interface available. \$2500.

**Rosco BP 25** lightweight, portable, battery operated machine designed for small output of fog on location or where 240v power supply is not readily available. Batteries and charger are available. \$2100.

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**Gremlin** run time 30 seconds approx. Ideal machine for clubs and DJ's. Awesome output yet continuous in operation. \$318.

#### SMOKE FACTORY

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**Scotty** compact (10 x 10 x 15cm) battery or mains powered machine. Ideal for video, studio and specialist use. Options: radio remote control, 12v car adaptor. \$1600.

**Space Ball** 500W machine with roadcase. Large smoke output with full variable control via control on unit with foot switch or remote 0-10v. Options: radio remote control, timer, DMX512 interface. \$900.

**Captain K** 1500W machine, huge output with full variable control via control on unit or remote 0-10v input. Ideal for small to larger venues. Options as per Spaceball. \$1450.

**Fan Fogger** 9000W machine with road case and integral 3 speed wind machine. Suitable for large venues and outdoor shows. Continuous output, DMX512 and 0-10v control standard. Options: timer and radio remote. \$6200.

#### TAS

Coemar De Sisti Australia (03) 9467 8666

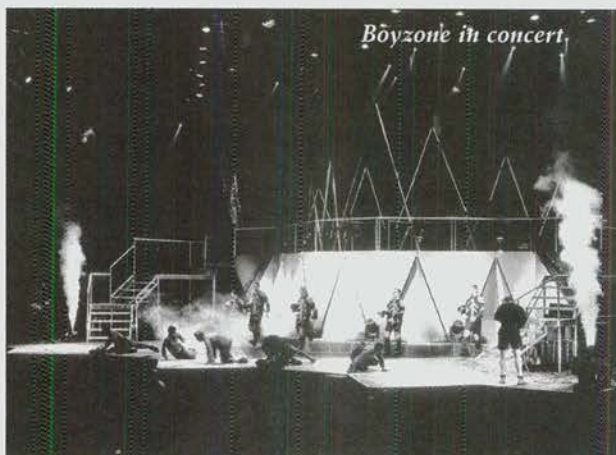
**Mini Smoke Machine** high output from one of the smallest machines in the marketplace, c/w mounting yoke for grid mounting. Approx. 2.5min heat-up time. *continued over*

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New from The Effects Company in England is a unique product called the CO<sub>2</sub> Jet System. This effect is connected to a liquid CO<sub>2</sub> cylinder and produces a jet of white CO<sub>2</sub> that is programmable to move in two axis via standard DMX controller and a Datalink Module, that is an interface between up to four heads and the DMX controller. Each head uses five channels of DMX and the system may be infinitely expandable. Stepper motors control the movement - with 355° pan and 230° tilt, and a wide range of effects such as sequence chasing, pulsating, swirling, sweeping and chageover patterns are possible with clever programming. A range of nozzles are available which reduces the output in restricted heights/spaces and different types of Discharge Horns give a varied range of effect densities. A maximum discharge height of seven metres is possible and the effect is coupled with a loud 'roar', making it a visually impressive effect.

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#### GUVT ADELAIDE + ENTERLITE

**GUVT Adelaide** have supplied over 50 custom DMX controlled **Enterlite Fibre Optic Light Sources** and some 42 kilometres of **Enterlite Fibre Optic Cable** to Integrated Media for a project with the Darwin Tourism Authority. Each light source had software and effects wheels fitted so that the light source could do two different and independent tasks at once down the Fibre Harness, enabling the client to reduce costs on the project.

Over the past 12 months GUVT Adelaide has moved almost 100 Enterlite Digital Fibre Optic Light Sources, over 100K of Fibre Optic Cable, and 800m<sup>2</sup> of Fibre Optic Curtains.

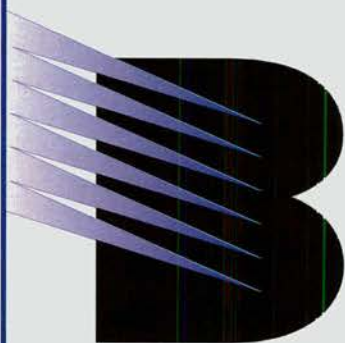
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At a special introductory price of \$2895 inc. lamp, you can now buy 4 x Duo Colours (8 heads) and CE mini-remote. Manufactured by Abstract and distributed by ULA, Duo Colours consist of two heads each of which has seven colours combined with seven gobos. Each Duo Colour is individually addressable via DMX512, whilst both heads are pre-wired within the T-bar assembly requiring just one single 240V connection.

Now in stock at ULA are the much anticipated Abstract VR8's as featured in last month's Connections. They are priced at \$2199 inc. lamp and tax.

Contact: Universal Lighting & Audio (07) 5532 9922.



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# BUYER'S GUIDE

## fog machines

Prices EXCLUDE sales tax, and were correct at 15th October. All care taken no responsibility for errors. Four models only shown in each category, all these manufacturers have many, many more. Indicative only.

ing time, 1.5 litre internal tank, only 7.8kg. Simple to maintain and service, with easy complete internal access, finished in attractive silver scratch resistant paint. \$540.

**Windy** Wind fan accessory for use with all type of smoke and haze machines. Compact dimensions and mounting yoke allow for truss mounting. Complete with adjustable fan speed controller, allows for accurate and directional dispersion of all types of fog and smoke effects. \$929.

### THE EFFECTS COMPANY

Coemar De Sisti Australia (03) 9467 8666

**Supersmoke 3000HP Turbo** Available with interchangeable, remotes, and featuring unique "flat-block, fluid-coil" technology allowing for minimal maintenance and repair costs. Wide range of accessories including ducting adaptors, drip trays, and optional sensing systems to monitor fluid levels. Fully regulated output, scratch resistant, textured finish. Units features unique turbo-fan assistance to accurately direct and regulate output. From \$2,490.

**Cyclone** State of the art, stadium-filling smoke machine, with twin thermally protected pumps feeding twin blocks producing awesome output. Externally accessed filters, unique copper coil system, auxiliary 20 litre external tank, 5 litre internal capacity. Includes independent variable output, and turbo-fan air boost for total control of quantity and direction of output, fully DMX512 controllable. The ultimate outdoor, concert machine. From \$5,500.

**Effects Company Fluid** Five versions of industry-compatible, safe & tested, fluids: Standard (traditional dense white smoke) including CDA brand fluid, Haze (thinner, hazier effect with slight blue hue, quick dispersal, particularly suitable for enclosed areas), Superhaze, (virtually transparent to the eye, perfect for cracker-type effect from conventional smoke machines), Lowsmoke, (for use with Cirrus Lowsmoke in two grades), Aerosol Canisters, (free of CFC's suit most canister-based machines at a low price). From \$7.00 per litre.

### HAZE/CRACKER/OTHER FOGGERS

#### ANTARI

ELSTA (02) 9568 2100

**HZ100** A revolution in Hazer technology - it is equipped with an efficient oil-free permanently lubricated air compressor. No heater - no warm up time - uses any non-flammable, non-toxic Haze fluid. Output 1,000 cu ft/min, air pressure 30 psi, weight 12kg, optional timer and DMX remotes available, 2 Litre tank. \$654.92.



#### HAZER

Coemar De Sisti Australia (03) 9467 8666

**Hazer MkII** Uses water-based fluid to produce continuous output of haze. Suitable for use in clubs, stage, productions, etc. The unit is able to be operated with a choice of haze outputs from thick and long-lasting to wispy and easily dispersed. A DMX option is also available. \$1,350.

#### HIGH END SYSTEMS/LIGHTWAVE RESEARCH

TechScope 1-800-773-187



**Nebula™** new cold solution agitation method produces a haze that is both subtle and effective. Comprehensive remote control is included. Timer, DMX, analogue or manual control. \$4565.45.

**Atmospheres Lighting Enhancement Fluid** long lasting Nebula Formula in 4 litre container for use with Nebula Haze Generator 1200. \$114.70.

#### JEM

Show Technology (02) 9898 1111

**Hot Technology 2000** the JEM Hydrosonic 2000 produces a virtually invisible haze without creating clouds of distracting smoke. It takes JEM Hydrosonic fog fluid to ensure safe and reliable operation. The machine comes complete with timer, output level control and fluid control, DMX address settings and machine status, weighs 32kg. Has an almost silent running. \$4097.55.

#### KUPO

Show Technology (02) 9898 1111

**Silk Hazer** unlike conventional fog machines that burn fluid, the Silk Hazer uses no heat at all, but a fine long lasting mist that leaves no residue. Specially designed tank prevents spilling and has a fluid consumption of 1 litre every 48 hours. No warm up time and has a built-in fan for quick dispersal of haze. \$1146.72.

#### LE MAITRE

U.L.A. (07) 5532 9922

**Neutron STAR Hazer** New! Non residue, silent haze machine. High output, 2.5 litres of fluid lasts 100 hours. 0-10v or DMX512 optional. 2.5 litre reservoir, no warm up time instant effect, 5 year warranty \$1065.

**G300** smoke output: 850 cubic metre per min. 0-10v or DMX option, continuous output, hazer or smoke machine converter, timer, LED display. Electronic fail safe. Twin pump system. \$2868.

**Pea Souper** smoke output: 760 cubic metre per min. Dry ice machine, light weight, compact and portable. 4 step flow rate control, water level indicator, non rust construction. \$974.

**LSG** used with G300, a CO<sub>2</sub> container to create large volumes of low lying fog which does not change into choking smoke. \$FOA.

#### MDG

Bytecraft (03) 9587 2555, (02) 9550 3955

**Atmosphere** The non-stop haze maker creates a constant mist to enhance your light effects. Designed for theatre, TV indoor laser and live shows it has an integrated fan that disperses haze through 270 degrees. It is noiseless and produces a fine pure white haze with long hanging time. Available in portable or sta-

tionary versions from \$5542.

#### REEL EFX

Coemar De Sisti Australia (03) 9467 8666

**DF-50 Diffusion Fogger** The "industry standard" cracked vapour unit, used by almost every major production company in Australia and overseas. 3+ hour hang time, 1 litre of fluid lasts approx. 16hrs. Fills 5,000 sq. m. per hour. Only 31x36x23cm and 16kg. Straight-forward, easy to use and service, environmentally safe. \$4,300.

#### ROSCO

Rosco Australia (02) 9906 6262

**Hazemaker** creates an atmosphere of non toxic water based haze that won't leave residue on fittings. Will run continuously to fill a venue and maintain a haze to enhance focused light beams. Economical to run using special Rosco Haze fluid. Supplied in a robust road case. \$3400.

**Hazemaker Fluid** available in 4 litre containers for use only in Rosco Hazemaker. Non oily and no residue, this haze is virtually invisible and is designed to highlight focussed light beams. \$140.

**Rosco Fog Fluid** regular billowing white fog for use in Rosco machines. Water based, non residual. Available in popcorn, Pina Colada, Lemon, Tropical, Apple Blossom, Strawberry, and Mint scents. Available in 1 and 4 litre containers. \$17.

**Rosco Stage Fog** a fast dissipating fog. Appears as standard fog and disappears as rising. Suitable for theatre productions where fog effect must clear quickly. Available in 1 litre containers. \$17.

#### SMOKE FACTORY

LSC Electronics (03) 9561 5255

**Mr Mister** air cracking utilising Glycol based fluid. Supplied fully road cased and provides a non hazardous haze that lasts. Can be operated from almost any compressor or with Mr Pressure (see below). \$2750.

**Mr Pressure** fully road cased silenced compressor to suit Mr Mister. This unit is designed for continuous operation. \$225C.

#### TAS

Coemar De Sisti Australia (03) 9467 8666

**Bubble Machine** Produces continuous output of bubbles for use in clubs, stage, etc. Truss mountable unit with fully self contained fluid reservoir, suitable for production and club use. \$590.

**Snow Machine** Produces continuous output of artificial snow for use in clubs, stage, etc. Truss mountable unit with fully self contained fluid reservoir, suitable for production and club use. From \$999.

#### THE EFFECTS COMPANY

Coemar De Sisti Australia (03) 9467 8666

**Cirrus Lowsmoke** Dry-ice effect from conventional smoke machines, virtually indistinguishable from dry-ice. Utilises readily available liquid CO<sub>2</sub>, producing up to 48 minutes of continuous fog from a 34kg cylinder (can be manifolded). Electronic link to all Effects Co. machines, and adaptable to suit other machines, eg. F100. The most efficient and economical method of producing fog, requiring no pre-cooling for use. From \$3,890.

**Cumulus Fog Machine** Conventional dry-ice effect unit. Features include multi-level output gauge, ducting adaptor, and extremely solid construction. Meets the most stringent requirements for production and touring use. From \$1,500

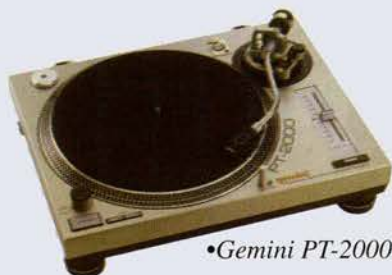
next month  
**SCROLLERS &  
COLOUR CHANGERS**

# Club

# 🍴 Sandwich 🍴

Edited by Caroline Grafton, Compiled by Nicky Morris, Catriona Forcer & CG

## Product News



•Gemini PT-2000

► **Gemini** have launched the PT-1000 and PT-2000 turntables in a bid to chase the ever elusive and incomparable Technics SL1200 captured market. Gemini engineering has aimed to produce a product that is similar in feel, weight and start up time to the classic SL. Both the PT-1000 and 2000 include anti skate adjustment; adjustable pitch control +/-10%; feather touch start/stop control; strobe illuminator; pop-up target light; headshell inclusion; XLR lamp adaptor and the PT-

2000 offers an adjustable hi-tech tone arm. The PT-1000 price is A\$799 inc. and PT-2000 runs at A\$899 inc. Available from Disco World on (03) 9739 5255.



► **Numark** have just released the rack mountable CD-810 Professional Single CD Player (above) for 8cm and 12cm discs. Features include instant start; track pro-programming function; display track elapsed, track remain or total remain; 75 frame per second counter; +/-10% variable pitch slider with resume switch; +/-16% pitch blend AND a jog wheel for fast and accurate searching. Price A\$820 inc. Available from Universal Lighting and Audio (ULA) Sales Hotline 1800 648 111.

► Something cool from **Vestax Pro Audio**

is the new AA-88 Active Audio. Although predominantly a mixer, the AA-88 also has inbuilt a CD and a Minidisc (MD) players. Mix the CD directly and record/playback on the MD. Other features include a crossfader for scratching; +/-8% pitch control; joy stick for fast forward, rewind and pitch blending; ten key switch for direct song selection on CD and/or MD; internal FM tuner; 2 phono and 4 line inputs in addition to the CD, MD and tuner and a power amp. Priced around A\$3,995 inc. Available from Moore Music. Phone (03) 9419 0344.



•Vestax AA-88

## Club/Venue News

► Out with the Irish pub night's and in with the flares. The **General Bourke Hotel** in Parramatta, Sydney NSW, has seen the light of a new era on it's Thursday night hit list. 70s, 80s and 90s retro is the new theme featuring a cover band most Thursday nights and a Dance Club to boot. Also if you happen to chat up a guy called Jack - he'll shout you a drink, all a part of the new 'Looking for Jack' promotion at the General. Wednesday nights look out for the General's Rock'n'Roll night, the best rock'n'roll from 8.30 'till late. Wednesdays and Thursdays is free! New from mid November on Saturday nights is 'night of insanity', a night of insane dance club music from around 9pm. To find out more call them on (02) 9365 8811 or make your way to The General Bourke at 74 Church Street Parramatta.

► Naracoorte in SA, is the lucky town this month, seeing the opening of a new nightclub. Called **Shapes**, the nightclub is opened Friday and Saturday nights from 9pm 'till 1.30 with a cover charge of \$6. Featuring a dancefloor, tables and chairs

(for those who wish to drink and chat) and a lounge area. The sounds range from top forty dance music, to the original sounds of the 70s and 80s. There is also hope that the club might host live bands passing through town. To see it for yourself, make your way to 14 Robertson Street, Naracoorte.

► In Brisbane Qld, the latest club on the scene is **The Departure Lounge**. Housed in the Lands Office Tavern, The Departure Lounge offers alternative dance music every Friday from 10pm and Saturday nights from 9pm 'till the wee hour of 5am. Student drink specials are available. Also housed in the Lands Office Tavern is Comedy Central. See a live comedy act, from 7 pm, for just \$8 (\$5 for students.) So for a night of variety make your way to cnr. Mary and George Sts Brisbane. Ph: (07) 3221 6511.

► **The Vault** in Melbourne Vic, is now the proud holder of a 24 hour license. Every alternative Friday night the Vault holds "Tool box". Just for the girls, the club concentrates on the lesbian club scene. Cover charge is \$5 with a pass or \$8 without, the Tool Box starts pumping

from 9pm 'till late. Every Saturday night The Vault houses Sic. Boasting three rooms..... "Happy House" featuring the likes of Jason D'Costa, C.J. Dolan, "Psychedelic Psycho Room" with DJs Andrew Till and Petie and "The Dungeon" where you can experience the mysteries of the Mistress Mena, Madam Mia and Submissive Lolli. Entry is \$8 with a pass. Sic lights up at 10pm 'till late. For more info call (03) 9629 9410 or make your way there 7-9 Banana Alley Melbourne.

► **Audio Level Issue** - Adelaide entertainment audio levels being monitored. After a startling discovery by Adelaide University that audio levels near nightclub bars ranged from 105 to 110dB, an audio audit is to be put in place by the Department of Industrial Affairs. Prolonged exposure (max 8 hours) at levels greater than 90dB is considered unsafe and could cause permanent damage. Occupational Health and Safety officers will be attaching sound monitors to employees working in most aspects of the nightclub, concert and dinner/dance industries to gauge noise levels in the venues. Talk about being 'wired for sound'. I do take

## Fortunes Nightclub

Conrad Jupiters Casino, Gold Coast Queensland, introduces the new look **Fortunes Nightclub**.

Situated in the entertainment complex, above the twenty four hour casino, you can witness an early sunrise from the nine metre high, 720m<sup>2</sup> glass atrium that is Fortunes. Indeed the venue lives up to it's name. Style and comfort are the key interior design factors, producing a plush, sophisticated atmosphere.

Dance until dawn with resident DJ, Justin Lakerink, pumping out Top 40 as well Dance tracks. The club is open seven nights a week from 8.00pm 'til very, very late. Mid week Fortunes features live bands and regular theme nights.

In preparation for the coming Christmas tourist season the lighting installation/revamp was designed and completed by Mick James Electronics. The audio design came from Acoustic Technologies.

One difficulty was that Fortunes already had a considerable amount of lighting technology in stock which needed to be incorporated into the new design.



### The Installation

Mick James Electronics Ph: (07) 5526 9303  
Peter McQueen (ULA) Programming Ph: (07) 5532 9922  
Acoustic Technologies Ph: (07) 3376 4122

### The Lighting Spec

9 x High End Systems Intellabeam 700s,  
6 x Intellabeam 400s, 18 x Colour Pros  
and 1 x F-100 Fogger; 15 x Infinity Goblins;  
10 x JB Varyscan 3 Special Plus'; 6 x  
Abstract Cladiator 3 CEDs, 2 x Galactic  
Moons; 1 x NSI MLC-16 Lighting Console.

### The Audio Spec

8 x Acoustic Technologies MH01 Midhigh  
Speakers, 4 x FRO1 Full Range Speakers,  
4 x BB03 Subs, 6 x M-1000B Series 2  
Power Amps & 1 x Stereo 2 Band X-over.

### The Venue

Fortunes Nightclub, Conrad Jupiters Casino  
Broadbeach Island, Broadbeach, Gold  
Coast, Queensland.

Phone: (07) 5592 1133

Manager: Jeff Butler

Promotions: Scott Agnew

Cover Charge: Sunday-Thursday Free, Friday \$5, Saturday and Special Events \$8.

## Club/Venue News cont'd

this issue seriously, but honestly any government could have asked nearly any Connections reader the same question and gotten the answer for free. The real trick will be finding the solution to a problem that has existed since the 60s.

► **Smoke Issue** - Is the day when you can't go down the pub for a drink and smoke drawing near. And oh! how will you see the pin beams surrounding the dance floor or create that near tangible beam of colour in a smokeless room. Yeah I know you'll just pump a little more

juice through the fogger, but it won't be the same will it? Venues around the country are coming under a concussive barrage of fire from the anti-smoking lobby groups. The Sydney Hilton Hotel recently had a Human Rights & Equal Opportunity discrimination fight on their hands. An Adelaide woman, a double-lung transplant recipient and cystic fibrosis sufferer was awarded \$2000 damages after suffering physical distress in the smoke filled venue in March 95. The ruling has been hailed as the beginning of the end of smoking in indoor venues. The Sydney

Harbour Casino has received an order from NSW Work cover, to ban smoking, as protection for the 3000 employees from passive smoking. On the other end of the scale, the predominantly outdoor venue, the Melbourne Cricket Ground is currently surveying patrons, as to whether the MCG should become a smoke free venue. 70% of those surveyed had no objection. The most likely outcome is an expansion of non-smoking seats, currently representing 25% of the stand seating. Smoking is already prohibited in the indoor members area, bars and functions.

# BEST MIXER OF THE YEAR



We are proud to announce that Gemini's PS-626 was recognised as the "BEST MIXER OF THE YEAR" for 1997 recently at the Entertainment Technology Awards show in London. We would like to personally thank all of you for your efforts which made this award possible.

As you know we now have the FS-626PRO and if early sales are any indication, we will expect to receive the award again next year (with your help of course). As a reminder, the PS-626PRO has all the features of the "award winning PS-626PRO" as well as -26dB Cut features for the bass, mid and high for each channel. Another feature that the D.J.'s requested was a recessed fader. Well, we listened and have added that to the PS-626PRO as well.

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# THE PA PAGE

## How loud is LOUD?

*What's that Noise? by Michael Orland.*

Occasionally I get asked which of the 4,728 bands I've worked for over the years I've enjoyed the most. Of course, those asking me are usually just interested in hearing me drop names, so they're often disappointed when I answer "Society of Seven", a seven piece cabaret band, six of whom are Phillipinos, based in Hawaii. (*I know who they are! -Ed*)

At the time we were due to start a run of gigs with them, we'd just finished a major tour of Mount Druitt with the internationally disclaimed "Tub of Lard". (The Lards had just scoured a lucrative anti sponsorship from Marshall amplifiers who were paying the band to stop using their amplifiers on stage). After which the exacting standards of Society Of Seven came as something of a shock to our collective system.

The bands leader, Tony, was a short, soft spoken man. But when he spoke, everyone would instantly stop yabbering. The quiet authority thing. At the first sound check before the first gig, he walked on stage, looked down at our wedges and said "What's that Noise?" Jim and I both walked up behind him to listen. "Ummmmm...What Noise?"

I asked. "That Noise. We cannot perform with that noise." And I realised he meant the tiny little background hiss which had always been present in our monitor system. What we considered barely perceptible and therefore quite acceptable to all previous clients, he considered totally unworkable.

Our monitor desk at the time was a Yamaha 2408. After some quick experimenting I found that pulling the masters down to about a third of their usual position and cranking the channel volumes up to compensate, reduced the desk's internal noise substantially. After which Tony was happy.

All sound equipment generates noise. The cheapest piece of crap through the worlds most expensive CD player State of the Art electronics may have noise levels which are inaudible, or even, on standard test equipment, immeasurable, but there is no such thing as truly noiseless. And any noise

can be amplified. Once you accept this as a given, then what becomes important is the signal to noise ratio. And whether that ratio is acceptable for the intended application the sort of internally generated noise within desks and processors is usually manifested with a hiss. Hums and Buzzes are usually the result of interconnecting gear, which will be the subject of next months page.

I have known people to take items to technicians for "repair" because they were too "noisy". This is a favourite pastime for many guitarists. And I have known those technicians to respond that because the noise was within the manufacturer's specifications, the item was not faulty and therefore there was nothing to repair. This is not just a matter of semantics.

It is theoretically possible to modify any piece of electronics for quieter operation. But this usually entails design work, not repair work. And the question then becomes whether the desired improvement can be achieved within practical limitations, the most important being the customer's budget. Usually this is to sell the item to someone for whose application they are acceptable, and then to buy a more suitable replacement.

In your average PA system, electronics are daisy-chained desk to equaliser to compressor/limiter to crossover to amplifiers.

Within each system will be an optimum range of input and output level matching to achieve the best possible overall signal in noise ratio. As the IEC standard of +4dBu becomes more acceptable by manufacturers, this will become easier. Don't be too intimidated by other arbitrary level markings. And as for things like clip indicators on equalisers, well, they're usually there as a remote indicator of the status of your amplifiers. They therefore become pretty irrelevant once other gear gets wired between equalisers and amps.

I like the peak indicator on our White Equalisers, They came with big knobs which allowed you to

set them to flash them anywhere it jollywell suited you. The only clip indicators I fret over when I'm engineering are those on the input channels of my consoles and those on my amplifiers. All others are serving suggestions.

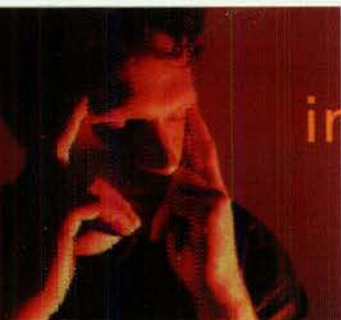
Sometimes folks talk about overloading the output of a desk, the input of an equaliser etc. This is rarely true. Most professional standard processing equipment can easily deal with up to 10 volts in and out without any internal overloading. The IEC standard for an amplifier to achieve maximum rated output is 0.775 dBV on its input (even non IEC standard amplifiers rarely requires more than 3 volts) And only in the weirdest setups is 10dBV of line level signal desirable or even possible.

I have known many engineers (OK, myself included) who have responded to visual stimuli unnecessarily. Red lights can easily convince you you are hearing levels and types of distortion that don't exist. It can be a real brain/Pavlov sort of thing.

I recently did a gig at a large worker's club in the Sydney Suburb of Revesby. The in house crew were concerned about the possibility of embarrassing them in one of my articles, so I'll simply refer to it as "Club Y" and them as "The evening crew" (The names "Club X" and "The Morning Crew" were already taken).

During the afternoon, while there was just three of us in ht auditorium, they were quite apologetic about the background noise of the ageing PA system. I was repeatedly assured that no matter how loud it seemed against the quiet afternoon, it would not be noticeable/relevant during the performance. They were right, of course. It just seemed ironic, as someone who has owned sound systems for so long, to finally be on the receiving end of this "apology". It also serves as the classic example of the subjectiveness of "loud" and the relevance of the reference points that I have been yakking about recently.

*Michael runs The Public Address Co in Sydney, call (02) 9799-7219.*



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**Prisms**

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**Frost**

The unit is fitted with 1 frost filter for diffusion effects.

**Focus**

Remotely controllable focus system.

**Control**

DMX 512, with digital display for easy digital start address and option setting. The unit requires 11 DMX channels in normal mode and 13 channels in high resolution mode.

**Motors**

12 Stepper motors controlled via internal microprocessor

**Power**

External power supply unit with in-built power factor correction. Power consumption is 3500 VA.

**Cooling**

Both axial and tangential fans with cancelled airflow for quiet operation.

**Dimensions and Weight**

•Projector: 1200mm long x 540mm wide x 290mm high / Weight 54 kg  
•Power supply unit: 370mm long x 350mm wide x 320mm high / Weight 33 kg

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*"Benkel" in Jakarta, Indonesia seen from outside*



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