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Professional Audio and Visual Technology

February 2001 AS\$4.90 (inc GST)

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market report

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compared

Dimmers
market report

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market report

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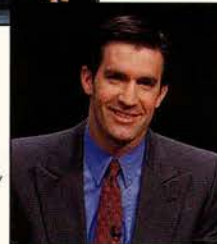


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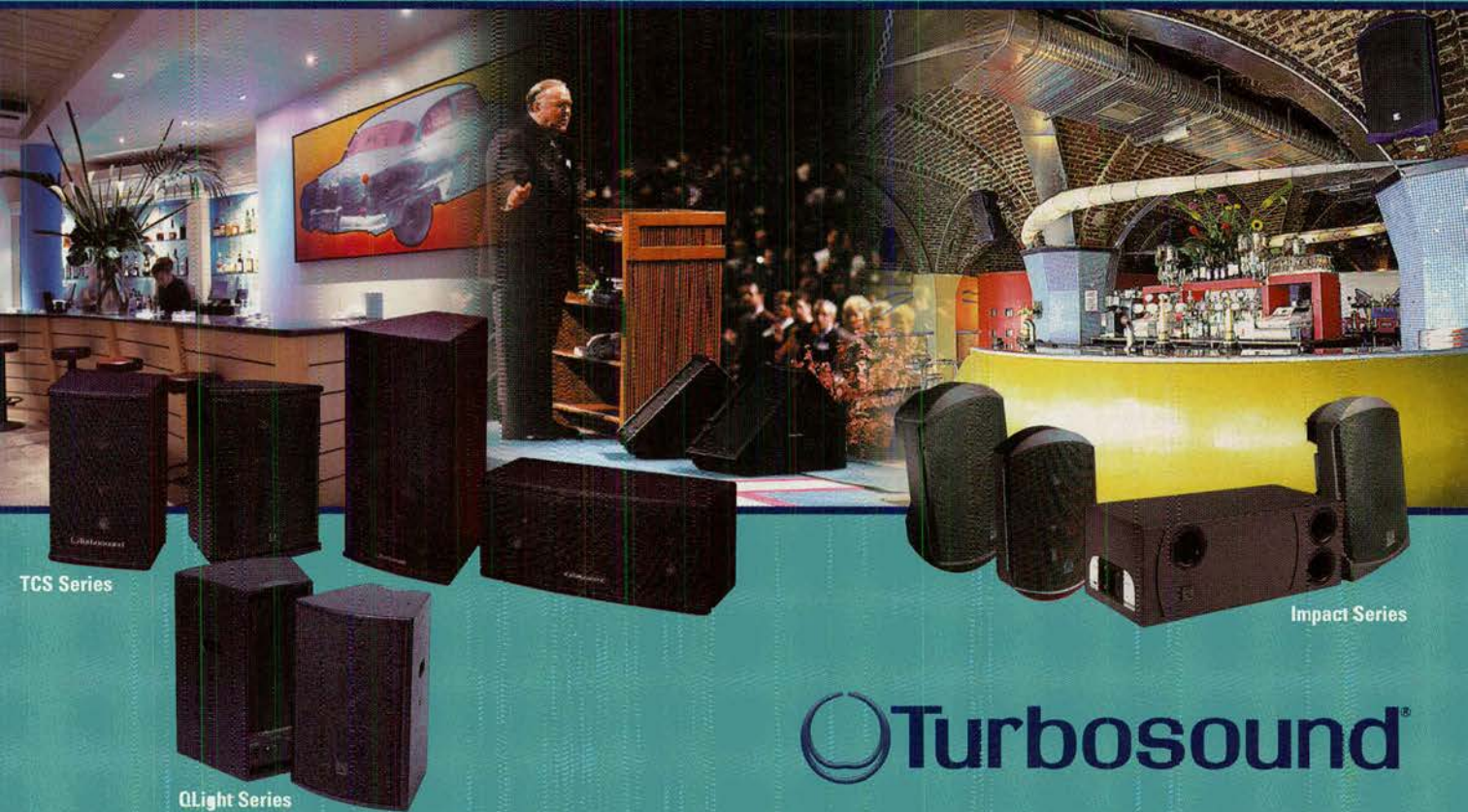
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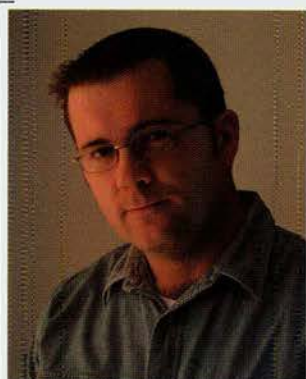
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For further information on the Turbosound range, email marketing@audiotellex.com.au or call your nearest Audio Telex office



A big change for 2001 - we are going to focus more attention on direct interaction with you, our readers.

We've made a *Forum* section at the end of the mag, in which we have pooled all of the letters, job ads, births, classifieds etc. This section is for you, so if you have something to share, complain about or comment on, this is the place for it

Also part of this new focus is the introduction of a new information service we are going to offer.

Called [Connect@conpub](mailto:Connect@conpub.com), we are going to provide distributors a way to send promotional material, special offers, invitations to events, etc specifically to the people interested in their products. We are always asked for access to our vast database of industry people. We have refused these requests because we want to maintain your privacy.

With Connect@conpub, you can choose to receive material from these companies safe in the knowledge that we do not reveal your contact details to the companies using the service. It is free to join, and you do not have to be a Connections subscriber. Our website (www.conpub.com.au) will soon have a page where you can join, and the option to join is also included in your subscription.

The other change to the 'look' of the mag is the cover - special thanks to Ray Pittman who has taken over the role of cover design for Connections.

Finally, Australian readers will appreciate a reduction in our cover price, to \$4.90. We are on a readership drive, and aim to really build our readership numbers!

-John Grimshaw, Editor.
 email: john@conpub.com.au
 or call +61 2 9876-3530.

PRESENTTECH



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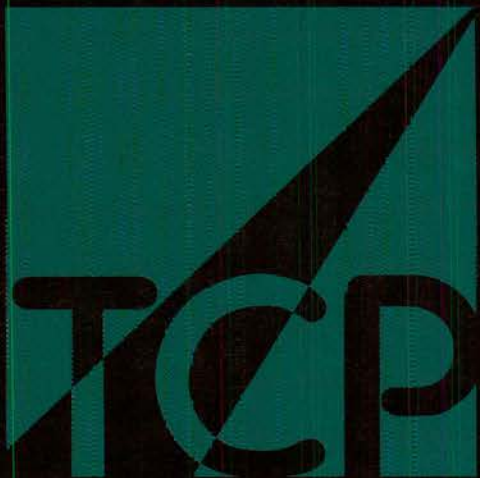
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Connections

The Asia/Pacific Professional Audio and Visual Technology Monthly **FEBRUARY 2001**

Studio Master Classes seek out new elite

Does lack of A-list producers and engineers sends projects offshore?

By Mandy Jones

Are there a lack of 'A list' producers and engineers in Australia?

Steve Da Fina who manages Studios 301 in Sydney thinks not.

"I think there's an abundance of talented producers and engineers in this country so rather than a lack of A-list, I think there's a lack of recognition of our own talented people."

"I have at least one overseas producer or engineer in the studio every month working on local projects, which is great because they can add to the knowledge of the locals by sharing their experiences from other projects."

Shane Fahey from Megaphon Studios

(Sydney) is not so sure.

"The statement there is 'a lack of A-list producers' is a very blunt way of putting it. I'd prefer it if it was phrased in a more co-

operative way, but to some extent I believe that is the case, but not because our people aren't willing or experienced."

A forthcoming series of Master Classes specialising in record production through lectures and studio sessions will be staged this month. Organised by International Artist Management, the series will run in Sydney, Melbourne, Adelaide, Perth and Brisbane. Featuring US

based Producer/Guitarist Mike Wanchic (pictured left) and fellow-American Engineer/Mixer Mike Plotnikoff, the sessions will be an

> please turn to page 24



MP3's hit single sales

Downloads bite, but albums up 2%

The Australian Recording Industry Association (ARIA) has announced an overall growth of around two per cent in the sales of sound recordings and music videos in the last sales period. Based on preliminary figures for the 1999 - 2000 calendar year, the second half of the year finished stronger than the first half resulting in the two per cent increase.

ARIA's Executive Director Emmanuel Candi largely attributes the increase in sales to new product.

"The very pleasing thing about the year was the amount of new Australian product and new product in general that was broken and sold overall. (Such as) Madison Avenue, Savage Garden, Tina Arena, Vanessa Amorosi, S2S and Killing Heidi, both here and now increasingly overseas as well."

The figures reveal huge growth in the sales of albums on vinyl and cassette, as well as MiniDisk compared to the same period in 1999.

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Photo by Andrew McGregor

Falls Festival founder Simon Daly believes his camping and music festival has now reached European proportions. This summer's nature fest included rock acts like Killing Heidi (pictured), and boasted production from Johnston Audic Services, Concert Lighting Systems and LX Productions.

All change at Melb Staging Connections

Era ends as Davenport family paid out and HQ moves in

Litigation that had embroiled the Melbourne operations of Staging Connections has been settled. A court case was launched by former Melbourne partner and manager Terry Davenport, who desired an end to his partnership with the national group and Village.

At presstime a new manager, Ray German, has taken over in Melbourne on behalf of the national group. The Davenport interests are understood to have been awarded a multi million dollar amount by the court for their share of the company.

Mr. Davenport has consistently refused to talk to Connections.

Beyerdynamic moves to reborn GUET

Sydney based GUET have announced that they have been appointed sole distributor of Beyerdynamic products in Australia. Beyerdynamic produce a wide range of microphones, headphones, headsets, wireless systems and other accessories.

Greater Union Entertainment Technology (GUET) has been diversifying its business activities into related markets, while maintaining its position as market leaders in the Cinema industry.

Now GUET will be split, with cinema fit-out going to ATLAB, and Sound/Video/Lighting distribution and installation remaining with GUET. This area of business has experienced dramatic growth in recent times.

Offices will remain in Brisbane, Sydney, Melbourne, Adelaide and Auckland. •Call +61 2 9420 4888

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Who is doing what?

Audio Telex appointed as sole distributor for Soundtracs Topaz Range

Soundtracs (UK), has appointed Audio Telex as its sole distributor in Australia and New Zealand for the Topaz range of analogue mixing consoles. For Audio Telex it is yet another major brand name and fits nicely with the rest of their pro audio product portfolio including Media Matrix, Turbosound, Sabine, Symetrix and Australian Monitor.

Managing Director Roy Morgan told Connections that Soundtracs is a major boost for all his customers. "The brand is very well recognised around the world as a market leader and fits in very well with the rest of our pro audio catalogue. Soundtracs have some very exciting new product initiatives planned for 2001 and we're sure our customers will be very happy with the range."

The NEW Audio Telex 80 page catalogue was available from January 29. The catalogue lists the host of new distribution appointments in addition to Soundtracs. These include Turbosound (Loudspeaker Systems), SoundTech (Powered Mixers, Speakers, Processors), Euromodule (Portable Racks), Euromet (Premium Stands and Accessories), Hacousto (Accent Zone Paging System).

The catalogue also features numerous new products from their current suppliers such as, Peavey Architectural Acoustics, Media Matrix, Australian Monitor, Mipro, Symetrix, Sabine and the Audio Telex contractor products.

• For more information call Audio Telex on +61 2 9647 1411, or visit www.audiotelex.com.au

Elton John CD world's first 144 track 24/96 recording

A recent series of concerts by Sir Elton John at Madison Square Garden was recorded and remixed in 24bit/96kHz format by leading engineer Frank Filipetti.

Two Euphonix R-1 recorders were used for the main recording and a third as backup - giving 144 tracks. The recording was subsequently used to post-mix audio for the television recording made at the same time, as well as for a CD that was released late last year. The intention is also to produce a full surround DVD-A of the concert.

Interestingly, the Euphonics systems was a later addition to the recording system. The three R-1s were side by side with two Sony 3348 48 track HRs, an Otari RADAR II 24bit hard disk system and two Tascam DA88's.

When the mix-down process was begun, it was quickly decided that synchronised

TRAGEDY AT HER MAJESTY'S AS DOORS CLOSE FOREVER

A tragic accident involving the counterweight system at Her Majesty's Theatre (Sydney) resulted in the death of a mechanist. **Geoff Richards**, 53 from Maroubra, was found on the fly floor with severe head injuries, and ambulance officers who were subsequently called to the scene could not resuscitate him.

While the exact cause of death is yet to be determined, it appears that a counterweight has fallen from a cradle on a fly that was either being worked with or adjacent to the working line. It happened at around 4:45pm on Wednesday 3 January during the bump-in for the theatre's final season "The Far Side Of The Moon". The show's opening was delayed by a day due to the lost time while investigations took place.

Staff at Her Majesty's have asked that, in deference to the family's requests, an obituary not be printed.

This comes as a sad end to the theatre, which closed its doors for the last time when "The Far Side Of The Moon" completed its run in January. Her Majesty's is to be demolished and replaced by an apartment block. Rebuilt after a fire in 1970, the theatre opened in 1973. With the Lyric Theatre at Star City Casino taking the lion's share of theatrical productions, and Capitol Theatre continuing to pick up many shows, Her Majesty's simply became financially unviable.

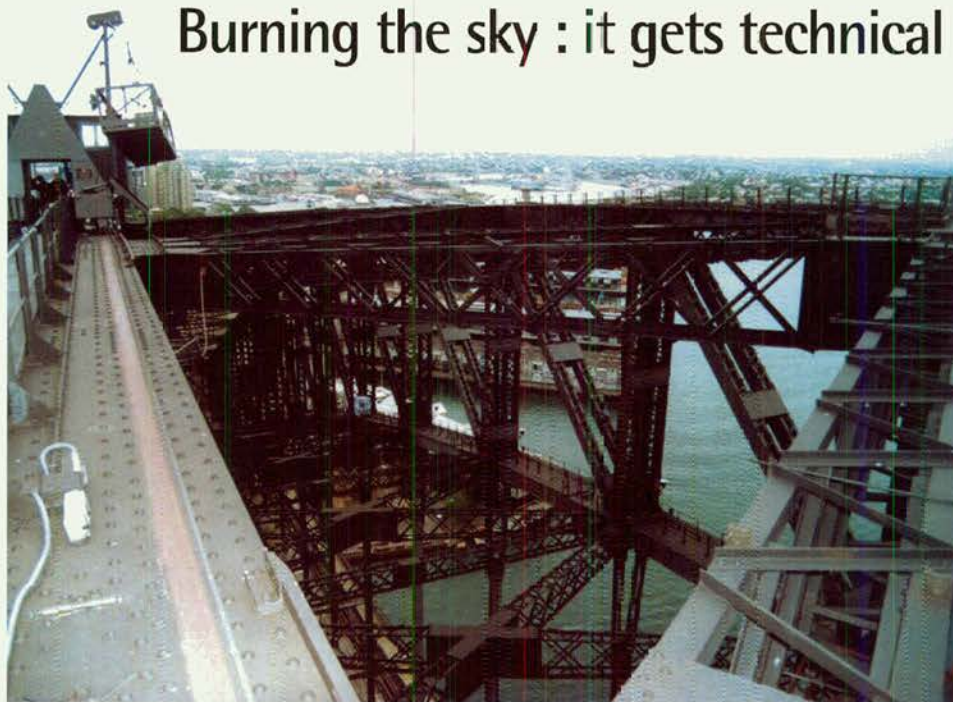
President of High End Systems Resigns

AUSTIN: **Bob Schacherl** has resigned from High End Systems Inc after 23 years. He is stepping down to spend time with his family and pursue personal interests. Bob was one of the founding partners of High End.

playback of the originally intended equipment was too problematical, so the R-1s were used instead.



Burning the sky : it gets technical



Blowing up the Sydney Harbour Bridge. By John Grimshaw

As yet another year rolls past, it came time to again attempt to set fire to the air above Sydney, and preparations for evening that was watched by millions capped off a year that was very busy for the entertainment industry across Australia.

Controlling and coordinating the effects over such a large area is no small task - the control room itself had its own two day bump-in. Located in the Boardroom of NSW Department of State and Regional Develop-

ment communications, data lines filled the bulk of the installation equipment. These included 13 radio channels, 18 Telstra lines out of the control room, 10 PSTN land lines, data lines, control lines, ISDN lines, 15k stereo lines to the SOH, TCN 9 and 2UE (taking a mono split). There was also an open line from Robbie Klaesi (Technical Director) to the TCN 9 studio in Willoughby and then patched to the OB unit at the SOH.

> please turn to page 29

Yamaha Roadshow this month

Yamaha are keen to introduce to the market their newest studio tool, the AW4416 mixer (reviewed Dec 2000). For an introduction to this mixer/multi-track HD device in Sydney or Melbourne, phone 1800 805 413 ext 105 (overseas +61 3 9693 5105).

- ◆ Sydney- Wed 21st February
Film & TV School, North Ryde, 7:30PM
- ◆ Melbourne- Wed 28th February
Yamaha HQ, Southbank, 7:30PM

LSC BROADENS REPRESENTATION

Australian based lighting control manufacturer, LSC Lighting Systems has three new distributors for its lighting control product range. Europe, Sth America and the Middle East have all had representation increased.

LSC's Marketing Director, Alan Graham comments, "This has topped off a great year for LSC. Seven new products have been released during the year, eight new distributors added and sales are ahead of budget."

• LSC Lighting Systems ph +61 3 9561 5255

Barco roll out projectors

BARCO are pleased to invite industry members to the Australian release of their new SLM G5 3 chip mid-range DLP projector and the BarcoReality 6500 LCD projector.

The roadshow will introduce BARCO's new reference products in both DLP and LCD projection, as well as BARCO's developments in network connectivity.

The roadshow is broken into two focused sessions: a corporate session which demonstrates both units, and a rental and staging session showing rental partners how the BARCO SLM G5 solves their problems of time, maintenance and total cost of ownership as well as introducing the latest in the 6000 series rental market workhorses.

The BARCO roadshows will be held throughout February kicking off in Melbourne on 13th & 14th, Sydney on 21st & 22nd, and Brisbane on 27th & 28th.

For locations and times contact BARCO on +61 3 9645 5833 or barcosys@netspace.net.au

Moves & Changes

◆ **Electric Sunshine** (Sydney) have a new phone number: +61 2 9763-7777.

◆ **Lighten Up productions** have moved to the old Mission Theatre in Newcastle at 141 - 147 King street, Newcastle. Call +61 2 49294277.

◆ **HM Audio** are now relocated at 3B Mercury drive, Shepparton. Call +61 3 5831-3577.

◆ New ULA Staff

The ULA team are pleased to welcome **Ray Lander** and **Glen Gattenhof**. Ray will be based out of the Melbourne facility, specialising in ULA's ArchiVision products. Glen joins the Queensland team as a sales representative. Ray or Glen can be contacted on 1800-648-111 Australia wide.

◆ Brett Bower joins Gearhouse

Former head of ICIA's regional office, Brett Bower, has joined Gearhouse as NSW Sales Manager.

◆ Showtech Riggging

After changing their premises 18 months ago, and a mix-up with Telstra, they have been losing many phone calls. Correct details: 510 Williamstown Road Port Melbourne, 3207
Phone: +61 3 9645 4133
Fax: +61 3 9645 4637

◆ New Name for Horwood

Horwood Australia Pty Ltd have changed their name to **Audio Sales & Marketing Pty Ltd**. The Sydney based company is a distributor of numerous brands, including Atlas Sound, White Instruments, Furman Sound, Zeck Audio, Lectrosonics, ASPI Digital, Acoustics First, Clock Audio, Renkus-Heinz and Whirlwind/US Audio. Phone +61 2 9585 1011.

Biamp & EAV Correction

In the November issue (Page 48) we incorrectly stated that **Biamp** products are distributed in Australia by Group Technologies.

All Biamp products are actually distributed in Australia by **EAV Technology Pty Ltd**, and this partnership has been in place for the last 2 years. Our apologies.

For Biamp into, go to either www.biamp.com or EAV's local site, at www.eavtech.com.au

What will you be using soon?

New From Griven

ColourChanging outdoor floodlight released



KolorClip is a compact outdoor, colour changing fitting from Griven. Using a CDM150 SA lamp, the Kolorclip projects a bright wide angle wash effect with 8 selectable colours and white, plus black out. Inbuilt auto change or controllable via 1 channel of DMX.

Also available are the anticipated Griven KolorJet 4000W Xenon outdoor colour changer - ideal for lighting office towers and the like - and the new model of the popular Griven Imperial 4000W Xenon with blackout are available now from ULA.

• For more information on these products, contact ULA on freephone Australia wide 1800-648-111 (Overseas enquiries +61 3 9310 4999)

Automated Lights into Followspots



Upgrade to Autopilot makes system more feasible

Wybron, Inc (based in Colorado Springs, USA) have introduced the next generation of its popular Autopilot. Autopilot II is a 3-1 tracking system that turns moving lights into automated followspots that track performers in real time. Autopilot II is now "plug and play" simple, they say.

The web-based enhancements to the control software give the power to use, adjust, monitor and even diagnose system performance from a laptop. Autopilot II also has expanded memory capacity that allows users to control up to 75 moving lights.

According to Brent McPherson of Wybron, one of the major drawbacks to the original Autopilot system was that it required a skilled technician to set it up. In the US, this usually meant a Wybron technician coming out to the location. With the PC interface now on Autopilot II, any technician with a basic understanding of DMX and intelligent

lights can run through the set-up procedure required.

Other features include Autosize option - constant iris regardless of performer location on stage; Customized boundaries - Choose to freeze or fade at the edges of the performance area; Autocut option - Autopilot turns on whenever lights are powered up. Zoning option - divide the performance areas into independent coverage zones complete with automatic spotlight cross-fading.

The system uses infra-red triangulation from the transmitter pack to numerous stage receivers to determine where a performer is in 3D space of a given area. Up to four different transmitter packs can be used simultaneously on a system.

Pricing is expected to be US\$15,500 for a basic set-up. For more information contact Wybron at www.wybron.com or in Australia, Bytecraft on +61 3 9587 2555



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ACN and Ethernet ready



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Focal range spans 3 gobo wheels
f2 lens ensures maximum output at all beam angles



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LithoMotion™ gobos



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13,000 lumens
Minimal fan noise

*features vary by model

What will you be using soon?

NUMARK CM1000 MIXER



This new mixer is designed to accommodate both the professional installation market and club DJs.

The CM1000 is manufactured with very high quality audio components and advanced audio circuitry, says Numark.

Features include 12 line inputs, 4 phono, 2 mic inputs with EQ and auto ducking, fader start, and balanced outputs.

The mixer also boasts special contractor features such as EQ defeat, master gain reduction, VU adjustment, and ground lift.

Numark's CM1000 is also available with rotary controls (CM1000R). The unit is priced at A\$1599.

Contact Show Technology for more info on 1-800-646 666 (overseas +61 2 9898 1111)

NEWS FLASH!

Accountant runs nightclub

Metropolis City Concert Club (Perth) has just been sold after its liquidator ran the place for six months. Some interesting facts have emerged, namely that the club business ain't so grand when run under a liquidator.

Try these numbers for size:
Turnover \$832,645 (6 mths)
Expenses \$764,967
Balance left \$68,968

The thing to consider is that the humble profit doesn't include any return on investment or payment for capital - such as mortgage payments. The liquidator's fees were \$190,041, which came off the sale of the venue. Creditors got almost zip.

Anyway, the place was sold for A\$4.5 million, (agents fee \$67,500) and doubtless the new owners will run it at a considerably better profit.

Meyer Sound Introduces Ultra-Compact, Self-Powered Loudspeaker

The latest addition to Meyer Sound's Self-Powered UltraSeries, the UPM-2P is a bi-amplified, three-way system housed in a compact, low-profile enclosure. Capable of relatively high sound pressure levels with very low distortion, and exhibiting flat frequency response across a tightly focused symmetrical 45° pattern, the new UPM-2P is designed for situations where loudspeakers must be placed in confined spaces or immediately adjacent to reflective surfaces.

In many respects, the new UPM-2P is similar to Meyer's highly successful UPM-1P, winner of the 2000 TEC Award for Sound Reinforcement Loudspeaker Technology. The primary distinction between the two is in directivity: the UPM-1P has a broader 100° x 100° pattern, while the new UPM-2P exhibits a tighter 45° x 45° pattern. Above 5kHz the UPM-2P's focused pattern control is achieved by a deeper symmetrical horn, while below 5kHz the UPM-2P employs proprietary signal processing circuitry (similar to that in the PSW-6 Cardioid Subwoofer) that adjusts phase relationships in a broad overlap region between the HF driver and dual low-mid drivers. This sophisticated technique introduces off axis attenuation through phase interference, while the on axis response remains fully in phase for increased power

and efficiency.

The UPM-2P's highly focused pattern provides flexible solutions when greater off-axis attenuation is needed to control feedback, or to limit interference effects from nearby reflective surfaces when speakers must be placed adjacent to walls or set pieces. Although the entire UPM-2P system is exceptionally compact (457x170x196mm) and weighs a mere 7.83 kg, it contains dual

MS-5 5-inch cone transducers, a 1-inch titanium dome HF driver, two class A/B bridged complementary output MOSFET power amplifiers (225W and 125W RMS), and Meyer's proprietary phase corrected active signal processing. The UPM-2P is a three-way design: an active crossover transitions the signal from 2kHz-5kHz between the HF

driver and low-mid section, while a passive crossover rolls off the signal to one of the low-mid drivers above 500Hz. The unique design allows the full bass response of dual drivers while avoiding the off-axis combing caused by interaction of the two drivers above 500Hz—a common problem in conventional systems with similar driver configurations.

• For more information, contact Meyer Sound Australia on +61 7 3252 4433 or visit www.meyersound.com



Audio Telex Release Two New PA Amps

Audio Telex is to release two new sound reinforcement amplifiers in January 2001.

The first is an extension of their very popular ACM120 Mixer Amplifier. The new model, ACM120XL, will not replace the ACM120. It is an alternative for those projects which require more features such as 8 inputs, 3 levels of muting, 3 band EQ, in-built four tone generator, insert point, VCA control of the master output and direct rack mounting.

The ACM120XL also features a unique VOX operated relay output, which can be used to trigger a number of different devices.

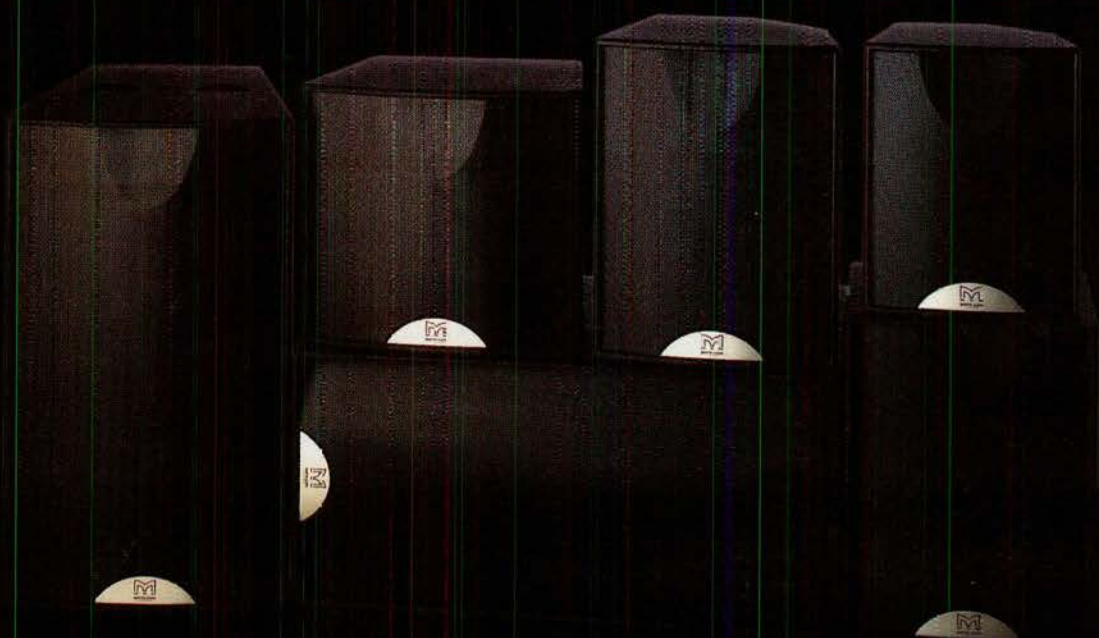
This feature would normally be used in association with an external power supply and one or more relay override attenuators.

The ACM120XL is rated at 120watts and features 100volt line, 70volt line, 4 & 8ohm transformer isolated speaker outputs.

The second amplifier from Audio Telex, the ACM120P, is a low cost mono amp with the same power values as the mixer amp. Audio Telex plan to release another three amplifiers in March 2001.

The ACM120XL is priced at A\$857, and the ACM120P is A\$576.

• Audio Telex on +61 2 9647 1411



BREAKING THE SOUND BARRIER:

FLEXIBILITY, PERFORMANCE AND PRICE

BlackLine packs 30 years of Martin Audio concert speaker design into an all new range. Designed for both portable applications and fixed installation BlackLine provides the flexibility of multi-angled cabinets, rotatable Mid/HF sections for horizontal or vertical alignment and pole, wall or flying fixture options. Engineered 'Road Ready,' BlackLine incorporates multi laminate birch ply and perforated steel grille construction, Speakon inputs and compact external dimensions.

Left to Right (clockwise): H3 Full Range 3-Way Biamped, H2 Mid/High 2-Way Active, F15 Full Range 15" 2-Way, F12 Full Range 12" 2-Way, S15 Single 15" Sub, S218 Double 18" Sub, S18 Single 18" Sub (not shown).



TECHNICAL AUDIO GROUP

TECHNICAL AUDIO GROUP

558 Darling St, Balmain NSW 2041, Ph: (02) 9810 5300 Fx: (02) 9810 5355, Email sales@tag.au.com Web: www.tag.au.com

What will you be using soon?



NEW ACTIVE POWERED NEARFIELD MONITORS FROM ATC

ATC have introduced a new nearfield portable monitor system. According to Australian distributor, TAG, this "brings ATC's legendary performance down to a new price level".

The new 2-way active powered monitor, the T16, is available individually, as a stereo monitor pair or in a 5.1 surround system incorporating four T16's, a dedicated center channel speaker plus a powered sub-woofer.

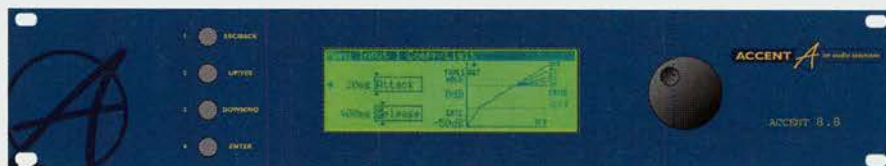
The on-board amplification provides a total of 250 watts (200±20) of continuous power and precisely matches the internal amplifiers to the high specification driver complement of 1" neodymium magnet fabric dome tweeter and 6.5" ATC soft-dome mid-bass drive unit. A single piece, damped aluminium casing forms five sides of the speaker and incorporates a heat sink, carry handle and control/connector panel. The drive units are mounted to a 18mm thick ported front baffle which also incorporates a sapphire power-on status indicator.

The control/connector panel includes an LF contour to provide +6dB bass boost for room equalisation, XLR balanced input, configurable dynamics incorporating active FET momentary gain reduction and a switchable integral power supply.

Although the standard T16 is supplied in a high gloss silver virtually any colour is available for special order.

Retail price of the T16 is A\$6,495 per pair or for the 5.1 surround system A\$27,995.

• ATC is distributed in Australia by Technical Audio Group, +61 2 9810 5300. Web: www.tag.au.com



Hacousto Accent88 Zone Paging System

Audio Telex compliment PA system distribution range

The Accent88 is from Hacousto International, a European designer of DSP audio systems. The Accent88 features 8 mic/line inputs and 8 outputs, remote zone paging microphones, remote volume and source selectors and full routing. Any input can be routed or mixed to any combination of outputs. More than 8 inputs can be used as the zone paging microphones can be paralleled in some instances, leaving the other seven inputs for standard microphone and music sources.

The system also features 16 presets recallable via front panel or contact closures and is controllable via third party control systems. The Accent 88 also features an RS232 port for software setup and RS485

data link for optional zone paging microphones and remote source selectors. Up to 31 remote devices up to 1000m away can be connected to each Accent 88. Each input features EQ, comp/limiter, and priority setting. Each output features EQ, limiter and Delay. Power inputs in the 2RU unit can be either 240V AC or 24V DC.

Designed so that the installer/designer can utilise a number of parameters such as EQ, limiting, delay, routing and presets to achieve the perfect result, those settings can then be locked - leaving the end user with user-friendly zone microphones and remote volume and source selectors.

• Audio Telex +61 2 9647 1411, or visit www.audiotelx.com.au

Stanton Add Three New DJ Products

Stanton's latest addition to its turntable range builds on the success of the company's belt-drive STR8-50 and direct drive STR8-60 straight-arm turntables.

The new STR8-80 brings more features to the table (no pun intended) with digital output, key correction, selectable +/- 8% or 12% pitch control range with quartz lock, 33/45/78rpm speed selector, instant reverse, and two motor off modes. It comes complete with a slipmat, cover, and a Craze 520SK cartridge pre-mounted on a silver Stanton headshell so you're ready to scratch straight out of the box for A\$1095.

Stanton say their S700 Dual DJCD player has the best anti-shock buffering available. They claim you can shake it above your head, turn it upside down, shake it some more and even drop it if you're game - and the CD keeps playing. The control unit displays exactly how much of the anti-shock memory



is being used and it takes a hell of a lot to make the CD skip. Other features include a realistic sounding brake, motor off and reverse play effects, all of which work off the outer jog wheel of the control unit. The pitch

control response lag free, as is the 'crossfader start' function. Priced at A\$2795

The SK-6 is a pro-quality scratch mixer with photocoupler crossfader and effects loop for less than A\$600. The photocoupler crossfader has full curve control, user replaceable faders, -26/+9db two-band EQ per channel, crossfader reverse with bi-colour status indicator, and

Stanton's eight-position Flash switch. Balanced TRS outputs are standard. Another feature of the mixer is the effects loop, which allows DJs to add depth and movement to their sets via an effects unit like the Stanton DJF-1 or Electrix Filter Factory. List price: A\$549.

• Stanton is distributed in Au by Jands Electronics - +61 2 9582 0909



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So, if you're looking for the best possible sound in a very small package, give us a call, or find out more about the almost unbelievable UPM-1P at:
www.meyersound.com.

*123dB max peak spl @ 1m
UPM-1P shown at 92% of actual size



"With the UPM-1Ps I could get the punch and clarity of the main dance floor system into the VIP lounges, and do it without battling decorators over what to do with some big, ugly boxes."

— Bill Lally
system designer,
Goddess Club, Miami

"Just two UPM-1P delays cover our back lawn section, and they give an almost unreal sense of the stage being twice as close as it is. Also, they're virtually invisible, which was crucial to preserving the natural look of the Britt grounds."

— Mike Sturges, production manager
Britt Music Festivals, Oregon

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www.meyersound.com.au

New High-Resolution Document Camera from Barco



Barco have introduced the Preca 1280, a stand-alone presentation camera and scanning device that comes with network control options.

The network connection allows storage of image data from an external PC to the Preca's PC card. It also enables the user to monitor and control every single unit connected to the company's network, wherever it is located in the world.

Equipped with a high quality 1/2.7" interline transfer CCD camera with a resolution of 1,300,000 pixels and a 15f/s transfer rate, the Preca 1280 guarantees stable, flicker-free and detailed images from a wide range of originals, including printed documents, drawings, photos, books, transparencies, X-rays, slides and solid three-dimensional objects.

The unit is equipped with two 13-Watt fluorescent long-life lamps, a built-in rear illuminated surface and a high resolution motorized 6x zoom lens and an impressive depth of field of 70 to 250mm.

It includes a wide range of operating and control switches, such as automatic iris, and power zoom and power focus function, which are conveniently arranged on the front and back panels of the main unit. On-screen menu functions, such as brightness and sharpness, white balance and color compensation are easily accessible via mouse and operating switches.

The Preca 1280 is priced at A\$19,600.

• Barco Systems Pty Ltd,
phone +61 3 9646 5833 or
www.barco.com



JEM ZR33 Released

High-output smoke machine is a new addition to the Jem range

Jem's latest smoke machine the ZR33 Hi-Mass is designed to generate large atmosphere effects in large clubs, productions and other industrial applications.

According to Show Technology, the new Hi-Mass Vaporising System provides more output over longer periods, while maintaining maximum efficiency. The 1500 watt unit can produce 1000 cubic meters of dense fog per minute with a 9.5 litre container for long operational periods.

Control options include DMX 512 as standard. The included on-board remote has an auto timer function. Coupled with the Analogue Link facility, multi-machine control is possible from a single Jem Multifunctional Controller.

Price: A\$1699.

• Show Technology, call 1-800-646 666 (overseas +61 2 9898 1111)

Peak Audio Electronics

Peak Audio have announced the launch of their new range of products

The new range includes amplifiers, mic/line and DJ mixers, and stereo system equalizers. The amp range includes:

- ST-3 (140+140W @ 4 ohms) for A\$499
- ST-5 (250+250W @ 4 ohms) for A\$699
- USA-1600 (800+800W@4 ohms) for A\$1499
- USA-1200 (590+590W@4 ohms) for A\$1299
- USA-900 (450+450W @ 4 ohms) for A\$1099

The PDM series of MIC/LINE mixers has been designed to meet the requirements of small PA systems, sub-monitor mixing, or home recording. Models include PDM-82 for A\$579 and PDM-102 for A\$669.

The PEQ-215 Dual 15 Band 2/3 Octave & PEQ-231 dual 31 Band 1/3 Octave Equalizers feature Balanced XLR & JACK outputs. The PEQ-215 has an 80Hz 12db per octave High Pass Filter while the PEQ-231 features a frequency selectable (20 Hz -200 Hz) High Pass Filter.

- Central Musical Instruments,
call +61 3 9315 2244.



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 with optional adat cards



What will you be using soon?

Numark and Korg unleash KA OSS

The EM460 is a DJ mixer with an interactive, real-time effects processor. It boasts all of the typical features found in a Numark mixer, with the addition of a built-in Korg KA OSS Pad. The mixer is suited for both mobile or installation use.

Special features include seven line inputs, balanced outputs, and fader start. The fader start feature is designed to work with Numark's most popular CD players.

The KA OSS Pad effects processing unit lets the DJ control up to sixty effects programs in real-time. The effects unit allows for sampling functions, parameter controls, and MIDI compatibility.

The unit is priced at A\$1799.

Contact Show Technology for more information on 1 800 646 666 (overseas +61 2 9898 1111)



SUPERSCOPE ARRIVES IN AUSTRALIA



Products designed for rehearsal playback are now being distributed by TAG

Superscope Technologies have appointed TAG as Australian distributor for their range of CD and Cassette players for the performing arts.

The four model range is specifically designed to assist in the learning of music or dance by enabling the speed of a recording to be varied by up to +/-50% while maintaining the same key.

Thus the transcription of lyrics or notes, the mastering of a difficult riff, or the choreographing of a dance step becomes a much easier process. By using the A-B practice loop the same section of a CD can be repeated again and again to enable the artist to perfect a performance.

PSD220 and PSD230 are both portable CD players measuring 50x250x175mm and weighing under 3Kg.

Both units incorporate +/-50% speed variation and practice loop and both can read CDR and CD-RW discs and include analogue, digital and headphone outputs with three band EQ for audio output.

The PSD220 is the ideal machine for musicians or dancers, for singers the PSD230 adds +/-one octave key transposition, a built-in speaker, an XLR microphone input and voice reduction on lead vocal tracks for

'Karaoke' type accompanying. Both units can be battery or mains powered.

Superscope's PAC750 and 770 audio systems put everything a dance studio, music rehearsal room, church, theatre or fitness gym needs in one convenient 4RU rackmount package.

Both units include a CD player, cassette player and mixer and the PAC770 offers the addition of a stereo 110w/ch power amplifier. The CD player incorporates all the facilities offered by the PSD230 with the cassette recorder providing +/-12% pitch control, auto reverse and ALC. The mixing facility has four XLR mic/line inputs plus CD, cassette and stereo aux inputs, each with a front panel gain control for simple mixing operation.

In addition the four mic/line inputs provide 'set and forget' rear panel controls for two-band EQ, pan, phantom power on/off and mic/line switch. A ducking facility can be set to automatically reduce by 15dB or eliminate the music levels when any mic/line input is active.

Remote control options for both machines include a wristwatch type IR with stop, start, pause, track, pitch and tempo controls and a wired foot pedal with play and pause.

Retail prices are PSD220 A\$1,295, PSD230 A\$1,595, PAC750 A\$2,995, and PAC770 A\$3,595.

For more information contact Technical Audio Group +61 2 9810 5300. Web: www.tag.au.com



NEW! Turn to page 65

HDR24/96. MACKIE'S NEW 24 TRACK RECORDER. WORKS WITH ANY MIXER. NO EXTRA COMPUTER OR SOFTWARE NEEDED.



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- | \$10,995 RRP (inc GST)

The Mackie HDR24/96 is the only recorder with built-in nondestructive graphic waveform editing. Just plug in a mouse, keyboard and SVGA monitor to view all recorder parameters on screen in real time. Enjoy complete editing control with unlimited levels of undo, drag-and-drop cross-fades with 9 preset combinations, plus fade/crossfade editor. And look forward to DSP time compression/expansion, pitch shift and lots more!

The HDR24/96 uses Ultra-DMA hard drives, so affordable that you can keep one for each project - over 90 minutes of 24 Track recording on a single drive! Experience the latest in Digital Recording the HDR24/96, NOW SHIPPING!

HDR24/96 editing features include 8 takes per track with nondestructive comping, nondestructive cut/copy/paste of tracks, regions or super regions, drag-and-drop fades and crossfades, 1x/2x/4x/8x/24x waveform views, true waveform editing with pencil tool, bidirectional cursor scrub and unlimited locators and loops...with unlimited undos - but without requiring an external computer! Coming soon: DSP time compression/expansion, invert, pitch shift, normalise and much much more.

Use the HDR24/96 with any analog or digital mixer or link it to our Digital 8-Bus desk.

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What will you be using soon?

AC Series BNC 75ohm Released



Connectors aimed at the installation market designed for use in XLR type panel mount holes

Amphenol Australia have announced the release of the AC series BNC 75ohm receptacle connectors.

The new design features an Amphenol BNC adapter mounted in the AC series receptacle, ensuring a rugged flush mounted product.

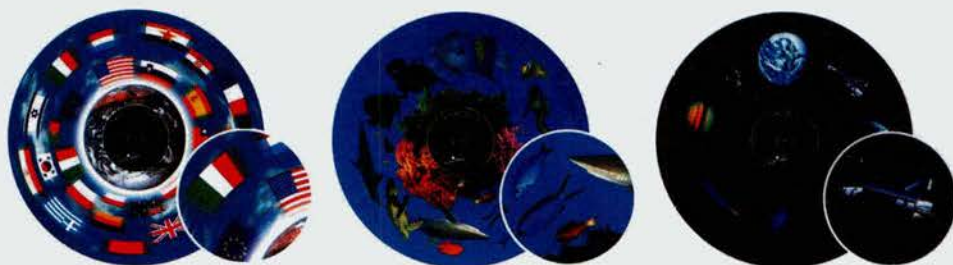
Designed for broadcast, video and other applications that require impedance matched performance. The connector is completely isolated from ground.

The industry standard 'D' series XLR panel housing provides the installer with the convenience of having standard metal work cut-outs, for both XLR and BNC connections.

Coupling methods include the standard bayonet lock or Push - Pull connection that mate with all standard BNC plug connectors. Available in standard Nickel finish or optional Black

For details of your nearest Amphenol stockist, contact Amphenol on +61 3 8796 8888.

CLAY PAKY GRAPHIC FILM EFFECT



Further refinements to disc projection make 'user designs' easier to produce

Clay Paky's Graphic Film Effect makes it possible to project subjects of different types (patterns, images, messages) developed through 360°, thereby providing a panoramic view.

The Graphic film is composed of a photographic film enclosed between two discs of 130mm diameter and mounted on the graphic film accessory. As the film is made of the same material used for the long-life slides, the accessory can only be used on V.I.P. 300 DIA and V.I.P. 150 projectors.

Clay Paky has a certain number of standard discs, while customised subjects can be made to the customer's design using the conversion from digital to photographic and printing to slide film services offered by professional

laboratories.

Clay Paky has a vast range of gobos and graphic films, illustrated in the relevant catalogues. In addition, it provides a qualified service for making customised supports - gobos, graphic films, slides - made to the customer's order, drawing or guidelines.

Thanks to the "standard" dimensions used, the user however is free to choose graphic supports from catalogues of other manufacturers, further expanding the range of resources available.

A variety of standard films are available from Clay Paky. Rotator Price: \$399 inc GST

• **Contact Show Technology for more information on 1-800-646 666 (overseas +61 2 9898 1111)**

High End Systems Release New Software

An upgrade for stand-alone effects control in High End automated lights in now available

High End Systems Inc have announced the software development of a new feature for its line of automated lighting products. Called Internal Effects, the feature allows an endless selection of pan and tilt movements to be accomplished with even simple control systems. The present Macro channel is used to support and control the selection of Internal Effects.

The software is made available for download through the High End web site. Once the software is loaded into the fixture, the existing Macro channel becomes converted into the new Internal Effects feature.

Internal Effects allows the programmer of High End Systems lighting to select a pan, tilt or circular effect for pan and tilt based on the last programmed position of the product. It is possible to create many different automated movements from just one preset position. It is also possible to run Internal Effects while changing from one preset position to another.

The feature may also be used with lighting desks such as the Flying Pig Systems'

Wholehog II, which contains an on-board Internal Effects Engine. The two Internal Effects systems may be superimposed to give an endless possibility of pan and tilt movements.

The Internal Effects themselves have a default change rate of 2.5 seconds between movements. Further control of the change rate can be done with the fixture's M-Speed channel. Internal Effects affects the operation of all High End Systems products similarly.

The new feature is also accessible from the on-board programming system of High End Systems lights carrying this feature.

Products that can be upgraded now are Technobeam-i, Studio Color 250, Studio Spot 250 and Studio Beam. Software upgrades for following fixtures are said to be available soon: Technobeam, Studio Color 575, Studio Spot 575 and Studio Spot CMY.

• **The High End Systems web site is at www.highend.com. High End is distributed in Australia by Bytecraft Pty Ltd ph +61 3 9587 2555**

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 **ArchiVision**

What will you be using soon?

THE KING DOME



Martin releases outdoor protection for its range of lighting

The Martin King Dome is a convenient, inflatable version of Martin's Outdoor Protection Dome and it is IP 44 rated. Made of sturdy, non-flammable PVC film with a solid base of ABS plastic, the King Dome is ideal for rental companies and events where easy transport and simple set up and storage are essential.

The King Dome allows the entire colour, effects and movement possibilities of Martin luminaires to be utilised in any environment.

Unique to the King Dome is a safety device that cuts power to the fixture in case of deflation. The King Dome is available in two heights of 80 cm and 120 cm, and a 3 metre semi-transparent white envelope is will soon be available for use as a lightpipe effect.

King Dome Base A\$2299 (trade price)

80cm Envelope A\$399 (trade price)

For further information, please call Show Technology's Martin Product specialist Phill Buckley on 1-800-646 666.

New Effects Lighting Products From ULA

ULA have added to their range of cost effective effects lighting with four new products to start 2001.

Infinty Boogie is a compact dual flower effect, with each 12V 50W lamp operating inependently, producing twisting and flashing sound-to-light. Priced at A\$320

Infinity Fiesta - Ideal for those with special occasions in mind, Fiesta incorporates theme gobos ("Merry Xmas", "Happy Anniversary" etc) which are selectable via on board switch. Sound-to-light rotation of gobos and colour Priced at A\$477

LightSplash Moving Revolution - The latest edition to the popular and economical LightSplash series. Revolution twists Sound-to-light while beams reflect of its mirror barrel. Priced at A\$279.

Outdoor lighting:

The CM50IP has been added to the AVR Colourmaster range of products. A resilient low voltage outdoor colour changing down lighter, the CM50IP uses the same systems components as the CM50 - the CMD16 Drive box and either DMX or analogue control. Priced at A\$599.

For more information, contact ULA on freephone Australia wide 1800-648-111 (Overseas enquiries +61 3 9310 4999)



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Who is doing what?

Studio Master Classes seek out new elite

Does lack of A-list producers and engineers sends projects offshore?

(Continued from page 7)

"I think the main problem is that record companies purposely seek overseas producers rather than staying loyal to Australian based producers and therefore building up the industry"

**- Shane Fahey,
Megaphon Studios**

Feedback: Is there a lack of A-list producers and engineers in Australia? Have your say! Email: mail@conpub.com.au

For more information about Master Class contact Catherine Hutchison on +61 3 5784 3263 or iam@ancc.com.au

opportunity to discuss key technology and to share techniques.

One of the organisers, Catherine Hutchison describes the industry's response to the classes as "very supportive". According to Catherine, the local industry has welcomed the opportunity for external analysis.

"There aren't any egos involved. It's not about the Americans coming out to tell our industry how to do it their way. It's an opportunity to work with others who have worked on major recording projects and to share techniques and experiences as peers."

Both Wanchic and Plotnikoff are considered A-list, having worked with the likes of Mellencamp, Bryan Adams, Kiss and AC/DC. Catherine says the "lack of A-list producers and engineers in Australia" is resulting in more and more projects and artists recording overseas or bringing international producers out to Australia to work on local projects.

Shane Fahey from Megaphon Studios agrees that more overseas producers are visiting and working in Australia.

"I think the main problem is that record companies purposely seek overseas producers rather than staying loyal to Australian based producers and therefore building up the industry. But there's nothing wrong with getting some help and sharing ideas so Master Class could be good for that."

Suzanne Hill from Festival Studios and Mastering also agrees that there are lots of

world-class producers and engineers in this country, and raises the point that not every project can afford an A-list producer.

"The majority of artists recording these days are between 16 - 20 so they really can't afford so-called A-list producers and engineers to work on their projects. We don't have the financial situation that most bands and artists can afford to work with them.

"Courses like this are a good idea, except if current engineers and producers decided they are A-list after doing it, put their rates up and then no-one can afford to hire them."

Marco Betelli, General Manager of the School of Audio Engineering (SAE) believes A-list status is based on experience and working in highly professional environments.

"That's what was missing in this country in the past. But now with studios like 301 and many others, that gap is closing, because we now have world-class recording facilities in Australia which hopefully will bring in a lot of work, and more importantly, keep more Australian projects here.

"The most common thing I hear from students is as soon as they have finished their course they want to go overseas because that's where they will get their big break. We have got to work on that attitude."

Marco hopes the Master classes will inspire the industry into a new confidence in itself.

"I think it's based on confidence more than anything else, because I believe there are a lot of quality people out there, but for some strange reason Australia is always considered the underdog compared to other countries, which is just not the case."

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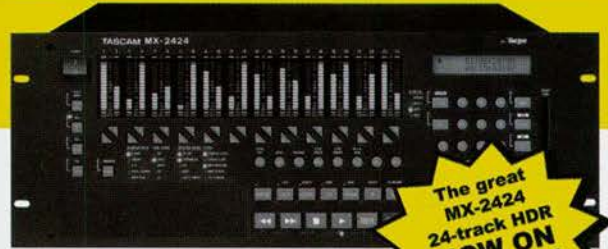
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Who is doing what?

Singles sales crumble under MP3 assault

Emmanuel Candi on the state of the music recording market

(Continued from page 7)

Morality and audio CD's

Got a moral issue with burning prerecorded music onto your own CD? Many people have.

The major recording companies fixed that problem years ago for you. All you need to do is buy a Hi-Fi CD audio burner, take it home, and try to burn music to a standard CD-R blank. Gosh-damn. It doesn't work.

You stare in frustration at the owner's manual, and find you need a CD-Audio blank, on which the copyright has been paid. These cost about a buck and a half more than common CD-Rs. Some brainiac has figured how to distribute the copyright component of the price of the CD blank to the artists of the world. Cool, huh?

On the other hand a ubiquitous PC CD burner will happily copy any CD onto any CD-R blank.

• The CD-A disk works on any CD player, as will a CD-R disk that has been audio formatted.

-Julius Grafton

However, a downturn of around two per cent in the overall sales of singles highlights the impact of MP3 on the market. The sheer quantities of artists that can be downloaded for free through sites like Napster, and the low cost of recordable CD's has translated into consumers buying less CD and cassette singles in favour of burning their own. Vinyl singles continue to sell well, propped up primarily by the DJ and clubs market.

"I don't think there's any doubt about the impact of MP3 on overall sales. One of the reasons we're having subdued growth is because of the massive haemorrhaging through the internet and piracy. It's costing us a few points (minimum) in growth each year. As an industry we could be a lot healthier, but while the internet continues to be a cess-pool of looting and stealing this will be the case for the next few years until we can clean it up."

Now, over two years since the introduction of parallel importing, Emmanuel says the full impact on the industry has been numbed by the low value of the Australian dollar.

"The impact has been exactly what we predicted - if the dollar is low the import activity can't occur, even though Alan Fells and various people from the government and the media promised it would, because it just doesn't add up. What can be imported is pirate product and product from third world countries which have little or no royalty components and also have low sales tax

components. So piracy has gone up and imports from third world countries have gone up, and there hasn't been the importation of dirt cheap product from the United States and there can't be until the dollar is much higher than it is now.

"The good thing is that with the low dollar the local record industry has been able to push forward, continuing to provide as much service as they can in finding local artists, and they've been able to have success with local artists."

Emmanuel compares the recording industry to farming in terms of the importance of the value of the Australian dollar on exports.

"We are a little bit like the farmers now. When the dollar is low we say great, this is good, and if the dollar starts creeping up - and it would have to be a lot, to get into the high 70s and 80s - then the industry prepares for some bad crops like a farmer would."

The plummeting of the Aussie dollar almost immediately after the parallel importing law was changed was fantastic for the local industry and for people who work in the industry, explained Emmanuel. Consumers are still getting good prices, great range, top new talent and a lot of promotion.

Emmanuel describes the current attitude in the industry as "cautiously positive".

"The record industry has very much excited the market with its new product, particularly new Australian product and while the dollar is low, plans are to keep going. So I think it's great, especially our export success.

- Mandy Jones

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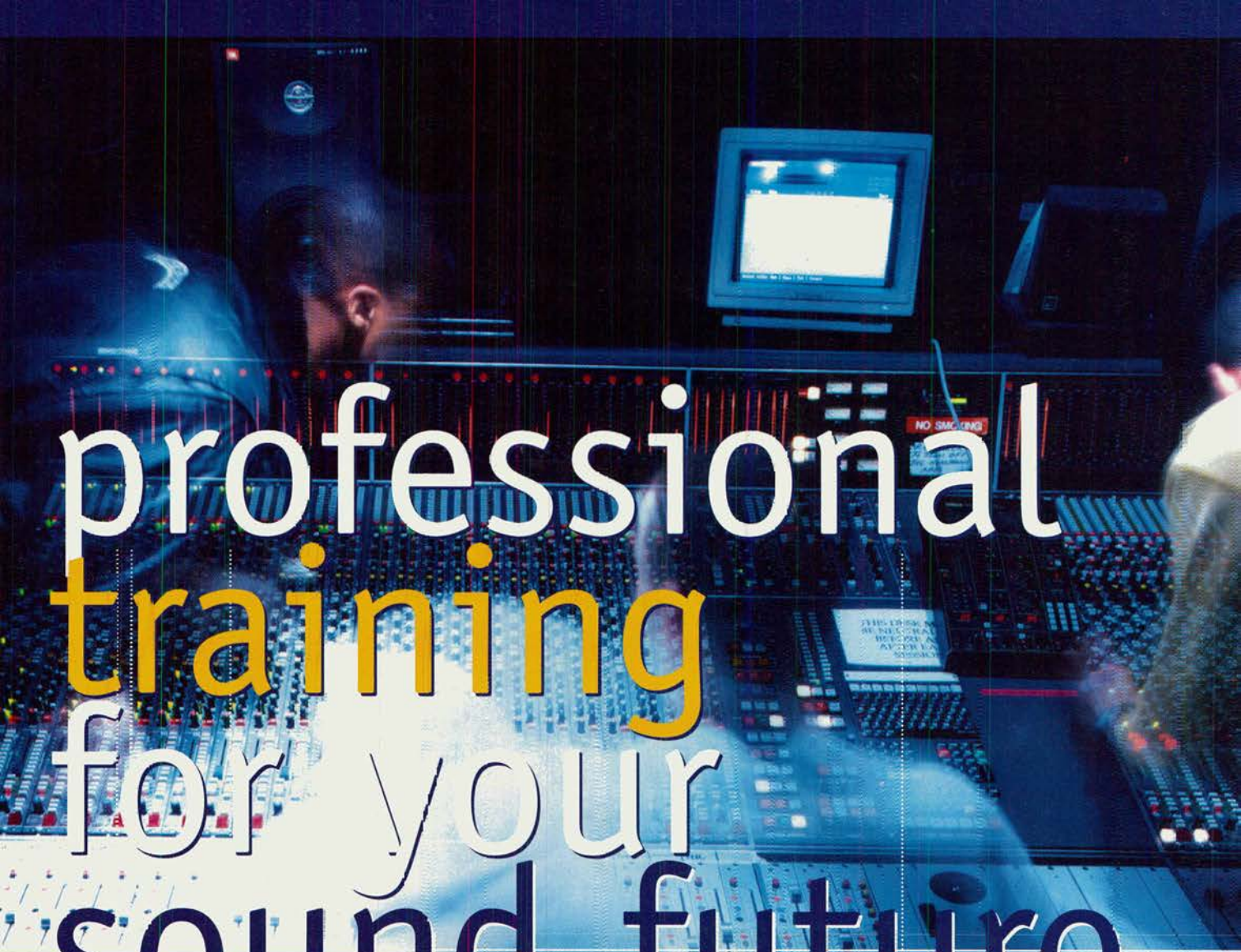


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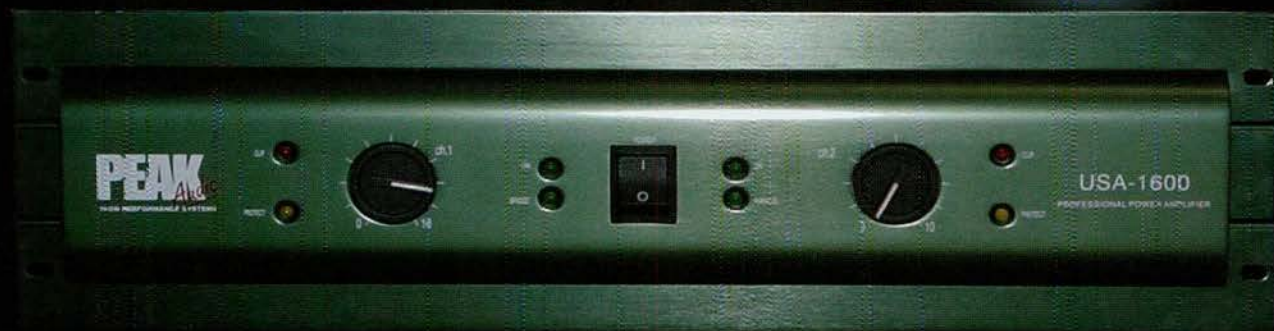
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The coathanger gig

Blowing up the bridge

From page 9

The show tape consisted of four Tascam DA88s and another three running as backups. The playback audio was mixed on two 16-channel mixers, and the whole lot was run on uninterruptible power supplies. A GPS Satellite clock provided the timing.

The show tape was compiled with a 3min pre roll both for the 21:00 & 00:00 show. The Pre-roll was required because the tape needed a good 1min to sync with the others in slave and 2min for Verbal standbys for all pyro operators. The voice cues were also recorded on separate tracks. The voice tracks were broadcast via a constant transmit broadcast at 25 watts and was in direct line-of-sight from the control room rooftop to the harbour. The other tracks on the tape consist of stereo mix, SMTPE time code and FIRE ONE time code for pyro.

A Micro Matrix System provided by Murray Tregonning & Associates managed communications for the event. This allowed the production staff a simple way to use any of the communications formats without changing headsets.

Apart from communicating with the crew, the production team was linked via radio and landlines to the City of Sydney operations centre. The Operations Centre had direct communication with the RTA and the Sydney Police Centre.

Lighting The Federation Star

Up on the bridge a few days before the event, an installation team from Bytecraft were busy working through the night, preparing and plotting the lighting effect of the Rainbow SPIRIT over the federation star.

Pre-production involved a considerable amount of wiring patch boxes that would allow simple and reliable connection and patching of the 200 or so circuits of lights required to run the effect. Six of these patch

boxes were connected to touring dimmers. The dimmers were stacked in equipment racks and surrounded in a special weather-proof soft cover.

Getting the equipment onto the bridge proved quite a task by itself, with riggers using the bridge's crane to bring the equipment up from the ground. As the gantry on the crane is raised on a single wire (to allow the gantry to turn in under the girders for maintenance), lifting the equipment is a complex process of balancing loads and manipulating guidelines to keep the rig from hitting the bridge. They had to be particularly careful when working in front of the centre-piece lighting effect as the rope light was secured to the frame work with cable ties.

Power for the dimmers is taken from the power rails on one side of the bridge that drive the crane. There are two power rails on each side of the bridge, and this time power was drawn from the two north side rails. This was done after last year's "Eternity" sign turned into "nity" at 4am when the crane de-rigging the fireworks ran over the power cable on the south-east quarter.

The system was controlled by a Strand 530 desk, which was rigged on the west side of the bridge (away from the fireworks which all fire from the east side), and enclosed in a protective plastic tent. A full console was used because tweaking of the final effect was happening right up to the previous evening, and there was not enough time to find a decent alternative real-time DMX recorder that would do the job. The console needed to be used on tracking mode so the effect could be modified easily.

Connections was told that actually operating the desk during the fireworks was a bit hair-raising, with hot ash falling and the pin pulled on the fire extinguisher. We were surprised that there was any hair left to raise.



Bytecraft's bridge team (Clockwise from top left) Paul Rigby, Paul Mulcahy, Justin Harper and Geoff Kelly



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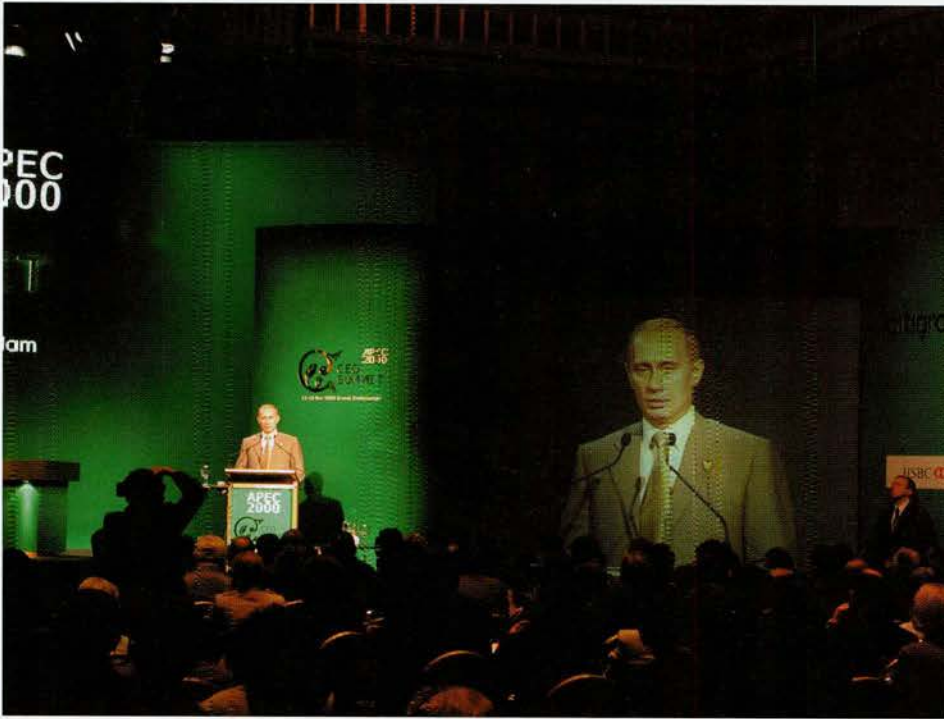
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Perth company Corporate Theatre won a contract to do the ultimate stress inducing show, and make it work in an excellent fashion. We need more heroes like these guys!

Julius Grafton reports

Perth based company Corporate Theatre won a super prestigious, risky, secretive and sensitive contract recently, supplying staging and production for the leaders of the world.

The 2000 Asia-Pacific Economic Cooperation (APEC) CEO Summit in Brunei included the world's major political leaders, including Bill Clinton, Vladimir Putin and Jiang Zemin - the President of the People's Republic of China.

Corporate Theatre was responsible for the stage design and styling together with the technical direction as well as providing audiovisual and presentation services for the event. Over two tons of equipment, together with Corporate Theatre's production team flew into Brunei from Perth with a brief to produce the event to world-class standards - consistent with the APEC way.

Corporate Theatre's work was specifically set aside for recognition by the White House who presented Managing Director, Vaughan Emery with a special certificate of appreciation for specialist technical support provided for US President, Bill Clinton's keynote presentation which was beamed around the world.

Interestingly, the President of the United States of America travels complete with a full technical team plus his own purpose built security lectern. Called the "Blue Goose", it has a redundant battery powered sound system in the event of power failure, and a separate and independent archival

videographer to record his presentation.

The Blue Goose weighs in at some 350 pounds and was flown in for the Summit in a custom-built roadcase the size of a large fridge. The roadcase generated a few wry smiles from the crew reading the address placards: "If found, postage will be paid on delivery back to the White House".

President Clinton is a tall person, 6'3", and the lecterns are custom built for each President. They are deceptively larger than you think. Twenty-two of these lecterns are located around the world ready for use as required.

The 3-day Summit engaged the full production services of Corporate Theatre. Prior to the Summit Corporate Theatre's Managing Director Vaughan Emery and General Manager Geoffrey Swan undertook between them four site visits to design the staging, lighting audiovisual, multimedia and set requirements for the event.

The venue for the Summit was the ballroom of the recently opened Empire Hotel and Country Club. Vaughan Emery said the best way to compare the Empire is to think of the best 5 star hotel in Bali and then multiply the experience by 2. The scale and style of this new facility is simply staggering - a fact not lost on US President Bill Clinton who, after his address to the Summit, sent his security people into a spin when he and daughter Chelsea suddenly decided to undertake an impromptu and unplanned walk in the gardens.

Vaughan Emery, from his headquarters in Perth, has worked on numerous international conference events in North America, Asia and throughout Australia, said that as with any conference event of this magnitude the devil is in the detail. When planning events of this status it pays to have a mindset of being untrusting of installed audiovisual or multimedia systems. Payment and Corporate Theatre's next engagement is based on maintaining a reputation for creating faultless speaker support which must flow seamlessly even when literally last minute content amendments are demanded by speakers.

To achieve this is in an environment where speakers of this calibre can change their entire presentation, format and production requirements moments before they step on stage, you have to know exactly how every data, audio and multimedia signal path is routed, processed and switched to efficiently effect the changes. And it is for this reason the firm brought in every piece of AV and multimedia equipment from Perth. The only item Corporate Theatre didn't bring was the stage



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Mega Stress!

To cover for any data failure, the system was configured so that each projector was also cabled to accept a composite video source of the same programme.



set. While it was designed in Perth, the stage was built in Brunei.

In order to maintain theme continuity, multimedia elements were created by Corporate Theatre to reflect the symbols and artwork used in the Summit material. These were presented as session starters and at coffee breaks to provide a consistent pattern throughout the three-day event. Speaker's title slides were also created as moving multimedia using the same style elements and typography.

The Ballroom features a 10 metre high ceiling and was originally intended to be used as a private Nightclub. As a result, the lighting design was based on a battery of moving lights, which were totally unsuited for conference use, and in this case, television broadcast. After some negotiation these were replaced by a 3 bar parallel truss rig, which included 10x 10deg ETC Source 4, 10x 1kw Altman Fresnel's and 4x 0.5KW Fresnel's. Set practicals included an internally illuminated head table and giant rear lit Summit logo - which created a great mood.

The audiovisual control was integrated with the requirements of Radio Television Brunei (RTB) who covered the event with

four cameras via a flyaway studio built into a chair stall behind the ballroom. RTB then provided fibre and microwave feeds to the international media centre, which was located across town and set up for the 1000 plus journalists covering the APEC events for the various networks around the world.

Vaughan Emery said the RTB team were excellent and we were able to take a split from their flyaway studio for our own image magnification of the speakers, conveniently negating our need to bring our usual CCTV system that is employed for this purpose.

Data control was primarily based on a combination of Extron and Analogue Way switchers and amplifiers, with signals provided to the two 12' x 9' screens built into the set and two on stage fold back data monitors as RGBHV. This required upscaling all video presentations to provide seamless, glitch-free switches from any computer, camera and VTR source.

To cover for any data failure the system was configured so that each projector was also cabled to accept a composite video source of the same programme. This dual configuration also meant that it was a simple matter for Royal Television Brunei's RTB's studio

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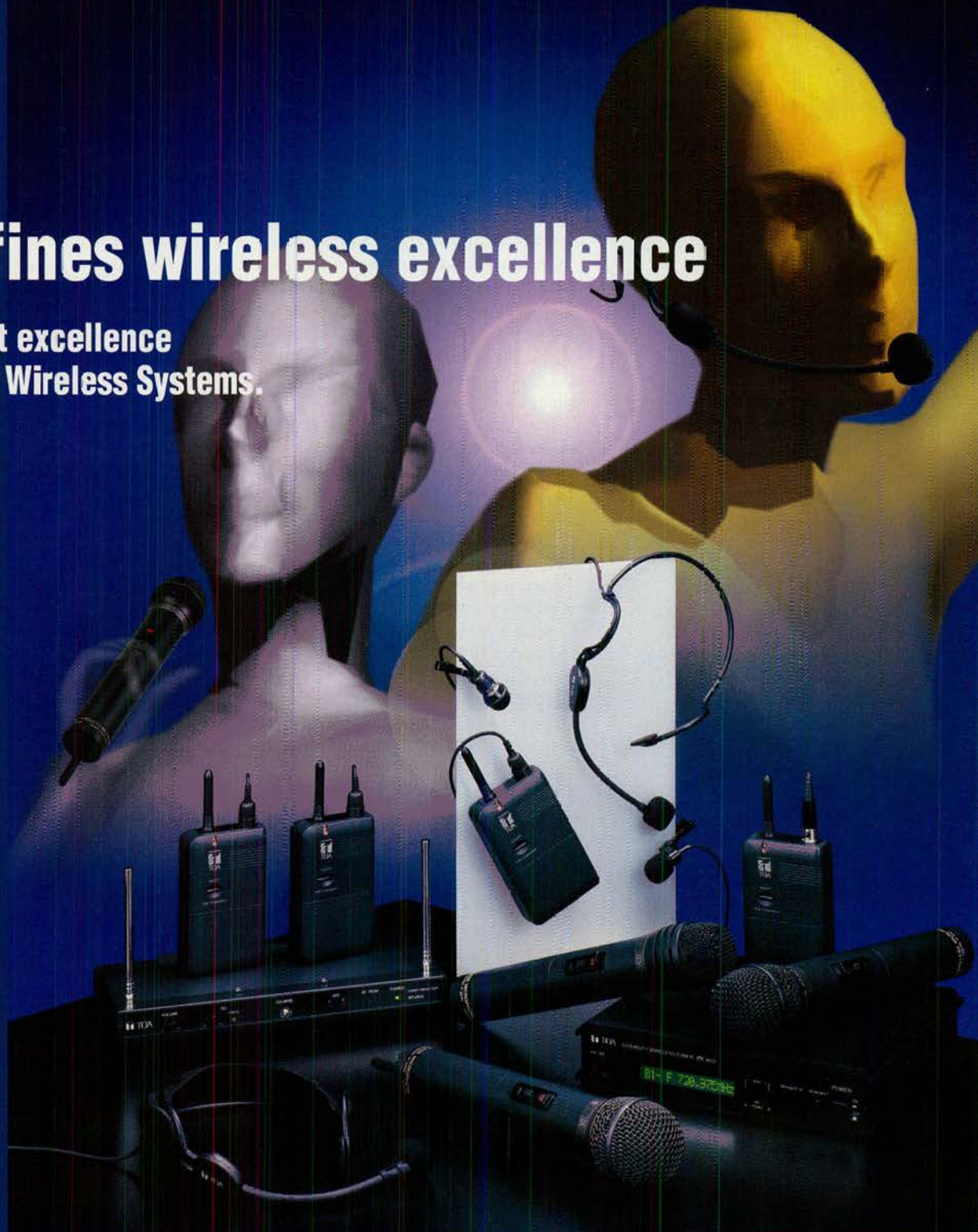
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Ultra high risk



The Corporate Theatre team from Perth working on the APEC CEO Summit in Brunei included:

- Vaughan Emery** - Producer
- Geoffrey Swan** - Multimedia design and operation
- Kevin Angel** - Audiovisual control
- Peter Riegeirt** - Audio Engineer
- Chris Stace** - Lighting rigging and operations
- Chris Kern** - Audiovisual technician and operation

producer to insert into their coverage of the Summit, any of the computer data being used by speakers to support their presentation.

Corporate Theatre was also contracted to direct the opening ceremony of the APEC CEO Summit at the Brunei International Convention Centre, which was officiated by His Majesty, the Sultan of Brunei. Protocol and respect for sovereignty were key considerations in this aspect of the event. Corporate Theatre produced an extensive moods and images multimedia presentation, which utilised images of Bruneian people, customs and business industry for presentation to the Summit delegates and local government officials who were present at the opening.

Peter Riegeirt, an established sound engineer in Perth, handled the audio. Corporate Theatre has developed a preference for using Shure MXSM 418s for lecterns - they're crisp and very forgiving especially when speakers hang back from the lectern or turn to address the their slides on screen. A BSS DPR 402 compressor was inserted over each pair of the MX418s followed by a White analogue EQ.

The curved head table was especially built as a furniture piece for the occasion and contained 6x CAD 115 mics for the panel style question and answer sessions. Front of house boxes were EAW LA235 and LA118 driven by Crown amps. Foldback wedges were discreetly laid in behind the head table and twin lecterns. A 48-way active microphone split inserted prior to the FOH mixer ensured that the microphone, all audio sources and all signal destinations were fully isolated.

As a general rule, sound for conferences is not complicated - apart from the inevitable problems of eliminating the ground loops, which seem to occur when too many people require an audio split or too many unbalanced playback devices are used.

On this occasion, all the mics had to satisfy the RTB feed requirements, remote media centre and the in house press pool for the network journalists following the world leaders. In the case of the US President, some 64 direct separate isolated feeds were required and made available in the Hotel.

Amazingly the White House sound team still insist on using twin SM 57 microphones. As mentioned earlier the twin 57's are fitted using custom-built shock mounts. A BSS Varicurve parametric C9 was inserted over the 57s to provide the necessary fine control into the (Blue Goose) security lectern.

A technical rehearsal the night before ensured that the Presidents' sound levels, foldback and feeds back to the White House were to specification (we were told he apparently is slightly deaf in the left ear).

While the Presidents of Russia, China and Chile all spoke with distinction it became apparent what a truly gifted communicator the former US President is, moving effortlessly from laconic humour to serious dialogue that lifted the distinguished audience to their feet at the conclusion of his address.

• *Corporate Theatre and its team have established a formidable reputation over the last 11 years staging international conventions and financial symposia throughout Asia and Eastern Australia.*

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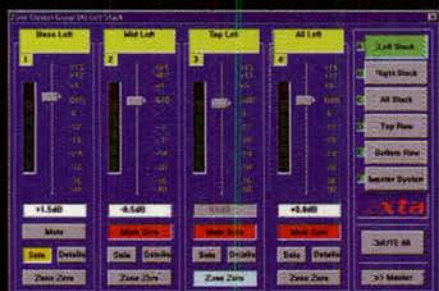
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INSTALLATION PROJECTORS

Our market report on installation projectors covers a very wide range of projectors. When we asked the distributors to send us the information contained in this report, some sent us back data that was clearly about portable projectors – which will be the subject of its own market report due to be published later this year.

These projectors have been included anyway because there is no clear definition between “installation” and “portable”, and there is some justification for installing projectors originally designed for portable use.

While some projectors released internationally take time to filter down into the Australian market, all of the ones listed here should be quickly available from the listed distributor. You will be able to find the full list at the end

of the report.

This snap shot view of the market clearly shows the trend towards XGA resolution as the base standard. Also, ANSI lumen levels at the bottom end of the market have risen to an average of around 2000. These levels are still rising as lamp manufacturers continue to build brighter and more efficient lamps.

As with all of the market reports, the claims written here are the (edited) words of the vendor and should be taken with a small grain of salt. Before you make your choice, get one the units into your venue to check it out – side by side with other choices if possible.

Manufacturers were all asked to indicate which model was their “Hot Seller” and why. **By John Grimshaw.**



Barco ELM R12

Barco ELM R12

The BARCO ELM R12 range of projectors is based on three-chip, DLP optics. Equipped with soft edge matching and capable of single or multi screen images, the digital television ready ELM R12 is a great tool for high demanding applications. The ELM R12 has an extremely powerful, state-of-the-art optical system driven by a high performance Xenon lamp, delivering 12,000 lumens.

The ELM has a native resolution of 1280 x 1024 pixels and is compatible with all Video and HDTV signals as well as with high-resolution computers and workstations.

Other features include True Colour Reproduction (TCRPlus) processing for colour uniformity and fidelity, reducing noise in the projected video image and improving the contrast ratio. A loop-through Serial Digital Input (SDI) provides an all-digital path from external sources directly to the projector's DLP.

- Price \$240,000

Barco BarcoReality 6500



“We are excited by the extremely fast evolution in technology and the tremendous performance increase we have made on the BarcoReality 6000 platform. If we would have told the market two years ago, we would be able to reach this extreme light output with a projection unit this small, they would have never believed us.”

Barco BarcoReality 6500 **HOT SELLER**

Combining an impressive 5,500 lumens and a native S-XGA panel resolution in a small and silent design, this projector uses 1.8” S-XGA polysilicon LCD panels with Micro Lens Arrays (MLA). Based on a new efficient 600 Watt lamp, the matching of all optical components in the projector design, the BarcoReality 6500 delivers brilliant images with vibrant colors. Input signal connections include Video, S-Video, RGB, VGA and SDI/SDO. There is also an optional FireWire input. The projector can display all sources from VHS video to the latest HDTV formats to high-resolution workstations up to 2000 x 1280 pixels.

- Price \$55,000

Barco SLM G5 “Performer”

A 3-chip XGA DLP, 5000 ANSI lumens projector designed for mid-range staging, rental and other demanding environments. Using Pixel Map Processor provides compatibility from Video and HDTV to high-resolution computers and adds enhanced video performance. Sealed optics significantly reduce

maintenance costs and allow the projector to be installed at events, where smoke generators are used. True seamless switching enables smooth switching between sources with or without transition effects. A wide range of click-and-play lenses are available with a throw ratio ranging between 0.8 and 8 times the screen width. Two or three units can be directly stacked or flown using a chassis-interlocking feature.

- Price \$87,000



Elmo EDP-6200

This projector is an 1024x768 native resolution LCD projector. Able to project resolutions up to UXGA at 1900 ANSI lumens, the projector comes with remote mouse feature as standard, an Electronic Magnification feature and remotely powered zoom and focus. The standard lens is a 15mm-62.9mm lens, and an optional optical tele-converter is available as an accessory (increasing the focal length by 1.3x)

- Price \$11,500

Epson EMP7600 **HOT SELLER**

The EMP-7600 is a 2200 ANSI lumens true XGA projector capable of supporting signals from VGA to UXGA resolution. It will handle all the current worldwide video formats, and offers



Elmo EDP-6200

two computer inputs, one of which can be digital. The second input can also be used as a component video input - allowing inputs to be composite, s-video or component. A monitor re-drive connection also allows presenters to daisy chain a standard monitor as a presentation aid.

A new 200W UHE lamp helps to give a bright, vibrant image suitable for desktop or permanent installation use. An easy bayonet fitting makes it simple to fit an optional long throw or wide zoom lens, and makes the EMP-7600 supremely versatile, able to create the right impression in almost any room size.

- \$13,530

Epson EMP8100

The EMP-8100 is next generation lightweight, ultra bright, high performance projector suitable for both permanent installation and demanding portable users. It is a true XGA resolution ultra high brightness projector incorporating a newly developed TFT panels and an UHE lamp to produce an ultra bright 3200 ANSI lumens, making it ideal for high-end graphics, military or other crucial presentations. It is equally at home whether used in classrooms or conference rooms or as a high-end installed projector in boardrooms or auditoriums. The EMP-8100's manual lens shift capability and digital keystone correction enables up to three machines to be stacked together or four to be used collectively - each unit responsible for a 1/4 of the final screen image. The colour temperature may be adjusted to ensure a unified projected image.

- \$22,058

Epson EMP7700

The EMP-7700 is a 3000 ANSI lumens XGA projector, with a noise level of only 38db. A new 200W UHE lamp and a high aperture panel ("Dream Panel") increases the brightness. With its improved brightness and image quality, the EMP-7700 moves desktop XGA projectors to a new dimension. A reduction in noise level and optional lenses to cover most installation demands, make the EMP-7700 the ideal XGA premium desktop or easy installation projector. Supporting all worldwide video formats, the EMP-7700 also offers two computer inputs, one of which can be a digital input. The second computer input can also be used to support component video - allowing video inputs to be composite, s-video or component. Using Epson's third generation DAR (Digital Active Resizing), the projector is able to display high quality VGA, SVGA, SXGA and UXGA images - ideal for engineering workstation applications. Lens replacement is even easier than in previous models making the EMP-7700 perfect for the simple installation market.

- \$17,575

Epson EMP-9000

The EMP-9000 is a lightweight, high bright, high

performance projector ideal for both for permanent installation and for use as a high-end portable. It is a true SXGA resolution high brightness projector. New high aperture 1.3" LCD panels together with Micro Lens Arrays (MLA) and a new 220W UHE lamp enable it to produce ultra bright 1700 ANSI lumens, making it ideal as a high-end installed projector in boardrooms or auditoriums for high-end graphics, military uses or other crucial presentations. A manual lens shift capability enables up to three EMP-9000s to be stacked together to produce an outstanding bright image of nearly 4800 ANSI lumens, or four can be used collectively - each unit responsible for a 1/4 of the final screen image. The colour temperature may be adjusted to ensure a unified projected image.

- \$29,400

Fujitsu LPF 4200

The LPF4200 is a light-weight 3.5kg that came into the market at the end of January. It is a 3 panel 0.9" LCD projector that can output 1,500 ANSI lumens using its 150W EHP lamp. The projector has a throw distance from 1.1 to 10m, and has a projection screen size from 23 to 249 inches

- \$9,900

Fujitsu LPF 7200 and 8200

The LPF7200 and LPF8200 are both three chip LCD projectors with 2,800 and 2,500 ANSI lumen outputs respectively. Both have key stone adjustment, a resolution of 1024 x 768, and built in scaling that will handle vast majority of standard resolutions.

Both models can be front or rear mounted.

- \$15,592 and \$16,186

Hitachi CP-S860

This multimedia LCD Projector has 1,700 ANSI Lumens output, with True S-VGA resolution of 800 x 600 colour pixels; Picture-in-Picture function allows images to be displayed in a sub-picture window. With two RGB inputs, Digital Keystone Correction, Motorised focus and a weight of just 5.9kg.

- \$10,295

Hitachi CP-X970

This multimedia LCD Projector has Extra bright 2,200 ANSI Lumens output, with True XGA resolution of 1024 x 768 colour pixels; Picture-in-Picture function allows images to be displayed in a sub-picture window. With two RGB inputs, Digital Keystone Correction, Motorised focus with dimensions of 289 x 119 x 345mm and a weight of just 5.9kg.

- \$15,995

InFocus LP770

2000 lumen output and true resolution of 1024 x 768. Intelligent compression for SXGA and resizing of all other images - will handle any

Epson EMP7600

"The best seller of the four is the EMP7600. Corporate users are now demanding a minimum of 2000 ANSI lumens in their boardrooms and the EMP7600 delivers 2200 at an extremely attractive price."



Epson EMP8100



Fujitsu LPF 4200



InFocus LP770

Installation Projectors



InFocus LP925 & LP930

"LitePro 930 - The latest in the line of installation projectors from InFocus Corporation, the world's leader, the LP930 is the brightest, quietest and most compatible projector of it's kind. Manufactured in the US to the highest standards possible, the LP930 is ideal for boardrooms, lecture theatre or auditorium installations. 3200 lumens and ultimate connectivity. And though they might look, finding this quiet cannon among white ceiling tiles is as hard as finding a better projector."



JVC DLA-G3010Z

"The JVC DLA-G3010Z provides an affordable, high quality solution for users who want to meet the growing demand for S-XGA resolution - The world's smallest, lightest S-XGA resolution capable projector."

resolution. Under 6 kg's, ceiling and desk mountable with electronic keystone correction. Multiple inputs include RGB, 3.5mm audio, RCA, RS-232. With dual source capability, multiple inputs and weighing only 5.89 kilograms, the LP770 is light and capable enough to be moved from any room or hung from the ceiling. Compatible with virtually all sources and networkable, picture-in-picture technology, the LP770 also includes a digital magnifier.

- \$10,700

InFocus LP350

Despite being originally designed as an ultra-portable projector, this unit is finding itself installed in many situations. The InFocus LitePro 350 is the personal projector that packs all the features of a premium conference room projector into a portable 3 kg package. Offering true XGA resolution with 1300 lumens of brightness and excellent image quality. Connectivity is all about offering the right options. This projector is one of the few projectors to offer the benefits of two data connectors with revolutionary M1-DA DVI digital and analog connectivity. Whisper quiet and HDTV compatible.

- \$9,900

InFocus LP925

2400 lumen output, and less than 37dB of noise. Your audience hears you, not the projector. Maximum connectivity with sleek, stylish InFocus Design. Built-in digital/analog connectivity with monitor loop through using InFocus patented CableWizard technology. All interfaces supported, RS-232, USB-B, USB-A, CableWizard communication. Inputs include; RGBHV, VESA, M1-DA, Component Video, 3 x Audio, S-Video, USB-B, RS-232. Mounted from the ceiling or carted between buildings, the LP925 delivers all the features of today's high end fixed projectors - 2400 lumens brightness, XGA resolution, lens options, lens shift, and multiple connections, all in a cost effective conference room meeting machine.

- \$12,900

InFocus LP930 **HOT SELLER**

3200 lumen output and less than 37dB of noise. Built-in digital/analog connectivity with monitor loop through using InFocus patented CableWizard technology. All interfaces supported, RS-232, USB-B, USB-A, CableWizard communication. Inputs include; RGBHV, VESA, M1-DA, Component Video, 3 x Audio, S-Video, USB-B, RS-232. With XGA resolution, the InFocus LP930 can hang stealthily from the ceiling, outputting 3200 lumens of brightness and blazing colour.

- \$16,900

JVC DLA-G15E

The DLA-G15E combines true SXGA (1365 x 1024 native) resolution with a brightness level of 1500 ANSI lumens at an ultra high contrast ratio of 350:1 to deliver superb picture quality in a user friendly package. Using JVC's D-ILA imaging technology, this projector is suitable for installation, workstations, special events, business, education and entertainment.

- \$28,200

JVC DLA-G20E

The G20E has all of the features of the G15E, with an improved brightness level of 2000 ANSI lumens and a contrast ratio of 300:1

- \$34,760

JVC DLA-M4000LE

DLA-M4000LE delivers SXGA (1365 x 1024) images with maximum clarity from 15m or more. The 1.6kW Xenon lamp generates a massive 4000 ANSI lumens, providing a sharp image even in a bright room. Its lightweight, stackable and compact design makes it suitable for many high-powered solutions.

- \$105,479

JVC DLA-G3010Z **HOT SELLER**

The DLA-G3010Z has packed its true S-XGA performance into a very small body. Weighing 6.5kg, the projector incorporates JVC's D-ILA technology, and Adaptive Digital Pixel Conversion Technology to deliver a native resolution of 1,365 x 1,024 pixels. This allows the displaying of images in true S-XGA format without

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LCD LENSES TO EXTEND YOUR PROJECTION RANGE!

Buhl Optical has a large selection of zoom, long-throw and wide-angle accessory lenses for most brands of LCD projectors. Our lenses let you place your projector anywhere in the room and still completely fill your screen with sharp, bright, colorful images. So, whether you need a lens with a longer or shorter focal length than your projector's prime lens, we have the lens you need to produce larger or smaller images at whatever distance you require.

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compression, scaling of loss of quality. The DILA device will also show true 16:9 images. The projector's variable-scanning capability has now been refined further to cover a horizontal scanning frequency ranging up to 105 kHz, making the projector ready for almost any input signal including U-XGA. The DLA-G3010Z generates 1,500 ANSI lumens, and is whisper-quiet, with noise reduced to less than 38dB.

- \$17,000

Mitsubishi LVP-X390U

With 2200 ANSI Lumens, and weighing in at only 6.7kg, this LCD projector offers true XGA at an affordable price. Features include Colour Uniformity Correction, 2 Live Picture in Picture. Inputs include Digital Interface (DVI), 2x Data, 2x Video & S-Video, Component DVD, SDTV, HDTV

- \$12,900

Mitsubishi LVP-X400U

This projector has all of the features of the X390U, but with 3000 ANSI lumen output.

- \$16,500

Mitsubishi LVP-S250U

The LVP-S250U is a compact projector with 1500 ANSI Lumens in output. Weighing only 5.9kg, this is a native SVGA projector with can cope with input resolutions up to XGA. Features include 2 Live Picture in Picture and Digital Expand Zoom. Inputs are 2x Data, 2x Video & S-Video, Component DVD, SDTV, HDTV

- \$7,900

NEC MultiSync MT1050G **HOT SELLER**

XGA (1024x768) resolution with 2100 ANSI lumens (high brightness mode), 1600 ANSI lumens (eco-mode). Weighs only 5.9kg. Advanced AccuBlend for accurate display of non-native resolutions. Keystone correction (+/- 30 degrees). ChalkBoard 'draw' and write notes on a projected image. Built-in PC Card Viewer - save your slides onto a Compact Flash memory card. Built-in stereo speakers. Full function remote control. Contains both monitor and audio out serial ports. Also DTV and HDTV capable. USB Mouse, digital zoom and help menu. Optional accessories include replacement lamp, hard or soft carry case, component video cable, ceiling mount kit, wide angle zoom lens, rear projection lens.

- \$12,109

NEC MultiSync MT1055G

XGA (1024x768) resolution with 2600 ANSI lumens (high brightness mode), 2000 ANSI lumens (eco-mode). Weighs only 6.0kg. Advanced AccuBlend for accurate display of non-native resolutions. Keystone correction (+/- 30 degrees). ChalkBoard - 'draw' and write notes on a projected image. Built in PC Card Viewer. Built in stereo speakers.

- \$16,192

NEC GT1150

XGA (1024x768) resolution with 3000 ANSI lumens (high brightness mode) 2400 ANSI lumens (Eco-mode). Weighs only 10kg. Advanced AccuBlend for accurate display of non-native resolutions. Keystone Correction (+/- 30 degrees). Built-in PC Card Viewer.

- \$23,725

NEC XT5000

3-chip DLP projector. XGA resolution (1024x768) with 4500 ANSI lumens (high brightness mode), 4000 ANSI lumens (eco-mode). Stackable up to 3 projectors. 4 detachable lenses that can be individually adjusted. Advanced AccuBlend - for accurate display of non-native resolutions. Keystone (+/- 30 degrees). Built-in PC Card Viewer. Built-in digital interface for direct input of digital images.

- \$87,296

Panasonic PT-L701E and PT-L711E

Designed as an ultra-portable and weighing 3.8kgs, these 1000 and 1400 ANSI Lumen projectors are finding themselves in numerous smaller installation situations. 3x 0.9" LCD panels provide 1024x768 native resolution. The unit features auto setup (including automatic keystone correction), extra short-throw lens and Unique Index Window for storing and freezing data and video input. New quiet-design cooling fans and Standard/Save lamp power modes increase lamp life to 3000 hours in power save mode

- \$10,995 and \$12,495

Panasonic PT-L797PXA **HOT SELLER**

This 3-chip LCD projector delivers a very bright 2700 ANSI lumens. Designed with a dual lamp system, the lamps can be used individually



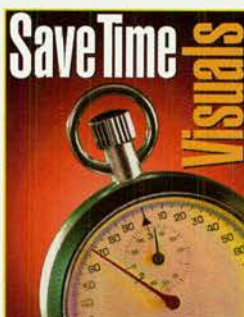
Mitsubishi LVP-X390U



NEC MultiSync MT1055G



NEC GT1150



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Panasonic PT-L797PXA

"The PT-L797PXA designed and manufactured in Japan for the medium to large venue market. Over 40 units were used in the Sydney Olympic games. At the heart of the 797 is Panasonic's own BriteOptic dual lamp system. This proprietary technology delivers the power of two high-intensity UHM lamps through a high tech prism, and it adds and improved light integrator system. By maximizing light efficiency, this system assures superior brightness in all indoor lighting conditions"

giving lamp life up to 4000 hours or simultaneously to give increased light output. Encased in a lightweight and durable Magnesium-Alloy cabinet, the units are also dual stackable for increased brightness. Other features include Video impose, Auto setup, Intelligent image resizing and Picture in picture function.

• \$19,995

Panasonic PT-D9600E

This 3-chip DLP large venue projector delivers a staggering 12,000 ANSI Lumens in native SXGA (1280 x 1024) format and up to U-XGA (1600 x 1200) using internal re-scaling. Readily compatible with wide variety of DTV/HD/Cinema sources, a superior picture quality is achieved by DLP technology and full digital circuit.

• \$279,995



Sanyo PLCXP30E

"Sanyo, one of the world's largest manufacturers of LCD projectors, adds the PLC-XP30 to its already large family of LCD projectors. Building on its reputation of providing leading edge multimedia projectors for installations, Sanyo has once again shown it is at the forefront of projector technology research and development."

Sanyo PLCXP21E

2500 ANSI lumen XGA LCD Projector with a remarkably high contrast ratio of 700:1. Featuring SXGA compression, digital keystone, digital zoom, freeze frame, wireless mouse, two computer inputs, component video input, laser pointer, line doubler and progressive scan for optimum video images. RS232 controllable. The Sanyo PLCXP21 is designed for the highly demanding boardroom or lecture theatre installation where bright, high quality images must be coupled with flexibility and quite operation. With the introduction of the whisper quite fan control system, the doubling of the contrast ratio and optional lenses the PLCXP21 is of impeccable quality.

• \$15,999

Sanyo PLCEF10EA

3300 ANSI lumen SXGA LCD Projector with a contrast ratio 350:1. Featuring digital interface (panel link system) UXGA compression, optical lens shift, wireless mouse, two computer inputs, component video input, line doubler and progressive scan for optimum video images. Stackable for 6600 ANSI lumens.

Large range of optional lenses. RS232 controllable. The Sanyo PLCEF10EA one of the first projectors to offer a complete digital signal path from computer to projector. A critical component of the digital visual interface is the included graphics card with its own connector that fits easily into a PC slot.

• \$39,999



Sanyo PLCXF20

5000 ANSI lumen XGA LCD Projector with a contrast ratio 700:1. Featuring 4 lamps, digital visual interface, UXGA compression, optical lens shift (h&v), wireless mouse, four configurable inputs, line doubler and progressive scan for optimum video images. Stackable for 10000 ANSI lumens. Large range of optional lenses. RS232 controllable. The PLC-XP20 combines the ultimate in brightness, contrast, resolution and flexibility. Utilising four 150-watt UHP lamps the lamp management system controls and monitors each lamp individually so four lamps or only two lamps can be used to maximise lamp life. Add a fail-safe operation so if a lamp fails it will automatically switch to the pair of good lamps.

• \$39,999

Sanyo PLCXP30E HOT SELLER

3000 ANSI lumen XGA LCD Projector with a contrast ratio of 700:1 and 95% uniformity. Featuring digital visual interface, optical lens shift, digital keystone, digital zoom, freeze frame, wireless mouse, two computer inputs, component video input, laser pointer, line doubler and progressive scan for optimum video images. Optional short and long throw lenses. RS232 controllable. Combining flexible connectivity options with brightness, this unit offers complete presentation satisfaction. The PLC-XP30 offers a variety of inputs, including component inputs supporting HDTV compatibility. The power lens shift feature allows the unit to be positioned in locations that would normally require digital keystone correction to retain the images geometry.

• \$19,999

Sony VPL-FX50 HOT SELLER

This brand new LCD projector is designed for applications where 3500 ANSI Lumens brightness and installation flexibility are called for. With network capability, Memory Stick slot, interchangeable lenses, vertical lens shift and native XGA resolution, scan conversion up to QXGA (1600 x 1200 pixels), very high contrast ratio and 3D Digital Gamma Correction the FX50 is a real high performance projector. At under 9kg it is also small enough to work well in the hiring and staging business where motorised zoom, shift and focus, as well as stackability will be greatly appreciated.

• \$26,000

Sony VPL-FE110

Another new model, based on the successful VPL-FE100 chassis. The FE110 extends the multiple-lamp feature so that the projector can run on just two lamps for half brightness, and automatically rotate which lamps are used to equalise and maximise lamp life. network capabilities are also included in the FE110 with a PCMCIA card slot allowing wireless or wired

LAN connectivity. 4000 ANSI lumens with high contrast ratio and native SXGA resolution ensure the FE110 will deliver the highest quality images. Scan conversion up to QXGA, 3D Digital gamma correction, a range of interchangeable lenses, motorised zoom, focus and vertical lens shift round out the feature list.

- \$44,660 (without lense)

Sony VPL-PX31

Portable powerhouse recently updated from the popular VPL-PX30. The PX31 features a new lamp with 1500 hours life in standard mode for 2800 ANSI lumens or 3000 hours in low brightness mode for 2100 ANSI lumens. Features include digital keystone correction, XGA native resolution, scan conversion up to SXGA (1280 x 1024 pixels), on-screen zoom from the remote, interchangeable lenses, front, rear and ceiling mount capability. The PX31

only weighs 7.2kg so is easily portable and easy to install, although it's low fan noise (34dB) and smart design mean it is just as much at home on a board room table as it is on the road.

- \$19,239

Sony VPD-LE100

The flagship of Sony's projector range, the LE100 is a 3 panel DMD device featuring a xenon lamp to deliver 10,000 ANSI lumens with SXGA (1280 x 1024 pixels) native resolution and scan conversion up to QXGA (1600 x 1200 pixels). Modular inputs allow for a wide range of input signals including SDI HDTV. The LE100 uses Sony's familiar remote control structure and serial protocols, so integration with existing systems should be easily accommodated. Horizontal lens shift

- \$235,000

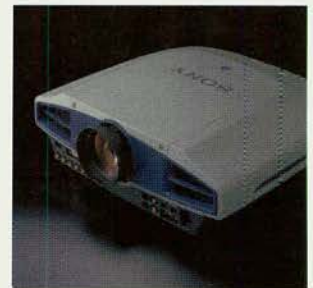
Projector Review

Connections will be testing and reviewing new and interesting projectors as they are released onto the local market.

This month, the new Sanyo PLCXP30E is reviewed on page 58 by John Grimshaw

Unit	List Price	Native Resolution	Imaging Device	ANSI Lumens	Distributor	
Barco ELM R12 *	\$ 240,000	1280x1024	3 chip DLP	12,000	Barco	Ph +61 3 9646 5833
Barco BarcoReality 6500 *	\$ 55,000	1280x1024	3 chip LCD	5,500		
Barco SLM G5 "Performer"	\$ 87,000	1024x768	3 chip DLP	5,000		
Elmo EDP-6200	\$ 11,500	1024x768	LCD	1,900	C R Kennedy	Ph +61 3 9823 1555
Epson EMP7600	\$ 13,530	1024x768	LCD	2,200	Epson	Ph +61 2 9903 9000
Epson EMP8100	\$ 22,058	1024x768	LCD	3,200		
Epson EMP7700	\$ 17,575	1024x768	LCD	3,000		
Epson EMP-9000	\$ 29,400	1280x1024	LCD	1,700		
Fujitsu LPF 4800	\$ 9,900			1,500	Fujitsu General	Ph +61 2 8822 2500
Fujitsu LPF 7200	\$ 15,592	1024x768	3 chip LCD	2,800	Australia Pty Ltd	
Fujitsu LPF 8200	\$ 16,186	1024x768	3 chip LCD	2,500		
Hitachi CP-S860	\$ 10,295	800x600	LCD	1,700	Hitachi	Ph 1800 789 799
Hitachi CP-X970	\$ 15,995	1024x768	LCD	2,200		
InFocus LP770	\$ 10,700	1024x768	3 chip LCD	2,000	Electroboard	Ph +61 2 9433 4444
InFocus LP350	\$ 9,900	1024x768	DLP	1,300		
InFocus LP925	\$ 12,900	1024x768	3 chip LCD	2,400		
InFocus LP930	\$ 16,900	1024x768	3 chip LCD	3,200		
JVC DLA-G15E	\$ 28,200	1365x1024	D-ILA	1,500	Hagemeyer	Ph +61 2 9370 8888
JVC DLA-G20E	\$ 34,760	1365x1024	D-ILA	2,000		
JVC DLA-M4000LE *	\$ 105,479	1365x1024	D-ILA	4,000		
JVC DLA-G3010Z	\$ 17,000	1365x1024	D-ILA	1,500		
Mitsubishi LVP-X390	\$ 12,900	1024x768	LCD	2,200	Mitsubishi Electric	Ph +61 2 9684 7777
Mitsubishi LVP-X400U	\$ 16,500	1024x768	LCD	3,000		
Mitsubishi LVP-S250U	\$ 7,900	800x600	LCD	1,500		
NEC MultiSync MT1050G	\$ 12,109	1024x768	LCD	2,100	NEC	Ph +61 2 9930 2000
NEC MultiSync MT1055G	\$ 16,192	1024x768	LCD	2,600		
NEC GT1150 *	\$ 23,725	1024x768	LCD	3,000		
NEC XT5000 *	\$ 87,296	1024x768	3 chip DLP	4,500		
Panasonic PT-L701E	\$ 10,995	1024x768	3 chip LCD	1,000	Panasonic	Ph 13 2600
Panasonic PT-L711E	\$ 12,495	1024x768	3 chip LCD	1,400	Australia Pty Ltd	
Panasonic PT-L797PXA	\$ 19,995	1024x768	3 chip LCD	2,700		
Panasonic PT-D9600E	\$ 279,995	1280x1024	3 chip DLP	12,000		
Sanyo PLCXP21E	\$ 15,999	1024x768	LCD	2,500	Sanyo	Ph +61 2 8825 2822
Sanyo PLCXF10EA	\$ 39,999	1280x1024	LCD	3,300	Australia Pty Ltd	
Sanyo PLCXF20 *	\$ 39,999	1024x768	LCD	5,000		
Sanyo PLCXP30E	\$ 19,999	1024x768	LCD	3,000		
Sony VPL-FX50	\$ 26,000	1024x768	3 chip LCD	3,500	Sony Australia Ltd	Ph 1800 017 669
Sony VPL-FE110 *	\$ 44,660	1280x1024	3 chip LCD	4,000		
Sony VPL-PX31	\$ 19,239	1024x768	3 chip LCD	2,800		
Sony VPD-LE100 *	\$ 235,000	1280x1024	3 chip DLP	10,000		

* indicates price excludes lens



Sony VPL-FX50

"This projector (and the VPL-FE110) features the ability to connect to LAN either with a cable or via wireless LAN technology. Network PJ features allow control of the projector from a web browser. "Not only can the projector be controlled from the web browser, but it is also possible to download files into the projector for display at a later time. It is also possible to browse the network directly from the projector, to find files to display, and, if the LAN has internet access then the internet can be accessed directly. Inbuilt Windows CE operating System means that Word, Excel and PowerPoint files can be stored in the projector for direct display at any time. "By displaying files directly from the internal operating system means that there is no analogue to digital or digital to analogue conversion of the display signal, thereby delivering the sharpest, most accurate images possible."

DISSENTING VIEW

How many ways can we do this wrong?

Calling readers to come and listen to speakers for this story, I thought I'd invite Graeme Harrison, a Sydney freelance sound engineer with over 25 years experience. He explained he couldn't come as he was working that day, then let fly with a long criticism of our two most recent tests.

He said he variously didn't like or respect some of the people previously invited as listeners, and/or some of their musical choices.

One test we published was done outdoors, where we stacked two boxes atop two others, upside down - so the high frequency horns would be near to the same plane. That made us a laughing stock, according to Graeme.

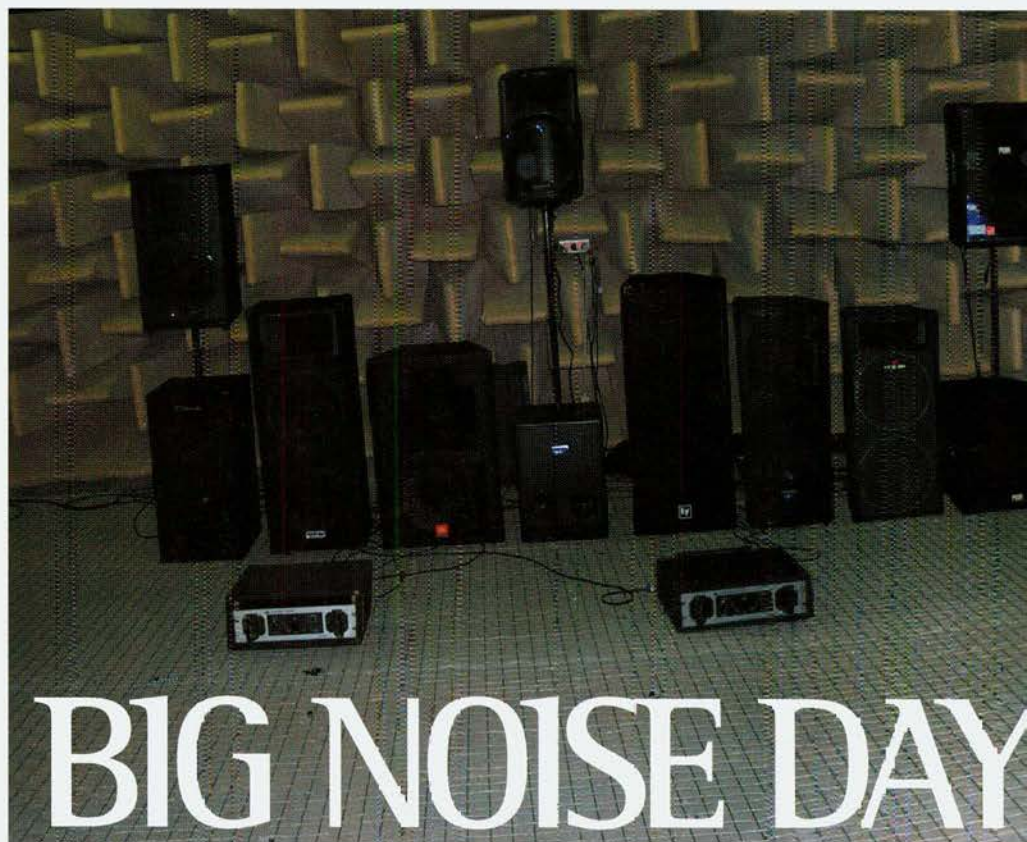
Finally, the kicker was that the last test (*powered 12" and horn boxes, February 2000*) disadvantaged a Zeck product he was selling at the time, *because we had cut the bass*. According to Graeme, this amplified speaker box has a cut/boost rotary control on the back panel - contrary to the assumption we made that it was purely a boost control. Apparently, the centre position - 12 o'clock - is unity, with no cut or no boost. By leaving the knob set hard left, we had wound bass OUT of the box, he insisted.

I explained that there was no supporting literature or indication thus on the back panel of the amp module, so how were we to know?

We also invite manufacturers representatives along as observers, but the Zeck was tested without anyone from that camp present.

We always appreciate constructive feedback on any story in Connections.

-Julius Grafton



Here's a tricky test. We wanted to see what you can get for under 5 grand, that is not processed externally. Until a few

So the criteria became: 3 drivers, one or two boxes, no external processing, and under \$5,000 each. This line up produced 8 contenders, with a further four manufacturers unable to supply product. Three extra products arrived at our HQ too late, thanks to pre Christmas freight bottlenecks.

This segment is designed more for people using speaker systems in the portable sense, driveway hire and production included. It also promises maximum bang for your buck, since each box or top/bottom box combo only requires one side of a power amp.

So before you start emailing or pick up the phone, YES there are two powered contenders here too. And, they have plenty of processing built in, as well amplifiers. But they fit the category because they are simple to set up - they take a full range signal - and they cost under 5 grand.

OUR TEST

Once again we ventured deep into the side of the hill at Chatswood, and rented the large anechoic chamber at the National Acoustics Laboratory. This is a big dead space, where if you stand still long enough with the door shut, you can hear your heart beating. It has no reflective surfaces at all. It is almost as quiet as outer space, and way more convenient. Venturing inside is a very strange experience.

There is no floor, instead a sprung sus-

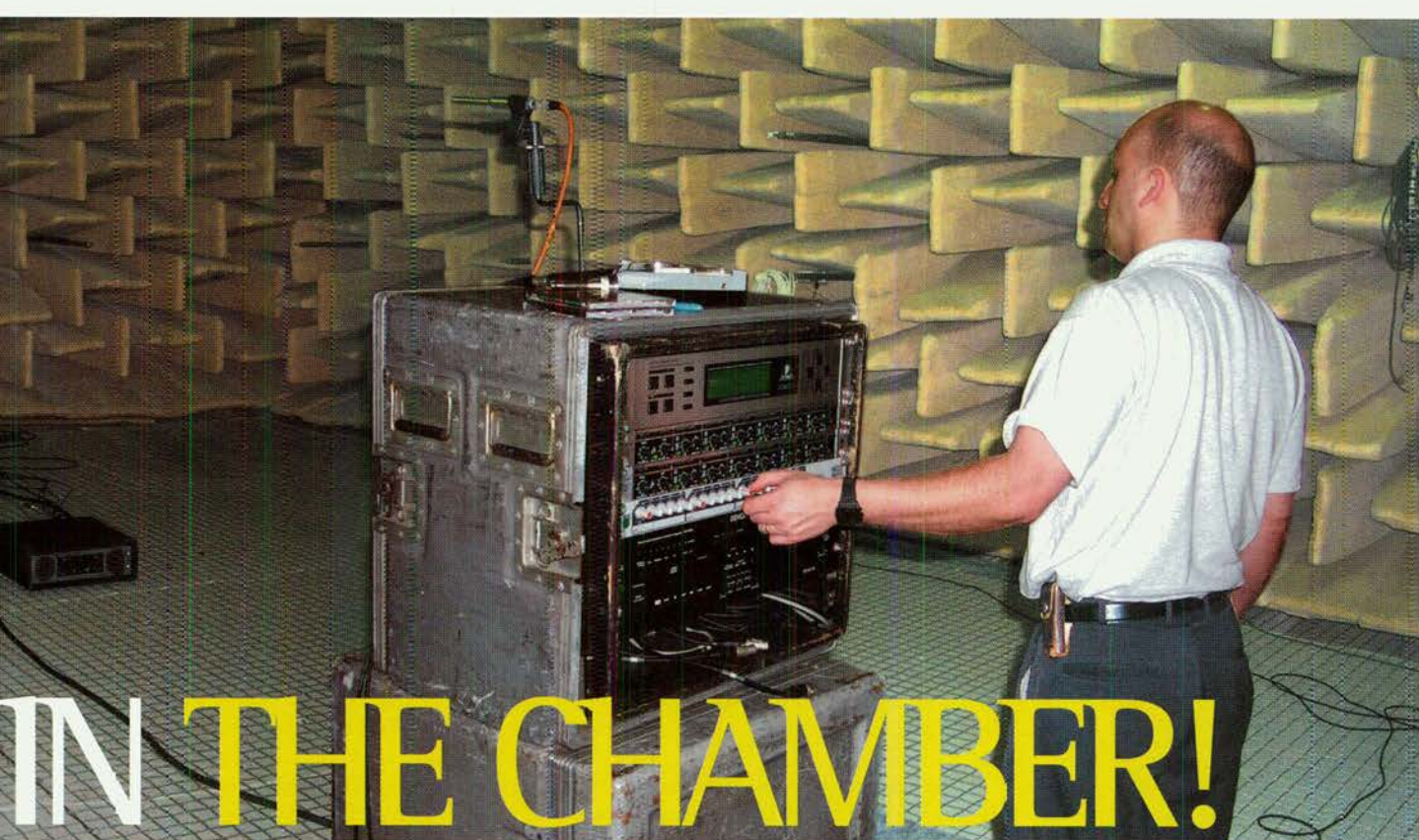
pended mesh trampoline does the job, because the massive foam baffles extend upwards from the bottom of the room as well as walls and ceiling.

We use the chamber because a speaker box will be totally unaffected by reflections, the only other way is to find a grass field outside, with no near neighbours, and on a day with zero wind and an ISO average temperature of 15°C. Try arranging that in Sydney!

The contenders were hidden behind some light weight black drape, and numbered one through eight. Six of the eight were each amplified through one channel of an amplifier. We were trying to borrow Crown VZ 5000's, but had to settle for Australian Monitor AM 1600's. These are still well regarded, and deliver a very genuine 500 watts at 8 ohms, or 800 watts at 4 ohms.

Before our listener's arrived we set each contender to the same acoustic gain by measuring the sound pressure level on a dB meter. Each contender has a theoretically different sensitivity, so simply driving them all at gain level 'X' would mean predictably different volumes. Once all gain matched, we could switch then between them at consistent levels.

There was an issue which couldn't be resolved to the satisfaction of all, and that was the height of each system. The all in one boxes were built to roughly the same height, but the split top box / bottom box pairs came with a pole to put between them, resulting in



short years ago that meant a double 15" and horn box, with a passive crossover. As our lineup shows, there are more options now available - including powered, and 'split' pairs with separate subs.

By Julius Grafton

different heights. As it was, the high frequency horns were not in any kind of organised horizontal line.

Why not stack something under each system? We were worried about coupling of the system with whatever box it was sat upon, and also somewhat limited because of the tensioned floor of grid mesh material. No obvious easy solution existed. There is also the argument that the systems are used as they are built, the split systems are ready to sit on a floor with the top box high enough, the all-in-one boxes always need to be sat on top of a road case to get the horn over people's heads.

In any case, we reasoned our listeners could move about to adjust their listening position to the system.

The one very big aspect of this test that must be kept in mind is that there being no floor, there is no bottom end coupling. And, it appears at least one of the products had a need for a floor. More on that later.

LISTENERS

We've done this twice before, and cast about for people with a real interest who don't have affiliations with any particular brand. This time we ended up with a nice cross section of people who work with speaker systems in this category.

Choosing the busiest month of the year (December) made it tough on those who

attended so we thank them extra.

Wayne deChong from Sydney pro outlet Lots of Watts supplied what we needed in audio equipment, from the CD player, to mixer through to amplifiers and cables.

Our 'ears' were: **John Perez**, who runs Jazzright Production Services in Sydney; **Jay Ewen** who is proprietor of Jay's Live Sound; **Jeff Stewart** from Anything Audio, a sound reinforcement sales specialist and live sound engineer; freelance engineer **David Gilfillan** who is also studying for his Masters of Design Science (Audio), and **Nick Hemmingway**, a graduate of audio design who works with AV Sound.

Joining them was our editor **John Grimshaw**, and the process was overseen by your writer who doesn't consider his ears suitable and three manufacturers representatives.

You'll notice John Perez hasn't made published comments in this story, his notes were hard to follow and we understand how busy it can be around Christmas, because he didn't manage to follow up - despite multiple promises.

THE PRODUCTS

• First in line was the E.V. Eliminator, a passive top box and sub combination separated by a short pole. The sub is a hot seller because it is a bandpass loaded 18" woofer, mounted sideways, retailing at

OUR LINEUP

E.V. Eliminator passive top box and sub combination.

Bullfrog DT 215 dual 15" and horn box.

JBL SR 4735 three way passive or active box.

Mackie SRM 450 12" and horn powered box with SR5 1500 single 15" powered sub.

EV Mongoose EV03 dual 15" and horn box.

Mackie SR 1530 powered 3 way box.

DAS Pf215, compact dual 15" and horn box.

Peak Audio passive 2 way top box on-a-pole (HPS 156 R) and HPS 151 S subwoofer.



E.V. Eliminator passive top box and sub combination, with Bullfrog DT 215 dual 15" and horn. *b.c.x.*

\$1,199. Because of its size it can sit on its side as a reasonably low profile sub under other boxes or under a stage. It has a low pass filter stopping signal above 160Hz.

The top box was more conventional 2 way, loaded with a 15" DL series driver and a one inch throat compression driver on a 60° x 40° horn. It likes to receive 350 watts at 8 ohms. Priced at \$1,199 also.

- Our next contender was the cheapest of the lot, the Bullfrog DT 215 dual 15" and horn box. It was alone as the only passive box without Speakon connectors, it has a pair of 6.5mm jacks. This 600 watt box is loaded with custom components built by Eminence for Bullfrog in the USA, and it was the lowest costed solution there on the day, at \$1,295. Its high frequency horn offers 90° x 50° dispersion.

- Then the line up took a hike in cost, with the JBL SR 4735 which is a trapezoidal three way passive or active box. An interesting product this one, selling well into places where a separate sub woofer isn't required or desired, says JBL. It has a horn loaded midrange section with a 6.5" driver under a 1" throat compression driver on a 70° x 50° horn. A 15" woofer does the low end duties. Priced at \$3,905, the version we tested had an optional flying kit, at an extra cost of about \$700.

- Mackie's SRM 450 12" and horn powered box was next, sitting on a pole well over their SRS 1500 single 15" powered sub. This pair retails at \$2,295 (SRM 450) and \$2,495 (SRS sub). They are, as the powered box title suggests, ready to plug and play, just add line level audio. Which we did.

The top box (SRM 450) has a 300 watt amp for the 12" driver, and a 100 watt for the horn. Horn coverage is 90° x 45°. The sub is rated at 600 watts, and like most subs, can be used with most other top boxes.

- Number five in line was the EV Mon-goose EVO3, an Australian designed and constructed dual 15" and horn box with industrial strength components and the longest heritage of anything else tested. It is black carpeted, trapezoidal, and comes with a smart front-protecting dolly on wheels that easily unclips.

The 'Goose has a simple pair of Speakon connectors on the back, and like the JBL, has the ability to switch from passive (internal crossover) to active (needs an external crossover and two channels of amp). It will handle 1200 watts of input, making it the true heavyweight of the day. The X-Array horn (60° x 40) and heavy duty driver go towards the hefty sell price of \$4,999.

- Sixth in line was Mackie's new SR 1530 powered 3 way box, loaded with a one inch throat high frequency driver, a horn loaded 6 inch mid speaker, and a 15" woofer. There are three channels of amplifier inbuilt, along with electronic and component protection, EQ, time and phase alignment functions.

It has very ergonomic features, and a 90° x 40° dispersion. The tri-amplifier department delivers 300 watts to the 15" speaker, 100 watts to the mid, and 100 watts to the high.

This box is not as heavy as you would fear either, at 45.5kg. Priced at \$2,995 which, of course, includes the internal amplifiers.

- Then came the DAS Pf215, a compact dual 15" and horn design from Spain. Nothing terribly different about this product, it is an honest contender which requires around 500 watts at 4 ohms to work best. It is loaded with 2 DAS 15" woofers, and a titanium 1" exit throat high frequency compression driver. The high frequency dispersion is 90° x 40°. At \$1,699, the second cheapest contender here.

- Last in line was a top and bottom box duo from Peak Audio, an Australian brand owned by C.M.I. who import Eminence loudspeakers from the USA. Peak boxes are designed by Peter Troy and Jimmy Vee. Our test pair featured a trapezoidal subwoofer, the HPS 151 S (\$949) and a matching passive 2 way top box on-a-pole, the HPS 156 R (\$1,399). Each of these came with 2 speaker connectors, a Speakon, and a 6.5mm jack. This made interconnecting both boxes tricky, because you'd need a jack to Speakon cable.

LET THE MUSIC START

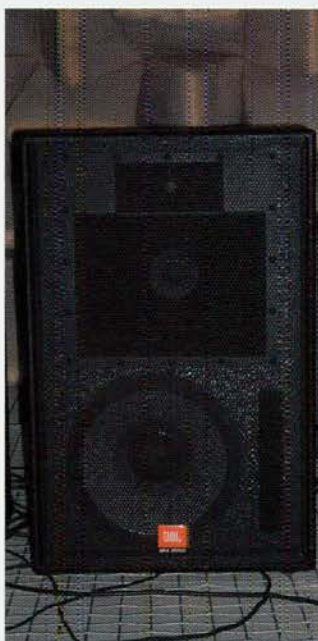
Our listeners have diverse taste, as is always the case. We heard each track for about 20 seconds through each box, one through eight. Some tracks we reversed the order.

The tracks were: Suck My Kiss (Red Hot Chili Peppers); House of the Blue Danube (Malcolm McKaren); Mr. Rain (Ian Moss); Rose Rouge (Saint Germain); a piano passage from Claude Debussy's Preludes One Live; and a track from the Yello album, Drive Driven.

The tracks were played at lower level to start, getting louder as the hour and a half session progressed. Our final listening involved some drum sequences and tone sweeps from the Sound Check test CD. The drum parts were done with the amplifiers just going into the red.

What astounded our team was how apparently quiet the testing appeared, given how hard the amps were running. This was because of the deadness of the room.

JBL SR 4735 three way passive or active box.



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WHAT WAS SAID ABOUT EACH BOX:

Box 1: Eliminator (sub and top box).

Jay: Crisp top, perhaps too much. Bottoms really nice.

Nick: Even response across spectrum. System noise in tops.

Jeff: Crisp, warm low end, would suit rock n roll. Developed rattle in horn.

David: Lacks body in mid bass, over extended tops, noisy top end.

John G: Very impressive sound. Crisp highs and strong bass were especially notable, but this system had an overall clarity I liked.

John P:

Wrap: It was liked. Being relatively low powered, the top box got a caning and the high frequency section developed a rattle that was clearly a fault.

Box 2: Bullfrog

Jay: Doesn't compare with other boxes at all.

Nick: Poor low end response, clarity fairly poor.

Jeff: Little hollow in mid, good rock music reproduction.

David: Bass distorting, thick, unmusical.

John G: Very muddy mid range and a distinct lack of bass in comparison to the others. But for some odd reason, quite acceptable when Chilli Peppers were played through it.

Wrap: Cheapest solution here by a long shot,

use for DJ work.

Box 3: JBL SR 4735

Jay: Nice all round, more bottom end would be good.

Nick: Well balanced, vocal information good, bass struggling.

Jeff: Nice, warm sound, lacked a little high mid clarity.

David: OK top end, doesn't handle bass too well, it is a contender.

John G: Frequency range of this box was decent enough, but it seemed to fall off a bit on the extremes of the highs and lows.

Wrap: Well mannered, probably best used for installations, add a sub for band work.

Box 4: Mackie powered SRM 450 top box and SRS 1500 sub.

Jay: Nice and clear, but way too topky. I don't like the bottom end.

Nick: Even response, sub lacking.

Jeff: No low mid energy, it went loud in the SPL test.

David: Hole in the mid bass, midrange too present.

John G: High Mids and Highs sounded far too present. This may have been caused by the bass bin being set too low for the system.

Despite this, it sounded crystal clean.

Wrap: We set the top box, and the sub, to unity gain. But the sub lagged in output, we



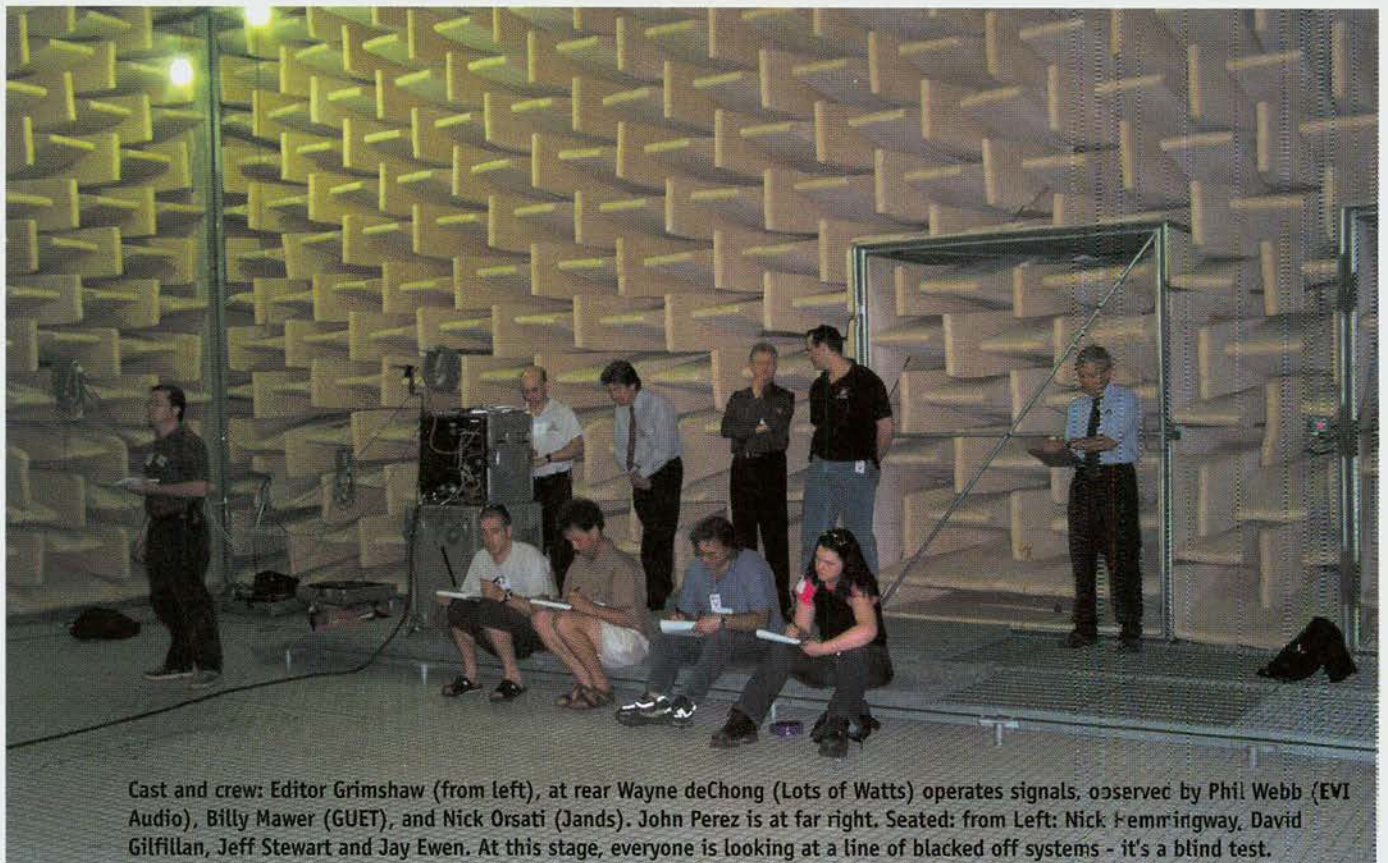
David Gilfillan and Nick Hemmingway



Jeff Stewart



Jay Ewan



Cast and crew: Editor Grimshaw (from left), at rear Wayne deChong (Lots of Watts) operates signals, observed by Phil Webb (EVI Audio), Billy Mawer (GUET), and Nick Orsati (Jands). John Perez is at far right. Seated: from Left: Nick Hemmingway, David Gilfillan, Jeff Stewart and Jay Ewan. At this stage, everyone is looking at a line of blacked off systems - it's a blind test.

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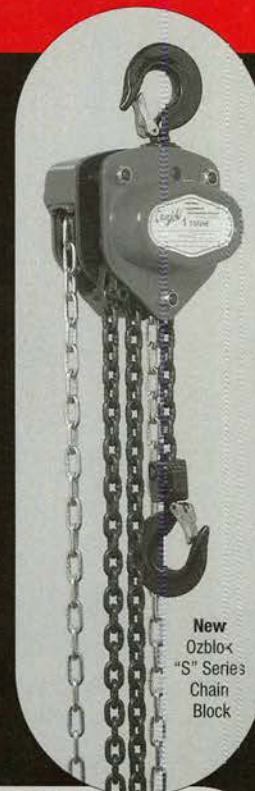


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Mackie SRM 450 12" and horn powered box with SRS 1500 single 15" powered sub.

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Mackie SR 1530 powered 3 way box.



Many thanks!

Lots of Watts in Sydney provided logistical support.

(Call +61 2 9638-0302)

Peter Alway (Call +61 2 9412-6800) rents out the Anechoic Chamber.

suspect because there was no floor to couple with. This is easy to overcome, just turn UP the sub gain. Overall, well behaved, but not as loud as others.

Box 5: Mongoose EVO 3

Jay: Good mids and highs, a sub would be nice.

Nick: Warm bottom end, small distortion in mids.

Jeff: Tight, fairly smooth through frequency range, good rock sound, high clarity even at high SPL.

David: 4 - 5k harsh, bass OK, it's a contender!

John G: Well-matched response across its range. Low frequencies seemed to be lacking presence. A good natural sound that made this box stand out in the test.

Wrap: Most expensive, but loudest, great transport dolly, can switch to bi-amp mode. Use where hard work and loud music required. Prefers HUGE amplifier (1,200 watts at 4 ohms).

Box 6: Mackie SR 1530 active 3 way.

Jay: A little middy, good highs.

Nick: Muddy mids, vocal information OK.

Jeff: Lot of low mid, overpowered the high mid slightly. Not bad overall.

David: High frequencies over emphasised, good bottom end.

John G: Well balanced sound that certainly appealed to me. This was my favourite of the single box options.

Wrap: Interesting product, we ran it loud at the end and didn't get the peak light to illuminate, but it was audibly already in protection mode. Not the loudest here, but possibly very hard to blow up.

Box 7: DAS Pf 215

Jay: Sounds best from the front, possibly the tops are too directional.

Nick: Poor bottom end response.

Jeff: Good mid range definition, lacked lows, overall just lacked 'tone'. EQ would fix it.

David: 500 to 1.5kHz too forward, not much bass.

John G: Lacked clarity in mids, not enough thump in the bottom end. Not the worst speaker here, it probably suffered a bit by comparison to its neighbours in the test.

Wrap: Honest but plain. Could sound way better with some crossover work, or external EQ. Second cheapest unit here.

Box 8: Peak Audio HPS 151 sub and HPS 156 top box.

Jay: Nice bottom end, clear tops, good all round.

Nick: Mids lacking, lacks nice sizzle, well balanced with rock music, clarity and tonality OK.

Jeff: Smooth overall sound, not too brittle, warm lows. Handled power well.

David: Floppy bass, but full. Vocal a little distant, but OK.

John G: Had some room to really push the low frequency SPLs. Some resonant frequencies showed up in the sine wave sweep which explained some of the lack of detail, particularly in the mids. The off-axis high frequencies seemed to roll off very fast after about 10 degrees off-axis. A good split-bass system.

Wrap: A surprise when the covers were pulled off, since no one expected a little known brand to sound so good. Close to the Mackie 1530 in the value for money dept, if you add on the cost of one side of an amplifier - but louder.



Peak Audio passive 2 way top box on-a-pole (HPS 156 R) and HPS 151 S subwoofer.



DAS Pf215, compact dual 15" and horn box.

EASY GUIDE:

Loudest: Mongoose EVO 3.

Quietest: Eliminator top box doesn't like a lot of power.

Cheapest: Bullfrog.

Smallest overall mass: DAS

Curveball: Eliminator sub is great value.

Cost comparison: add on half an amplifier (at LEAST \$800) before comparing any unpowered box here against the powered (Mackie) products.

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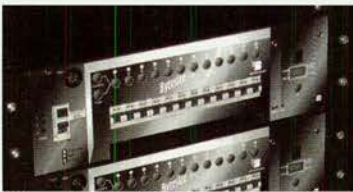
When it comes to Dimmers, there are not many options in 240 volt Australasia. Because of local power connectors they are not very ideal articles to import. As a result, most options available are locally produced models. We invited numerous manufacturers of dimmers to provide details of their dimmers to put in this report. Bytecraft, Jands and LSC (in no particular order) are the "big three" manufacturers of

reliable Australian dimmers, and each have provided us with information on four of their dimmers. This may not be any manufacturer's entire range, but it is a good indication of some of the options available. Readers should note that the claims written here are the (edited) words of the vendor and should be taken with a small grain of salt.

- John Grimshaw

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Bytecraft Bytesize

This is a broadcast quality 12 x 2.5kW or 6 x 5kW dimmer. Features include optional 2 outlets per dimmer, status monitoring and remote reporting. Inputs include DMX 512, AVAB DMX, Felix, Command Link, Analogue +/-10V. The device comes with fault reporting, internal preset programming, soft patch, curve control, 60 Amp SCR Technology, 100 x 12 channel internal preset memories, internal back-up level memory and RCD safety protection. Available as freestanding (Bigtop) or rack mount (483)

- \$4,730

Bytecraft Bytesize VST

This is a highly efficient 12 x 2.5kW dimmer that can operate with distorted generator sources. Features include remote status and remote control, compatibility with most lamp

types, including discharge lamps (i.e. metal halide, fluorescent, mercury/sodium vapour), electronic overload and short circuit protection. The unit can be used as stand alone, with internal sequencing with presets including fade-up and fade-down time. Rated at continuous use at 40°C ambient, the dimmer is CE and C-Tick compliant.

The unit creates a sinusoidal output independent of load, including reactive loads, which eliminates lamp filament singing and dramatically reduces harmonics, heavy neutral currents, RF harmonics and associated interference. Its cool and quiet operation has a substantially improved power factor, RCD safety protection and is controllable via local network hookup. An optional Dimmer Control Unit (Remote) with bit mapped display and shuttle dial provides access to advanced features - even from a remote location

- POA

Bytecraft Solution28

This is an architectural dimmer rack that comes with an astronomical clock, 16 bit fade resolution, internal soft patch, fault detection and status monitoring. Control protocols are DMX, Analogue and PC. Programming functions are accessible via hand held terminal or PC. There are multiple remote and local play back modes. Robust 60 Amp SCR Technology. The unit comes with up to 28 x 10amp (or 14 x 20amp or 6 x 40 amp or a mixture) dimmers in a small package. Can be set for stand-alone internal sequencing, with presets including fade-up and fade-down time. RCD safety protection. Two optically isolated digital inputs with 4 serial data inputs/outputs and 32 additional analogue input/outputs.

- \$8,800

Jands GP 12

12ch x 10amp 2.4kw circuits. Rack mountable. Each circuit with fuse protection and LED level display. Front mounted output sockets. Test and chase facility. DMX bank control. 3phase input. No frills unit ideal for schools and churches. CE and C-tick approved.

- \$2,495

Lighting Dimmers



Jands HP 12



ETC Sensor System



LSC e24 Dimming System

LSC iPRO Dimmer



Jands FP 12 HOT SELLER

12ch x 10amp 2.4kw circuits. Available in rack mount and wall mount versions. Each channel with circuit breaker protection and LED level display. Rear mount output sockets on rack mount version, RCD also available. Test, chase and preheat facility. DMX bank control. Ideal for medium sized venues and community centres. CE and C-tick approved

- \$2,895 (rack mount)
- \$2,795 (wall mount)

Jands HP 12

12ch x 10amp 2.4kw also available with 6ch of 20amp 5kw circuits. Rack and wall mount versions available with Triac or SCR control. Rear mount outputs and front mount circuit breakers each. LED level and status display per channel. DMX channel assignable. Test, preheat, 110/240 voltage, scene and chase facilities. Software upgradeable. Ideal for touring, high usage venues. CE and C-tick approved

- \$4,095

ETC Sensor System

Single or dual 15 or 25amp dimmer modules that configure into user specified racks with separate CEM control module. CEM has test, preheat, 110/240 voltage, curve adjustment, DMX assignment options, input and output displays. Sensor Online dimmer reporting option. Available with RCD per channel. Ideal for architectural or theatre installations or in touring package.

- \$ POA (distributed by Jands)

LSC ePAK

12 channel x 10 Amp 19" rackmount fan-cooled dimmer with MCB per channel; choice of output connectors; easy to use front panel controls for DMX address setting, scene storage, channel selection and drive output; complete with 32 Amp three phase plug and tail. The central heat sink has been custom designed to mount all the main components and provide an efficient airflow, resulting in a 100% duty cycle operation. "Current Control Technology" smoothes out large in-rush currents, avoiding nuisance tripping of Circuit Breakers.

- \$3,025

LSC ePRO

The ePRO embraces the physical characteristics of the ePAK but with higher specified enhancements. The ePRO is a 12 Amp per channel dimmer with a 40 Amp three phase plug and tail fitted as standard. Six different curve settings are available for each individual dimmer channel and are easily set up from the front panel controls. A variable speed fan control circuitry allows the fan to run

dependant on how hard the dimmer is working. The 120 Volt and Non-Dim selections on the Curve settings make this dimmer very versatile and desirable for the professional user.

- \$3,630

LSC iPRO

Utilising the same clever interfaces as other LSC Dimmers, the iPRO installation dimmer provides quick set up of DMX512 address, individual drive control over any channel, scene storage and a choice of 6 fade curves per dimmer channel. The iPRO offers 12 or 6 channels at 12 or 25 Amps per channel respectively, 100% duty cycle rated operation, temperature dependent fan speed and a multitude of mounting capabilities including floor or bench mounting, wall mounting, 19" rackmounting or hung from handrails or lighting bars. Output connectors can be either front panel sockets or internally wired screw terminations.

- \$3,630

LSC e24 System HOT SELLER

24 channel compact Dimming System, fully flight cased and ready to go! The e24 comprises 24 channels of LSC's ePRO 12 Amp dimmers hooked up through a very versatile patch system. Dimmers have the same functions as per the ePRO dimmer, but configured for 24-channel operation. The Dimmer Patch is a Series/Parallel arrangement providing two 115 Volt and two 230 Volt outputs per dimmer channel. Also included are 3 circuits of "live" patch outputs comprising two patch sockets and one 3 pin GPO per circuit. The Light Patch is a separate mounted module and contains the patch plugs hard wired to a choice of multipole connectors. Four, five or six-circuit wiring can be configured utilising 10 pole Wieland, 16 pole Wieland or 19 pin Socapex connectors.

- \$13,310

"Pressure from the Lighting Industry for a good self-contained small dimming system led to the idea for the e24. At that stage, no manufacturer in Australia produced a marketable product to fulfil this demand, so LSC decided to adapt its current new designs for the ePRO and TDS dimmers into a comprehensive small package – the e24!"

First shown at ENTECH in March 2000, interest soon exceeded initial expectations and further development proceeded to cover the wide-ranging cabling systems on the world market. Orders for more than 24 units were placed at either the show or the months proceeding and this has grown to now include sales into Asia, Germany, Switzerland and the Netherlands. The versatility of the product has now made the e24 a desired choice for touring, theatres and corporate and industrial work."

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CAMCO's DX-Series (left) sets new standards: high performance power amplifiers based on the worldwide industrial standard – rugged and reliable engineering, accurate and neutral acoustic properties. Quality made in Germany on the basis of CAMCO's many years of experience as a worldwide exporting company. The DX-Series meets the requirements of sound reinforcement systems head on, then raises the standard so others can only try to keep up.

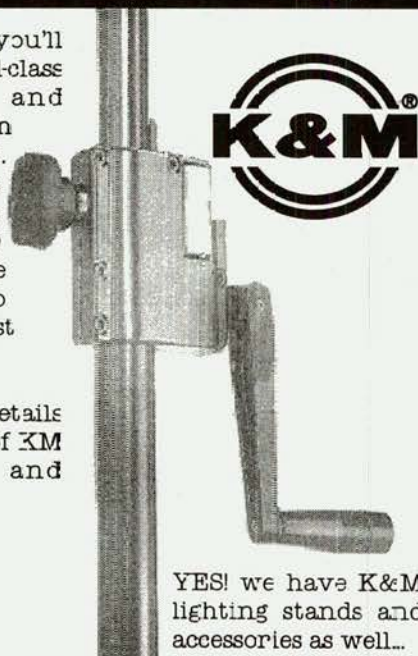
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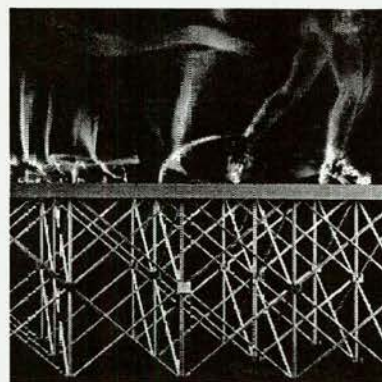


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RECORDERS

This market is heading down the consumer path, as everyone everywhere who makes a noise seeks to record it. Proliferation of cheap software and virtually ubiquitous sound cards on PCs has opened up consumers eyes to semi professional solutions. Now, firmware boxes from Japanese pro audio manufacturers allow anyone to record 8, 16 or even 24 tracks to hard disk without more than a few hours practice. At the top end, Euphonix and Fairlight offer 96kHz sampling rates, but the 24-24 is the new pro hot mover, with solutions from Mackie, Tascam and Fostex available right now.



Roland VS-840GX

An 8-track digital studio workstation (above) with an internal Zip250 drive for storage and playback. 4-tracks can be simultaneously recorded and 128 Virtual Tracks can be recalled instantly. \$2,795



Yamaha AW4416 HOT SELLER

44 input fully automated digital mixer, a 16 track 24 bit Hard Disk recorder, 2 x 8 note sampler and the ability to record 'red-book' audio CDA's from the optional CDR. \$7,495

RRP inc. 12GB hard drive. Digital mixer technology drawn from the ENTECH award winning O2R.

Yamaha MD4s

(Not pictured) A Mini Disc 4 track multitrack recorder. 4 channel mixer, each channel featuring 3 band EQ and 2 aux sends. Uses Mini Disc Data format discs. \$1,695

Yamaha MD8s

(Pictured, left) Mini Disc 8 track multitrack recorder. 8 channel mixer, each channel featuring 3 band EQ and 2 aux sends. 2 Microphone XLR inputs with inserts. \$2,645



Roland VS-890 HD

An 8-track digital studio recorder with 16-channel automated digital mixing capabilities. 8 tracks can be recorded simultaneously and data storage is on internal 2.5" IDE HDD. New 24-bit A/D and D/A converters and a VSR recording mode provide pristine audio quality and a dedicated CD-RW Mastering button. Pictured below, \$3,695



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Recorders



Roland VS-1880HD

18-track digital recording workstation (*above*) featuring 18-track simultaneous playback, 8-track simultaneous recording with 288 Virtual Tracks and a 28-channel fully automated digital mixer with Auto-Mix. New 24-bit A/D and D/A converters. \$5,295

Roland VS-2480

"The world's first self-contained 24-track/24-bit/96kHz digital recording workstation with 24-track playback"; 16-track simultaneous recording and 384 V-Tracks. "Drag-and-drop" editing is possible using included mouse. Mixdown mode provides 64-channel of fully automated digital mixing with 17 motorised faders. RRP, Release Date March 2001



FOSTEX VF-08

This 8 track digital multitracker (*above*) offers intuitive recording with up to 24 tracks - 8 plus 16 'ghost' tracks. Up to 2 hours of 8 track recording time on one 5.1GB hard drive (supplied). \$1699.

FOSTEX VF-16

16 track digital multitracker (*below*) with non compressed recording to internal hard drive, 8 track simultaneous recording from analogue inputs, and two inbuilt multi effectors. Priced at \$2899 with 10GB hard drive (upgradeable)



Tascam US 428

HOT SELLER

A major innovation in USB-based audio. Start with a fully 24-bit front end, with two XLR inputs, two balanced 1/4" TRS inputs, two unbalanced 1/4" inputs (switchable to Hi-Z), and S/PDIF I/O.

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It's even got 32 channels of MIDI I/O. Use one for your keys and modules, and the other for MTC, to lock your MTC-capable tape tracks to your computer.

The US-428 comes bundled with Steinberg's Cubase VST audio recording/MIDI sequencing software.

\$1269, PC software available now, Mac versions now or soon.

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Recorders

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And the rest of the market, in a nutshell

We put this feature together over the Christmas break, which probably explains why Yamaha Music Australia, alone, responded to the call for information on time.

The modular digital multitrack of yesteryear is almost dead and buried, Tascam sell the DA-78 HR still (\$6,999). The advent of the 24 track, 24 bit rack mounting hard disk recorder has changed the face of the market. After delays, Mackie's HDR-2424 (below right) is shipping, and at \$10,995 selling well. Tascam's MX 2424 (below left) is also an outstanding success, at \$8,999 - and offers waveform editing without an external computer. The new Fostex D 2424 (top right) sells for even less at \$7,699, but needs an outboard analogue to digital converter if more than 8 inputs are desired.

Roland, Sony and Yamaha all have 24 bit hard disk solutions either ready or on the way, and really - when you think about it - the future is really only limited by disk space. Watch for 48 track versions anytime soon.

Fairlight released the 24 and 48 track Merlin last year, Otari's popular 24 track, 24 bit Radar has split itself into two separate companies, and Euphonix have sold their 48 track R-1 recorder to



facilities serious about 96kHz recording.

DigiDesign continue to lead the Mac recording market, Steinberg, Ensoniq and Sadie all do battle and win plenty of business where people need to do serious multitrack waveform editing.

Cards? There are 1001 PC cards out there!

Overall, multitrack recording will never be this inexpensive. - Julius Grafton



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SENNHEISER

By John Grimshaw



Sanyo PLC XP30

Introducing the first in a series of bench tests of projection systems, where John Grimshaw puts a projector through a series of standard tests to see how it stacks up. This month, the Sanyo PLC XP30. This is the latest offering from Sanyo for the corporate and installation market. The projector is a 3000 ANSI lumen, 3-panel 1.3" LCD device.



Signal inputs and outputs

Brightness:	3000 ANSI Lumens
Imaging Resolution:	1024x768
Imaging Type:	3 panel 1.3" LCD
Lamp Type:	250W
Lens Optics:	F1.4 - 2.1 with f48.4 - 62.8mm motorised zoom
Focal Distance:	Min - 1.4m (31'40") Max - 14.4m (308',400")
Dimensions:	316x430x164 (WxLxH)
Physical Weight:	9.2kg
Speakers:	2x 2" RMS
Vision Inputs:	Composite; S-Video; Y,Pb/Cb,Fr/Cr; DVI 24pin; 15pin HD C; 5x BNC RGBHV
Vision Outputs:	Composite; 5x BNC RGBHV
Vision Source:	All standard TV, HDTV, and computer signals up to 1280x1024
Other Features:	Cordless Mouse Laser pointer in Remote/Mouse handset
Operation Noise:	57.3dB (C Weighted @ 150mm from exhaust)
Temp at Air Exhaust:	57.1cdeg (after 30min - 17.6deg ambient)
Price:	\$19 999 (list incl GST)

Set-up was quick and intuitive, and the unit was up and running a composite signal within minutes. On first turning on the unit, one of my first impressions before I even adjusted picture settings was 'good colour saturation'. Using a few set-up programs to adjust the picture, I found the image quality to be quite good. There was ample contrast, and the projector was more than capable of dealing with difficult ambient conditions. Colour balance was entirely under the control of the user, with level controls for each of the RGB colour outputs.

During the set-up, the projector only fell down on a couple of the test images that are designed to be hard for a projector of this type to cope with. One of these tests involves displaying a computer-generated tight pixel grid in the native resolution of the projector. Some projectors have difficulty in displaying this kind of image without generating a visual electronic distortion across the display area. While the XP30 did not pass this test, there are very few projectors that do. The distortion looks like random electronic noise in the pixel grid.

With the picture as close to perfect as was needed for the test, I inspected the actual pixels displayed on the screen and found a surprising little problem. The actual red, green and blue pixels seemed to be very slightly mis-aligned. On closer inspection, and with some adjustment of the projector, it seemed to be that the red and blue pixels where in fact correctly aligned, but there was a less-intense optical duplicate of the red and blue pixels on either side of the main RGB pixel (see pixel picture).

The result of this distortion means that the crispness of an image would be somewhat compromised. This particular problem is common to a few 3-panel LCD systems and is usually caused in the process of overlaying the three red, green and blue light streams into one beam. So, in this particular case, the benefits of greater colour saturation and contrast that three panel LCDs generally provide would be compromised by a very slight degradation in crispness.

I then set out to see if this distortion was visible at viewing distance. With broadcast and DVD video signals on composite or S-

Video input there was no visible difficulties introduced by the optical pixel shift (in fact, it is not unlikely that the effect 'smoothed' the picture). During display of computer generated images, the problem had a greater chance of being visible, and it did seem the image was a little 'soft' in areas where there were white and black details areas – most notably on text. In any case, the problem remained very subtle.

Some Key Features

As mentioned previously, the projector's picture controls also included individual RGB level controls – an important consideration for installation projectors as it allows precise colour temperature control.

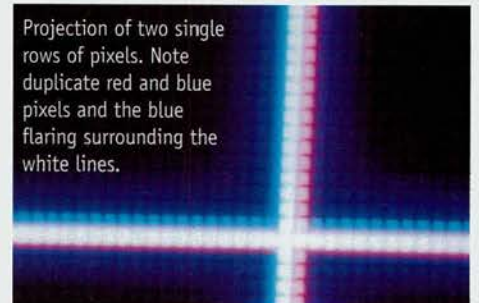
There is also a digital keystone feature. While you should always attempt to set the projector up in a situation that does not use this feature (the best image quality always involves having as little digital manipulation of the image as possible), this correction goes to impressive extremes and would be very useful for correction in installations where extreme angles cannot be avoided.

The "No Show" feature is a good addition to the system. It allows the projector to blank the input screen to hide the display image until required. This feature can also be activated by the remote.

Conclusion

This is a very capable projector, and would suit the vast majority of installation applications where better than 2000 ANSI lumens is important (the XP30 is rated at 3000 ANSI lumens). Ease of use is a big plus. I thought the amount of zoom in the standard lens was a bit limited (see chart), and the optical pixel mis-alignment was the only significant problem.

Projection of two single rows of pixels. Note duplicate red and blue pixels and the blue flaring surrounding the white lines.



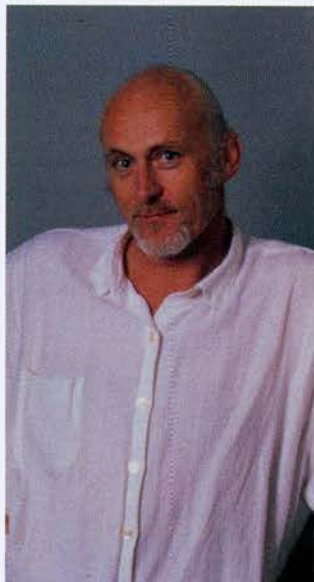
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CHARTS

SONG TITLE: Jonathon White
ARTIST: Danielle Spencer
PRODUCED AND RECORDED: Vince Pizzinga @ Beamo Music, Sydney
MIXING: Andy Bradfield @ Mangrove Studios, Gosford
MASTERING: Bob Ludwig @ gateway mastering, Maine, USA
PROGRAMMING: Vince Pizzinga
REMIX: remixed by Sam & Nick Littlemore @ Floating Point Studios, Sydney. Produced by L'more and Martin Eckel. Mastered by Don Bartley @ Studios 301



SONG TITLE: Bruce 2000-A
 "Special" Tribute-The Twelfth Man-
ARTIST: Billy Birmingham
ENGINEER: David 'Froggy' Froggatt
 "This piece of stupidity was put together for the radio show I did with Mick Molloy during the Olympics called "Going For Bronze". It was recorded in the bedroom cupboard of my hotel room at Quay west Apartments - Room 1302. Apologies to the people in 1301 and 1303." B.B (12th man)



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New South Wales

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Red Eyed Frogs	Red Eyed Frogs/Dave Highet		Album

Damien Gerard Studios Marshall Cullen +61 2 9555 2710 2" 24 track Analogue/Pro Tools Digital			
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Gerling	Gerling	Russell Pilling	Vocals

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Jerk	Lamar lauder	Greg Clarke	Album

Festival Studios & Mastering Suzanne hill +61 2 9395 8070			
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John Needham	John Needham	Jorden Brebach (E)	Demos
Paul McDonald	Jorden Brebach (E)	Voice Overs	
Mick Ruddell	Band	Jorden Brebach (E)	Demos

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Adrian Ayre	Adrian Ayre	Meredith Brooks	EP
Nikko	Nikko	Meredith Brooks	Single
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Bruce Mathiske	Bruce Mathiske	Meredith Brooks	Album

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Fields	Rod Cockle	Danny Golightly	Album

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Kick Start	Kick start	Allan Lahey	Demo

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Fishers Of Men	Eric Vandersande	Eric Vandersande	Remastering
Eat Like Flies	Eric Vandersande	Daryn Kenny/ Eric Vandersande	Demo Mix
The Greater Good	Andrew Hines	Andrew Erhardt/Andrew Hines	Demo Edit

SONG TITLE: Chances Are
ARTIST: Invertigo
PRODUCER: Charles fisher and Ralph Carr
ENGINEER: Charles Fisher
STUDIO: Standard HQ, Melbourne
MIXING: Chris Lord-Alge @ Image recording, Hollywood
MASTERING: Bob Ludwig @ Gateway Mastering, Maine, USA
REMixing: The Leigh brothers @ Standard HQ



SONG TITLE: Rainbow Eyes
ARTIST: Jimmy Christo
PRODUCER: Ant Dale and Vince Deltito
ENGINEER: Ant Dale and Vince Deltito
ASSISTANT ENGINEER: David Tymoszuk
PRO TOOLS EDITING: Andy Shanahan
STUDIO: Kick studios, South Melbourne
MASTERING: Martin Pullan @ Edensound Mastering
ADDITIONAL PRODUCTION: Andy J & Darren Glen. Mastering by Ross Cockle @ Sing Sing.



CHARTS

NATIONAL TRACKING GUIDE

SONG TITLE: Chain Of Fools
 ARTIST: Jimmy Barnes
 PRODUCER: Don Gehman for
 Rhapsody Productions
 ENGINEER: Mark Dearnley
 ASSISTANT ENGINEER: Howard Karp
 STUDIO: Royaltone Studios, North
 Hollywood
 MIXING: Mark Dearnley @
 Woodcliffe studios, Sherman Oaks



SONG TITLE: Crank The System
 ARTIST: Superheist
 PRODUCER: Kalju Tonuma
 ENGINEER: Kalju Tonuma
 PRO TOOLS: Andy Baldwin
 ASSISTANT ENGINEER: Jimmy
 Maroudas
 STUDIO: Sing Sing, Melbourne
 MASTERING: Steve Smart @
 Studios 301



South Australia

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Ikon	Chris McCater	Adam Calaitzis	Album Mixing

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Arbitrator	Neil Gray/Arbitrator	Neil Gray	EP

Wombat Rd Recording Studios Barrie Clissold +61 3 5145 4204 24 Track Digital + Full Digital Mastering			
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Jenny Owen	Barrie Clissold	Barrie Clissold (E)	Compilation CD
Jim Taylor	Jim Taylor/ Barrie Clissold	Barrie Clissold (E)	Demo CD
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Western Australia

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Gyroscope	Laurie Sinagra	Laurie Sinagra	Tracking
Rumpus	Rumpus	V/c Manfrin	Demos
Vanessa Rafaela	Vanessa Rafaela	V/c Manfrin	Demos

Satellite Recording Studio Darren Halifax +61 8 9470 4003 Pro Tools Mix Plus			
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Derek Goodwin	Darren Halifax	Darren Halifax	Demo
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Other/Film/TV/Post Production

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Hong Kong Museum of art	Narrowcaster	M Duffy S Ryan	Audio Guides
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SONG TITLE: You Can't See
ARTIST: Groove Terminator
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ENGINEER: Noel Burgess & Juan Bolomey
MIXING: Simon Lewicki
STUDIO: The Dog House
MASTERING: William Bowden @ Festival
REMIX AND ADDITIONAL PRODUCTION: Apollo 440



SONG TITLE: Everything You Need
ARTIST: Madison Avenue
PRODUCER: Andy van Dorselaer & Cheyne Coates
ENGINEER: Mark Rachelle
STUDIO: Backbeach/Elevation Recording studios, Rye, Vic
MASTERING: Jo Carra @ Crystal Mastering
REMIXES: Mobin Master and Armin Van Buuren for Armin Audio



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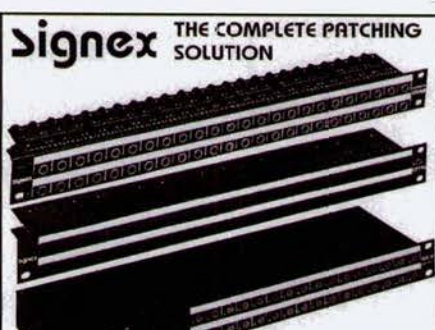
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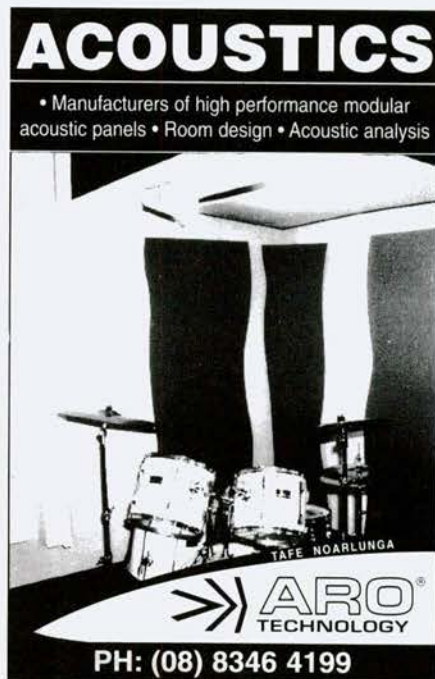
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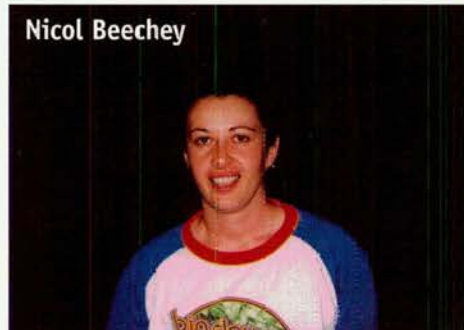
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Women in the Industry

Nicol Beechey



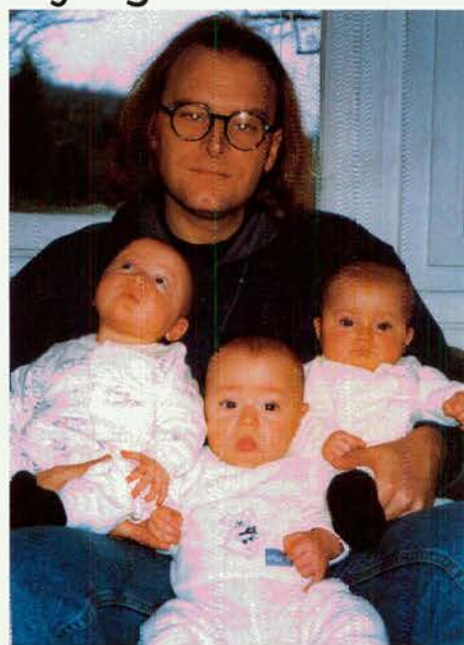
Profile by Mandy Jones

Nicol Beechey's entry to the industry is an all too familiar story. One night in the early 80s she was watching a pub band when someone grabbed her and begged 'We need someone to do lights!'. Without any prior lighting experience, Nicol found herself up on stage commandeering the switches on two 'Kambrooks', and loving it.

Having sparked an interest, Nicol began to do lighting for small bands around the Brisbane pub scene. Initially they were basic operation gigs where she would just turn up and use whatever was patched into six channels, but as her knowledge and interest grew, Nicol began to widen her experiences.

"I learned how to push roadcases, so I pushed them for a while, and then I finally got to open one up," Nicol summarised.

Trying Far Too Hard



Walter Ruhrig, creator of AKG's Tri-Power D and Tri-Power C series, created his own Tri-series with the birth of triplets last year. We think he is taking the "Tri" thing just one step too far.

From there, she got her truck licence and started gig driving as well as doing lighting and audio. At the same time she was working at a university radio station 4ZZZ as promotions co-ordinator and learning radio production. Beginning to spend more time on gigs in theatres and cabaret venues led Nicol to a major realization - "roadies don't run the stage in theatres - directors do," so she enrolled in a technical theatre course at QUT to fill in the blanks.

"I learned how to put a production schedule together and how to make a prompt copy, plus all the non-traditional type skills so I was suddenly swinging hammers and very involved with set construction. I was always going to work either in advertising or in psychology, and then this came along and I realised just how much psychology there is in stage management and production management."

One of the lecturers at QUT David McCrudden had a significant impact on Nicol and is still very much a mentor to her.

"David would lecture us about communication and conflict resolution and we would all be wondering what that had to do with technical theatre, and then the penny dropped. This industry is all about dealing with incredibly stressful situations and the effect adrenalin has on different people. I realised I didn't want to specialise in lighting or audio because I was better at managing how those and all the other production areas come together."

Nicol moved to Melbourne in 1990 and worked consistently in bump-in/out crews and touring. One of her career highlights was being technical manager for the dance parties at the docks. For the last three years, Nicol has worked at Melbourne University's Union House theatres as Production Manager where she works closely with students on their shows in a mentor capacity as well as dealing with the production requirements of external hirers.

Throughout her career Nicol has seen the highlights and the depths of what this industry, and the people working in it, have to offer. In 1987 Nicol was refused work on a Wall of Voodoo load-in despite being specifically sent by her regular loading agency, and after driving three hours to get to the gig with a male loader. The only reason given by the tour manager was "Sorry luv, we don't take chicks". Nicol was forced to sneak into the venue and wait in the bar for her friend where she experienced the "weird" behaviour of the all-male crew including lots of pants-dropping and generally dangerous work practices.

"The best working environments are with

continued on pg 71

? Helpline

Running a 240V lamp at 250 volts does what?

Answering this question is actually slightly more complicated than, "It gets brighter."

The four most significant effects of over-running a lamp are increased power consumption, increased light output, increased colour temperature and decreased life of the lamp. However, for your 108.5% increase in wattage and 120% increase in lux, there is a significant reduction in lamp life to around 60% of rated life (all figures are approximations).

When you consider that there are MANY areas supplied with power well over 240V, and the exponential decrease in lamp life as a result of this, there is reason for buying shares in a company like Philips or Osram.

You can fix this by having your dimmers 'trimmed' back so their top voltage output is 240V. However, if you are going to go to this trouble, why not trim them back to 230V? The decrease of 91.8% watts, 90% lux is offset by 185% increase in lamp life - all for a 5% volt drop (all figures are approximations).

So, how do you calculate how much to trim? If you can control the output by entering a percentage amount into the software control of a dimmer, measure the actual voltage of your supply and use the following formula:

Actual Volts + 230 x 100 = Decrease%

If making the adjustment requires opening the dimmer, get a qualified technician and tell him/her your required maximum voltage.

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The Great T-shirt Attack of 2001

Forget the pod doors, Hal. Open the wardrobe doors...

I was the unsuspecting victim of a terrible crime over the holiday break. No, I didn't get mugged or car-jacked, but it was a crime that I'm sure is very common for those of us in the entertainment industry.

As I walked down the hallway at home one evening, after a hard day at the coalface, I tripped over a big plastic garbage bag.

"My goodness, what thoughtless person has left this jolly old garbage bag here?" I asked (or words to that effect) after the pain in my twisted ankle had subsided a little. "What's in it anyway?"

"Nothing, just some old clothes for the Brotherhood bin," replied her indoors, a little too casually for my liking. "Can you put it in the car for me?"

I heaved the bag up to my shoulder and naturally enough, only being designed to carry 25 kilos of garden refuse, it ripped open. Horror of horrors - out tumbled my complete collection of t-shirts! "Aaagh - what are you doing with these?" I yelled "Nooooo...not my Acapulco restaurant margarita t-shirt? My Indianapolis 500 Pit Crew? George Thorogood Tour 1976? The Pete Best Beatles? And my Lookout's shirt from the Titanic? These are all my favourites," I cried, sobbing into the black bundle.

"We need more space in the wardrobe" she said brusquely, hastily bundling them into a new bag.

"You've got way too many t-shirts in there. I just weeded out some of the old and dirty ones."

"We need more space in the wardrobe!" Is there a married man who hasn't heard those weasel words? It must rank up there with "We need to talk" and other hidden agenda favourites. It doesn't mean 'we' at all; loosely translated it means 'I need more of your space in the wardrobe!' ie. more of the 10% of wardrobe area begrudgingly allotted to the male half of the family's entire clothing collection. And they're not old and dirty; that's just their owner. The t-shirts are full of character and memories.

Look, I'd be the first to admit that I had quite a few t-shirts, but who hasn't in this business? The trouble is you can't help accumulating them. Souvenirs of trade shows, concerts, good times, trips to places you're unlikely to visit again - for me the ideal memento is a t-shirt with a poor taste or humorous message on it, and preferably black.

Where t-shirts are concerned, I'm with Henry Ford - you can have any colour you like as long as it's black. It is a good colour for t-shirts, especially those that you work in. No matter how much grease and dirt you get on it, it still looks black.

The only way I'll ever keep a white t-shirt clean

is to never wear it. Some people are just naturally clean - put them in a white shirt and they could probably wear it all week, and apart from the smell it would still look like it has just leaped out of a TV commercial.

Not me though. Dirt seems to be magnetically attracted to anything I'm wearing, rather like that Pigpen character in early Peanuts cartoons. (I think he was later politically correctly re-named George or something so dirty people or pigs wouldn't be offended).

So black features strongly in my t-shirt colour scheme, although I do get a twinge of Spinal Tap-ishness when I see them all lined up waiting to be chosen in my soon-to-be 5% of the wardrobe space. Let me see, what will it be today - this black one? Or that black one? Or the other 'other' black one? Or maybe this ebony charcoal one, just for a change?

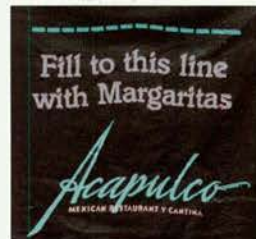
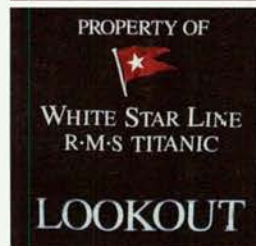
T-shirts are a common form of currency at trade shows - I'll swap you an ARX for an EAW plus a coffee mug, although there is a disturbing tendency lately for them to be replaced by polo shirts, which represents a further example of the corporatization of the pro audio business. Mind you, I do confess to a slight conflict of interest here - as a manufacturer I much prefer handing out t-shirts, since a polo shirt costs twice as much!

And there is really only one size worth considering, and that's Large or Larger. People will happily wear a t-shirt that's too big, but hardly anybody would wear one that's too small, unless you happen to be a model with a figure that would look good in an old potato sack. I'm watching an Elle McPherson special on TV as I type this - a good case in point, since she's someone who would look good even if she was wearing a potato sack and a sumo-wrestling suit.

For all the rest of us who look like we wear a sumo-wrestling suit fulltime. XXL is the only way to go when choosing a t-shirt.

So, in the end we compromised at home. I said that if I threw the t-shirts away she could have the extra wardrobe space...wait a minute - that's not compromise, that's total capitulation! What was I thinking of?

Just as well I lied and didn't really throw them away. I've got the plastic bagfull of them hidden behind the back seat of the car, because I'm pretty sure the style police are hot on my trail with a bunch of taupe, slate and mauve polo shirts, but I'll hold out as long as I can. I've photographed all the t-shirts as well, so if anything happens to me and you see them, you'll know where they came from.



by Graham Walne

So, You Want To Go Freelance...

What kind of person are you? How well do you know yourself? These may seem odd questions in a publication devoted to entertainment technology but I submit that the answers can help us produce better work and with less stress. More and more business studies are picking out stress as a major obstacle to efficiency and a consideration of how we relate to our work can help.

For example I'm a 'morning' person in that I awake somewhere between 5 and 6am and my brain starts functioning immediately, so articles like this are usually written at that time. However, catch me at 11pm and you'll notice a decline! Such awareness can be informative. For example when lighting in Boston the stage was used for rehearsal from 11am till 10pm so I focussed from 7am till 11, not a problem for me bright eyed and bushy tailed. My director on the other hand was a 'night' person and wanted not so much to plot but to play with lights all night, I refused because I knew I wasn't able to do good work at that hour, my director respected my decision but with some muttering.

Tuning in to your body clock can help you understand when you should schedule certain tasks, in some cases there are safety implications here too. Years ago at one UK theatre the crew worked from 9am till 11pm on Saturdays on either 2 daily panto shows or 3 daily performances of variety, then we would work all night to strip these shows out and install sets and lighting for the following day's live TV show. The briefest of naps would then see us rehearse all day Sunday before reversing the process ready for the Monday's panto or variety. Not surprisingly sometime we were rather dazed and I well remember wiring up a live plug one night before thankfully realising just in time.

Other aspects of our characters are our need for financial security and our ability to work as a team. These tend to go together. A staff position in a theatre requires that some degree of subjugation to the management is essential in return for a regular income. The alternative is to be freelance, your 'own boss', but accept an erratic pattern of earnings (and outgoings too).

Being freelance means that, whilst you still work in a team, you are responsible for your own destiny, the decisions you make will affect your future more so than had you been on the staff where someone else makes the decisions about your future.

Freelance people (such as article writers) work for long periods alone, if you need others around you then don't go in for this kind of life. Some people aren't good at organisation and if this is you the long term success of your freelance career could be at risk because freelancers need to be supported by efficient diaries, accounting systems and archives.

A freelance life seems attractive for many reasons. High up on the list is the potential income - freelanc-

ers can charge by the day what staff people earn per week. However, staff people don't have to carry their own insurance and superannuation, pay solicitor and accountant fees or pay for their own equipment. It's no comfort either to say these are all tax deductible, as a freelance these overheads have to be paid for by you before they can be deducted!

Another myth arises from the tempting projection that $\$X$ multiplied by Y days = a lot of money. In reality few freelancers earn income 5 days per week. For example I spend 1 day each week simply doing administration, the filing and the unavoidable accounting. I also spend 1 day per week researching new projects or meeting prospective clients. This means that I'm not earning money during these 2 days and so the other 3 days have to pay for them.

If you are still lured by the freelance life don't put too much trust into the early promises of prospective clients, most will evaporate before you fill in your first BAS. Most big jobs discussed dreamily over the chardonnay will turn out to have a catch somewhere. Life is complex - sometimes well intentioned clients have to delay projects at the last minute because the star is ill, the grant didn't come through on time or the theatre turned out to be double booked. All these have happened to me and they had a major impact on my cash flow. There is a current concern that small businesses will borrow from the money they have collected for GST and PAYG to overcome temporary difficulties, don't do this, the money isn't yours it's the Government's, so keep it separate and keep your own contingency for unexpected problems.

For this reason it's unwise to splash out at first on expensive letterheads, offices and equipment, start small and let the business build with the work. Don't embark on an ego trip of self promotion, it's good to see your name in print but if no-one knows you it's not cost effective, wait till they do. Instead ask yourself why you are different from your competitors, why should I choose you and not him or her? Sell the difference.

Study the market and assess how your skills can fit in. In this there's a hard choice, to diversify or specialise. The former ensures regular work and a steady income but perhaps not the stardom of the latter. For example when I went freelance in 1974 I put out feelers for all the things I thought I could do, write, light shows, teach and consult. To my amazement they all came back and have been doing so ever since, but because of this range, it's hard to explain what I do!

Australia's labour force contains more casuals than ever before and equally an increasing number of contracted-out services. If you are likely to fall into these categories, or are attracted by them do consider some of the points I've made above.

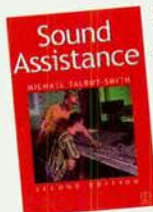
"...don't put too much trust into the early promises of prospective clients..."



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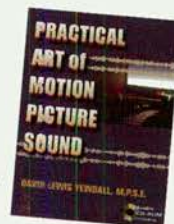
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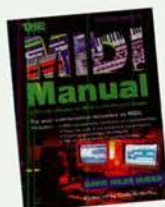
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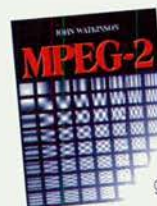
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LETTERS and ANNOUNCEMENTS

Births

John Andrews (Hire Manager of CLS) and wife **Erryn** gave birth to their first baby daughter, **Jamieson**, on Mon 4 December. Weight 8lb 15oz. All are doing very well. Thanks to all our well-wishers.

"Just a short note to let you all know that **Robyn** (my ex-girlfriend) and I had a 5 pound baby boy (**Joshuah Mark**) on Sunday 3rd December at about 12:30pm. Both are well.....and he is just adorable (not that I'm biased)."

Adam Townsend "Adman"
(adamt@pka.com.au)

Elijah James Bevan was born on Tuesday, 2 January 2001. Weighing in at 7 pounds 12 ounces, he apparently has everything where it needs to be. Both partner and son are doing great after a labour of just a few hours.

"Without doubt it is the most amazing experience in my life and I can't wait to get him home and growing up."

Lloyd J Bevan
Owner/Manager of Brite Lite Productions

Great Mirror Balls Of Fire

I agree with Moz in the last issue about SWL on mirror ball motors, but I would have thought that a more urgent issue is the number of DJ's/businesses still using key rings and other non-weightload-rated hardware to connect the ball to the motor. I have been witness to a number of these items giving way over the years, but little or nothing seems to have come about to solve the problem from a public or industry safety standpoint. I know a number of responsible people try very hard to do the right thing, but it seems there's always someone around with a 'she'll be right' attitude to public safety. I'd like to see the whole issue brought into open discussion with the relevant State/Federal industrial/public safety bodies, in an effort to solve this unsafe practice.

Peter Robins

More On Balls

And about time. Moz is on the ball. Infrastructure rated to 10 tonnes and the mirror ball motor is held together by those little tiny and brass rivets. I've seen 2 come down. The first at a corporate function. No damage, except to reputation. The second came down when a grid came in to reposition lights and the ball motor. Two inches from the floor the motors rivets parted and the 15 kilo 36 inch mirror ball dropped. A blessing in disguise actually. Later that afternoon we had 300

children on the stage. But the worst thing was it looked OK. And felt OK. And that keyring thing to attach the ball to the motor.....Another worry.....

John McFarlane
Manager, Technical Operations
Canberra Institute of the Arts Canberra School of Music

A Final Word on DMX Remotes

The ELC is from the Netherlands and I know they will hate being thought of as American. Also they have now produced the hand remote with back lit led buttons which help indicate button pushes etc.

John McKissock, Clearlight Shows

Lighting psychosis

Hmmmmmm, I can understand sheba girl's predicament (*Letters, Dec*)but....for me as a 'sensitive lighting person' (yes I do have one of those old T-shirts), I don't drink or smoke...any sort of smoke. I don't abuse any substance...except soft drink. I don't abuse my wife or children, and I've been happily married to the same woman for 11 years! I have been accused of being a prima donna sometimes, but usually it's where compromises are needed, and unfortunately it seems (perhaps mistakenly sometimes) that lighting is the first area to have restrictions or budget cuts placed on it. For instance, clients will hardly ever cut the budget for audio. They will slash and burn budgets for lighting first, then video (in corporate theatre), and finally audio. I know audiences have to hear everything clearly, but if you can't see fer sh.. what happens then? I thought we were all supposed to work together in this industry?

Perhaps we haven't got to that nirvanic state yet? Theatre clients usually work a bit in reverse, favouring lighting over audio, but it still seems to be lighting that gets slashed...probably because audio budgets are so low in a lot of theatre there's no head-room! I'm sorry sheba girl has met so many precious people in lighting, but some of us do try to come out the other side with a modicum of sanity...sometimes! Or perhaps our neuroses just mellow with age.

Peter Robins

Dolby Responds

I'm deeply sorry we wasted your time attending the morning session of our conference. The afternoon session concentrated on the technical issues regarding Dolby Digital and the digital broadcast standard in Australia and perhaps would have been more appropriate to your needs.

David Fraser, Dolby



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Women in the Industry - Nicole Beechey

continued from pg 65

mixed crews. I don't like working with all women or all men. I think it's to do with competition. When you have a mixed crew it's all about co-operation. The world is mixed so it's not a natural environment to be working in a same-sex environment.

Nicol says some of the worst treatment she has received in the industry has been from other female techs. Her worst example is a bump-out where she and another female tech stripped 1k profiles off a dress-circle bar, and for several hours Nicol had the profiles aggressively thrown rather than passed to her in some bizarre intimidation tactic.

"She was so aggressive, it went on for hours and I swear to god a few times I almost went over the edge. I really doubt she would have done that to a guy. She was testing me to see if I was going to crack, and although I didn't, I almost fell several times.

"An interesting thing about being a woman in the industry is there's no guarantee you're going to get along, or make a friend, or get any sort of support at all. And that was a classic example. It was a bad night and it still upsets me to think about it. I didn't know many people in Melbourne back then and I wondered if I was being tested out because I was stepping on someone's toes. I don't know if I did, but that tech was very threatened. It was definitely a competitive 'new girl on the block' thing, and she was just a bully.

"As a woman in this industry I don't think you get really tough until you're 30. I'm 35 now and when I hit my late 20's and early 30's I decided I'd been doing it long enough that I didn't need to justify why I'm doing this job. I'm doing it because I have the skills and I leave it at that."



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Selective Science

by Sid Kidman

How much would the people from Meyer Sound, EAW Systems, Martin Audio, and other big competitors have relished "V-DOSC on tour", from Julius Grafton, in *Connections* December/January 2001? Not much – I suspect!! Julius carefully describes the short comings of more conventional PAs, and how V-DOSC works, according to the manufacturers.

Well, I admire John Farnham, and I believe that the V-DOSC system sounded great, as it should, if properly operated. All due respect for the V-DOSC manufacturers for developing technology which can enhance the propagation of sound waves of the musical kind. But, this is where my admiration ends.

The problem

The V-DOSC team selectively talk audio sound theory, impressing the end user. A publication by Dr. Heil and Pr. Urban (no citation), who have refined the understanding of a sound wave front, appears to be at the heart of the matter. But! I think V-DOSC is quite similar to Meyer or EAW, with the problems being vertical, instead of horizontal. What we are really talking about is the angle subtended to any listener's ears, from the top/bottom/sides of any stack, where the same signal arrives from opposite points of that stack, within 6 dB of SPL.

In defense of my stance, I have to start with one of the two historical apples (fruity variety). Not Eve's, but the one which fell on Newton. Since Newton, the conventional laws of physics haven't changed much. In fact, not at all! Several of these laws apply to sound propagation.

Some theory

In a highly simplified analogy, the balls on a pool table can represent in a two dimensional image, the molecules of air which transmit a sound pressure wave. When the cue and cue ball are correctly aligned (in the simplest case) on a target ball, the cue ball will transfer its energy to this target ball in a straight line. Indeed, a good player can organize several balls to continue this motion, transferring energy in a straight line. Loud speaker manufacturers want to achieve this with sound (particularly for large venues).

When the cue ball is just randomly driven into a cluster of balls, the cluster just scatters in all directions. This is more like what happens when a loud speaker drives air molecules. At this point, the analogy must be qualified. It is much easier to do the straight line thing at high frequency, than at low frequency.

The simplest source (non existent) of sound radiation is the perfect point source. A point source radiates sound spherically (all directions), and no interference patterns occur. An interference pattern is where two sound waves of same frequency arrive at some point, but not at the same time. This results in anything from a 6 dB SPL increase, when closely in phase, to a complete null when 180° out of phase.

Consider two point sources spaced 100 mm apart (about a hand width), radiating at 4 kHz. On axis (directly in front), the sound power doubles, but at 25°

off axis, there is a deep null. If the frequency is lowered to 2 kHz, this null angle moves out to 60°. Once the frequency drops to where the wave length is significantly longer than the distance between the two point sources, there is no null angle.

The cone of a loud speaker can be considered to be an infinite number of point sources, for frequencies (in easy terms) that have a wavelength less than about twice the diameter of the loud speaker, and as a point source as the frequency gets lower, and the wave length much longer compared to the diameter of the loud speaker.

The next bit of theory

Whilst a point source radiates in all directions, an infinite number of point sources, all very close to their neighboring points, radiate a wave front. This is because all on axis radiation sums, and all other angles of radiation average out, and cancel. Here, it gets more complicated again. When this wave front is approximated by multiple loud speakers, a phenomena called lobing occurs (lobing is nasty variations in the angular frequency response of a loud speaker). It means that in a multiple loud speaker system, some frequencies from one loud speaker, will interfere with similar frequencies from another loud speaker at various points in space. This is not desirable.

It appears the previously mentioned authors, Heil and Urban, after investigating wave front propagation, have thrown light on just how to avoid this lobing problem, as have our very own Leembruggen and Connor¹. Leembruggen and Connor, in the paper cited, describe the development and installation of a sound system to deliver clear speech for our national house of parliament.

In conclusion

To sum up, once a PA rig becomes complicated with multiple loud speakers, chances are that various holes in the sound will appear in various locations, with respect to the direct sound. This is a deficit, and has been variously dealt with. One way is to attempt to confine discrete cones of sound to covering discrete listening positions. Wave front propagation does work, but all wave fronts have edges, which can't be perfectly managed. Newton's laws still apply, even to the V-DOSC cylindrical wave front phenomenon. V-DOSC stack their power vertically. (Incidentally, the acclaimed line radiation method was big in the 50s and 60s of the last century.) EAW stack their power horizontally (they can double up vertically anyway) as do Meyer and other systems.

As stated at the 2000 Entech big PA shootout last year, the top systems have vastly improved in the last few years, and the result was very much horses for courses. Look at all the science. Indulge your passion, or, choose your poison!

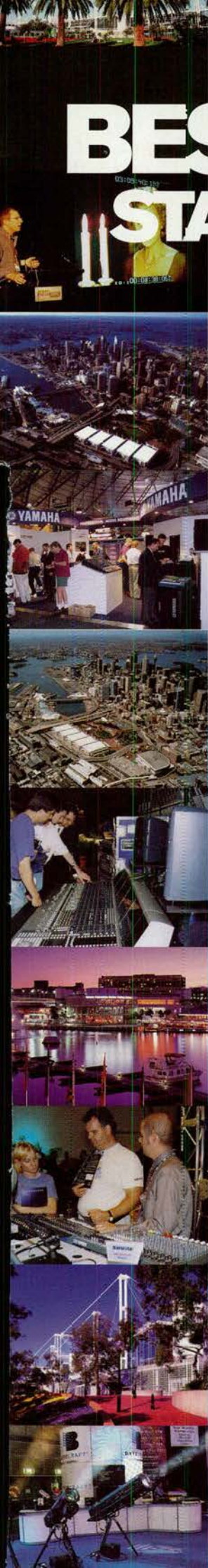
1. Leembruggen, G. & Connor, D. (1996) Design and commissioning of sound reinforcement system for the Australian parliament – A holistic approach. *Journal of the Audio Engineering Society*, 44 (10), 821 - 834.

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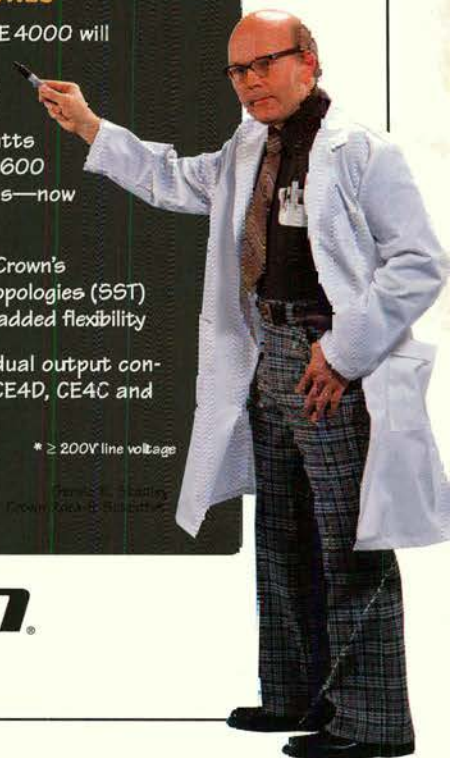
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