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MILLIONS INTO  
MOSHCAM

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album - *fast*

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money & offset  
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We show you how*

REVIEWED:

*Aviom ANet 64*

*Strand Palette VL 64*

*Yamaha IM8*

*Edirol P10 Visual Sampler*

*iLED LEDbank &*

*Pixel LED*

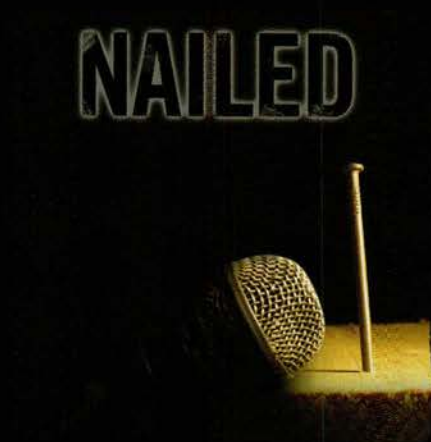
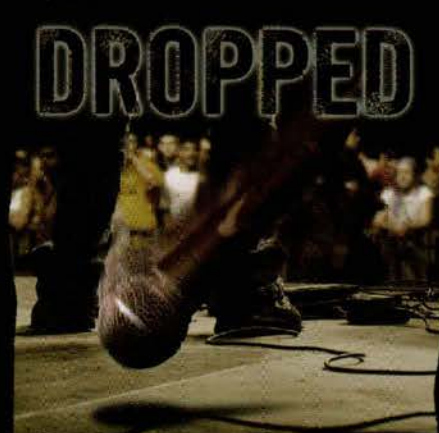
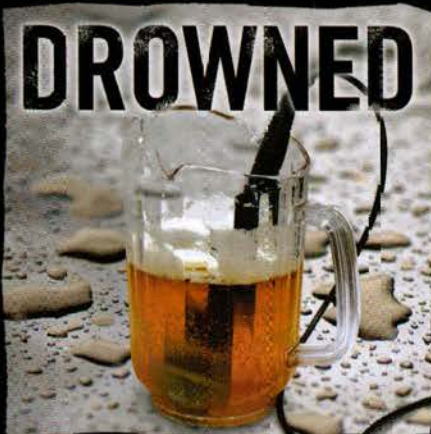
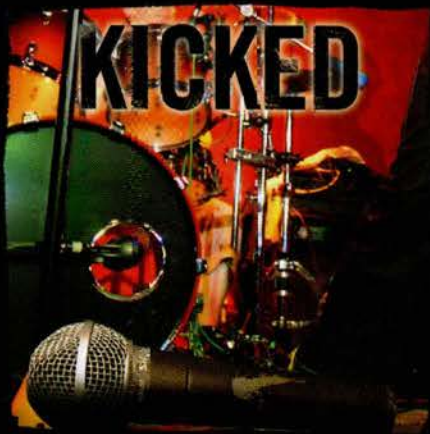
**CUE03** | Entertainment  
Training Resource

JuliusPublishing  
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**NEWS:** WE GO INTO THE FLIES, BEHIND THE DRAPES, UNDER THE STAGE AND THROUGH THE BIO BOX TO BRING YOU ALL THE LATEST IN PEOPLE, PLACES, GEAR AND GOSSIP.

Pic by BOB KING

**THE NEWS MAGAZINE FOR ENTERTAINMENT TECHNICIANS AND MANAGERS**



*No SM58's were harmed in the making of this ad. The images above are intended to depict situations involving Shure products, such as Shure quality tests or end-user experiences. To avoid possible damage or harm, do not attempt to replicate these situations.*

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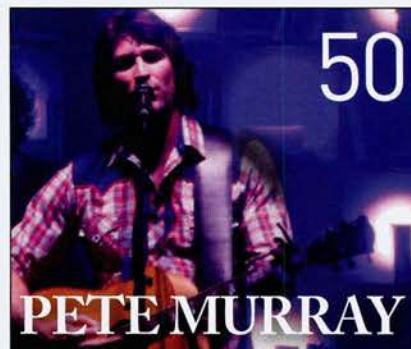
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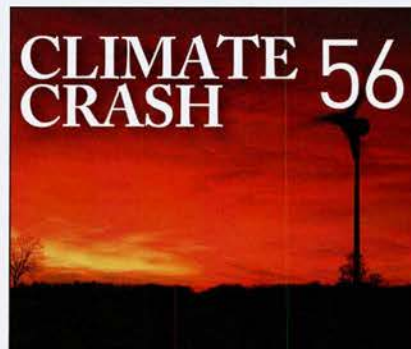
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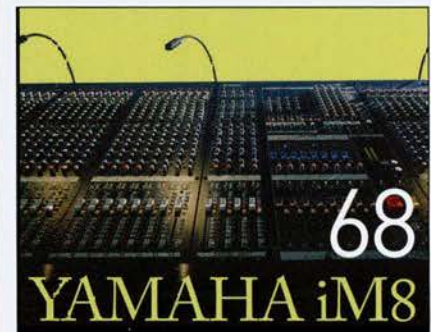
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thinking sound



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## CUE03

### Entertainment Training Resource

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

# EDITORIAL

## FAST MONEY

The credit crunch reminded me of a fabulous meeting we had at the long failed Spedley Merchant Bank in the late 1980's. My then partner Hymie Meyerson was convinced Spedleys wanted to throw millions into Australian Monitor. I wasn't sure, so we sat in this huge boardroom. A Doctor Wolff burst in. 'Is this a multi (million dollar deal)?' he snapped at one of his minions. Assured it wasn't, he kept walking - straight out another door.

## FAST CLAIMS

Same era, and I was in trouble with the advertising regulator for calling the Renkus Heinz Smart System 'fool proof'. An irate audio repair technician rightly asserted that nothing is beyond a fool, and took the trouble to dob me in to the feds. I went to a top law firm to plot my defence, and had a \$300 cup of tea in very nice china. They told me what they could have said on the phone: 'plead ignorance, be humble, don't do it again'.

## BROADCAST BAGGAGE

Checking in at the airport the other day, a news duo ahead of me had two trolley loads of excess broadcast baggage. Once the edit suites gear down to Firewire, all they need is a HD DV cam, a shotgun mic and a flash recorder. Same with some outside broadcast (other than top end sport coverage) - all those trucks, catering and lights ... sorry times if you work there, exciting if you are in this new era of getting things done. Look at Moshcam as an example.

## AWAG AND AMA

Hats off to the Australian Music Association, a properly incorporated association who've really delivered in recent years. Now they are the oversight body for the Australian Wireless Audio Group which is going hard yards with the government to try to protect wireless spectrum for entertainment use. This kind of sloggng is thankless and exhausting.

## LOVING LIGHTIES

Thanks for all the calls and emails about my lighting rant in the last issue. Seems there are many others who also despair at the I.T. mindset of some young lighties, who forget to light the dialogue in favour of revving up the effects engine.

*Julius*

## WRONG END OF THE STICK

Technology has changed dramatically since I first entered this industry. Back then 600W a channel was a big amplifier and thousand watt parcans were dazzlingly bright. Time marches on and technology improves, especially in terms of efficiency. Parcans and 600W class AB amplifiers both wasted plenty of energy as heat - modern gear is far more frugal. But what have we done with the improvements in technology? For a start, we've made everything brighter and louder. There can be no question that shows have got steadily brighter over the last ten years or so, and a disagreement I found myself involved in the other day emphasised the loudness issue. Back then, as loud as possible was just loud enough for rock and we ran everything right on the ragged edge. Now we can produce the same SPL without dragging the PA past idle, but there's still plenty of people acting like as loud as possible is just loud enough.

But have we got the wrong end of the stick? Instead of making bigger, brighter fixtures maybe we should be seeing the lighting manufacturers coming up with smaller, more economical fixtures that produce the same output. Similarly it would be nice to see audio focussed on getting clarity and coverage efficiently, rather than just going for loud.

## PUNTER TIME!

I went to a gig for which I had to buy a ticket last week. It took a little while to figure it out, but I realised that it's the first time I've actually been at a gig without some ulterior income earning motive for almost twenty years. And what did I find out in this extraordinary episode? That it's bloody good fun to switch off all the work stuff and enjoy a gig every now and again. It's easy to get jaded when you're living it day in and day out, but leave your work brain at home and go out - remind yourself why you started doing this in the first place.

*Andy*



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# CX NEWS

DEVICES, PEOPLE AND CONCEPTS

## MUSICLINK TURNS DOWN THE VOLUME

### COURT ACTION FOR HILLS CONCERT PRODUCTIONS

*A web of transactions and  
disputes about payments*



*Mackie products  
like the new  
Universal  
Controller -  
hit by shortages  
and distribution  
troubles.*

### *Slowdown means jobs 'disestablished'*

Melbourne based audio and music equipment distributor and retailer Musiclink, part of the Billy Hyde Group, have stood down several key staff and realigned their strategies in the face of difficult music retail trading conditions.

The group lays claim to being the largest business in musical instruments in Australia, with 400 staff and a turnover of around A\$100 million last year. Just 12 months ago, they acquired distribution of Mackie from an already strong distributor, and at the same time, restructured with significant investment from Crescent Capital Partners who now sit on the board.

At that point, ownership of Billy Hydes Music and Musiclink was consolidated,

with founder Garry Hyde, and major stakeholders Miles Jackson and Mike Daws all remaining on board, joined by Crescent. The group was renamed 'The Billy Hyde Group', and a program of expansion was mapped out.

Billy Hydes Music operate company owned and franchised music stores across Australia, while Musiclink import and distribute equipment to music stores, many of which compete against Billy Hyde stores. Just prior to announcing the consolidation of ownership between Billy Hydes and Musiclink, the company sought to portray each entity as entirely separate.

Recent key departures include Mackie specialist and Pro Audio Division head Peter Bayfield, and national sales manager Rob Henneman, who left suddenly early in September. Their positions were 'disestablished'. Rob Henneman's farewell

*Continued page 10* ▶

In Sydney Hills Concert Productions has morphed into HCP Events. It's a story about money, and how one day a sound, lighting and staging company can disappear, and then emerge the next without accounting for a court debt.

Sydney based production company Hills Concert Production Pty Ltd has lost a legal action alleging non payment for transport supplied by Australian Touring Services Pty Ltd. ATS claim that they transported equipment to far north Queensland for Hills Concert Productions for a JJJ concert, and were not paid. They obtained a court judgement \$18,225.43 after Hills director Paget Blackburn failed to attend court. Previously that he had cross claimed against ATS and made representations alleging disputes (including sexual harassment) which were not fully heard by the court.

Following judgement, court sheriffs attempted to recover goods from the premises where Hills Concert Productions had been listed as trading. They reported back to lawyers for ATS that they had been told that Hills Concert Productions has no assets. The entity appears to now be trading as HCP Events, from the same premises, with a similar website. They claim credits for work with Triple J, City of Sydney, and the Toto 2008 world tour.

Another company which appears to be controlled by Hills/HCP director Paget Blackburn had in the meantime signed a hire purchase agreement for a Kenworth T350 12 tonne rigid truck. Blackburn Engineering Services Pty Ltd agreed to pay \$233,474 for the truck. The financier is PACCAR Financial Pty Ltd, who took a mortgage over a property at Kenthurst in Sydney's north as security.

Blackburn Engineering Pty Ltd isn't the only engineering firm that Mr. Blackburn

*Continued page 10* ▶

# iLive



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Allen & Heath iLive:  
Easy Listening

Allen & Heath's iLive digital mixer makes set up in any venue a whole lot easier.

Position the iDR10 rack on stage and an iLive surface at FoH, connect them with a pair of Cat5 cables, and recall your settings from onboard or a USB key.

Within seconds it'll feel as familiar as your old analogue desk, and with sound quality you never thought you'd hear from a digital console.

**ALLEN & HEATH**

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...*Musiclink story continued from page 8*  
letter said: "I'm tremendously proud that we achieved the things we did and I depart knowing my time at Musiclink has been well spent and, as a team, we made an already successful business an even bigger success."

His role as National Sales and Marketing Manager was abolished – Musiclink referred to this as 'disestablished'. Then a National Sales Manager was appointed from within the ranks, Mark Inglese.

As to Peter Bayfield, Musiclink director Mike Daws said: "he is no longer employed at Musiclink. Part of the issue here was/is the large amount of backorders that Loud (Mackie parent company) continue to be unable to supply us due to production capacity constraints. We have incorporated the Pro-Audio division into the Hi-tech division and have expanded this division with the addition of another staff member."

Ian Unwin, CEO of Musiclink rallied his staff. "The market remains tough right now, and we are missing our sales target by quite a long way, so we need to focus hard on generating sales and keeping costs tightly under control. Meeting our customer's needs efficiently and professionally has never been more important, so anything you can do to ensure that our customers get the product they want quickly, properly documented, and that we deal with receipts and payments the same professional way, is really appreciated." CX

...*Hill Concert story continued from page 8*  
has run. Westin Engineering Pty Ltd (also known previously as Needington Pty Ltd) had a liquidator appointed in 2006, after it failed to pay Wayne Spicer Electrical Contracting Services \$4,219.55 for electrical goods.

In June 2008, the company regulator ASIC fined Paget Blackburn two amounts, of \$550 and \$1,100 for failing to assist the official liquidator of Westin Engineering Pty Ltd.

Across town, Hoisting Equipment Services are similarly lined up in court against Hills Concert Productions. They allege they are owed in excess of \$8,500 for matters relating to the purchase of two LodeStar Chain Motors and the repair of others. Hills Concert Productions dispute the debt, and has cross claimed to attempt to reclaim several repaired hoists held by Hoisting Equipment Services. They had been asked to repair some hoists which were damaged by Hills, due to incorrect road casing.

That matter is now in arbitration. Jands Pty Ltd is owed \$9,031.83 by Blackburn Engineering, and has produced a statement of claim.

In September 2007, CX ran a story headed 'Day Rate Pay Dispute', where a crew member claims he was paid \$150 for 'day rate' on a Hills Concert Productions show - after working 9am until 3am. CX

## YING WEI LIGHTING OPENS IN SYDNEY



Ying Wei Lighting was founded in the early 1990's. It develops, manufactures and sells intelligent lighting equipment to the global market. One of the most successful companies in China's entertainment industry, Ying Wei Lighting is now setting up an office in Sydney to bring the best products at the lowest prices, all with a comprehensive warranty, to the

Australian market.

Products they are introducing include Moving Head, Intelligent scanner, Stage, Architectural, and LED. Currently their Moving Head 575/250 and LED moving head are been used in the Twenty1 Dining Room & Bar in Surfers Paradise.

Ying Wei is looking for dealers.  
[info@ywlight.com](mailto:info@ywlight.com) CX

## REALLY SIMPLE AUDIO THINGS WE REALLY WISH THEY WOULD INVENT!

*(Who are THEY, anyway?)*

**THING:** An inclinometer switch built into a female XLR

**DETAILS:** Plugged into a mic as part of the mic cable

**REASON:** Notice how some performers – even professional ones – drop their arm with the mic at the end of the song, and it points direct into the monitors and feeds back? And you get the blame? This handy device would just switch off the mic whenever it goes vertical! All we need now is an automatic spitball device to keep the drummer on his toes....

**THING:** A time delay in a powered speaker box

**DETAILS:** One knob with a little millisecond delay readout

**REASON:** So you can dial up a delay at the speaker when used away from the main system. Sure beats getting an external processor! Seriously, how hard would it be to build this in, if there's already an amp and processor on board?

**THING:** A clamp-on audio talking thing for microphones

**DETAILS:** Almost like one side of headphones with a way to fix over a mic

**REASON:** How often do you get someone to stand in front of a mic and go '1, 2, 1, 2, Test...?' This little thing would read out a number that you dial up, like this: 'Channel one. Channel one...' You could clamp one over every mic, and have them all talking into the mics with channel specific talking. Then just PFL each channel, all lines checked, one operator!

**THING:** A CD player in a digital desk. Derr!

**DETAILS:** You read it above. Derr!

**REASON:** Because those nerds who design things forget we real people need to play a CD sometimes, and for goodness sakes: WHY NOT? And why not spend an extra \$2 and make it a CD-R so we can also record the gig! And don't call us to remind us Yamaha let you record and play from a USB on some desks – it isn't a CD, is it? CX

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See page 73 this issue or go to  
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## MIDAS LAUNCH PRO6



### *A Heritage 3000 alternative for the rest of us*

The Midas XL8 leapt directly to the top of the large format digital live console market when it was released two years ago. Now the Pro6 appears to serve up serious competition for Yamaha and Digico in the 150 grand market segment.

It's been a long time coming, and if you believed some people it would never come at all. But things changed when Bosch acquired Midas, along with all the EV and Telex audio brands. That was a game changer, because Bosch isn't like the others – it is a very long term, strategic

conglomerate as opposed to a funny money fast guy mob.

The PRO6 standard system comprises a Control Centre with a footprint comparable to a 32 channel Verona and only two 7U 19" rack units. This provides up to 80 simultaneous input processing channels and up to 32 (+3) discrete mixes, all of which feature EQ and dynamics processing options.


By adding additional I/O hardware the PRO6's network can be expanded up to 264 inputs and 264 outputs. These connections can be patched and routed on a scene-by-scene basis, by use of the snapshot automation.

The Midas microphone pre amp has become a benchmark throughout the audio world, and its current expression in the PRO6 sounds better than ever. Still built from discrete components, and based on the designs which were so successful in Midas analogue consoles such as the XL3, XL4 and Heritage, the PRO6's dual (analogue and digital) gain stages enables users to shape the mic amps' character according to preference.

The PRO6's Control Centre has been designed as the optimum size for its function. All controls are within easy reach, and the concept of "bringing the console to the engineer" is fully exploited, freeing the mix engineer from thinking in terms of "layers" or "pages". Instead, the PRO6 uses configurable colour-coded VCA and POPulation groups, which are deployed onto the control surface at the push of a button. This method was pioneered on the Midas XL8 Live Performance System. Midas has designed the PRO6 Control Centre entirely around this concept, using different colours to navigate input channels in the same way that engineers have traditionally used coloured tape and fader knobs to aid in console navigation.

All hardware elements feature redundant power supplies as standard. The FPGA processing engine is of modular construction, with the option of a spare module which will automatically deploy in the event of an engine module failure (n+1 model). Digital audio transport uses the international AES50 standard, featuring feed-forward error correction which provides superior protection against lost data packets and synchronisation issues when compared to Ethernet-based systems.

Bosch audio Australia division have 'healthy' orders already for the Pro6, which they say will sell at well under 200 grand depending on configuration.

[www.midasconsoles.com/pro6.php](http://www.midasconsoles.com/pro6.php) 

## CON-SOL DEBUT KIVA SYSTEM ON THE GOLD COAST

CON-SOL has recently boosted their audio rental inventory with the purchase of an L-ACOUSTICS KIVA ultra-compact Line Source Array system. Managing Director, Bill Karaitiana said CON-SOL had been seeking a system with flexibility and versatility to suit the corporate market.

"With the ongoing success of our existing L-ACOUSTICS range, we wanted to invest in a system that built on this reputation and guaranteed the same high level of sound quality already experienced by CON-SOL clients.

"We chose to go with the KIVA + KILO LF extension system because of

its incredibly high 'power to weight ratio' without compromising audio quality. We were also sold on the new LA4 amplifier with inbuilt amp and processing power – which takes away the opportunity for curious 'little fingers'.

"Our new KIVA system debuted at the Cairns Convention Centre in July this year with an event for one of our national clients. It was a great success and our client was over the moon with the clarity and quality of sound.

We continue to be impressed with the capabilities of our new KIVA system – but perhaps even more importantly, we are constantly reassured by the L-ACOUSTICS consistent high level of performance and reliability."

CON-SOL are based in Ashmore QLD



and provide audio/lighting/staging/AV equipment for both local and interstate conventions/corporate events

[www.con-sol.com.au](http://www.con-sol.com.au)





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# DIGICO LAUNCH LOWER COST CONSOLE

*SD8 live digital console will fight Digidesign and Yamaha on the same beach.*

While Midas are launching consoles from the ultra top down, DiGiCo have just had a stab at the bread and butter market where Yamaha and Digidesign are engaged in all out war. If you've got 60 grand to spend, then here is another choice.

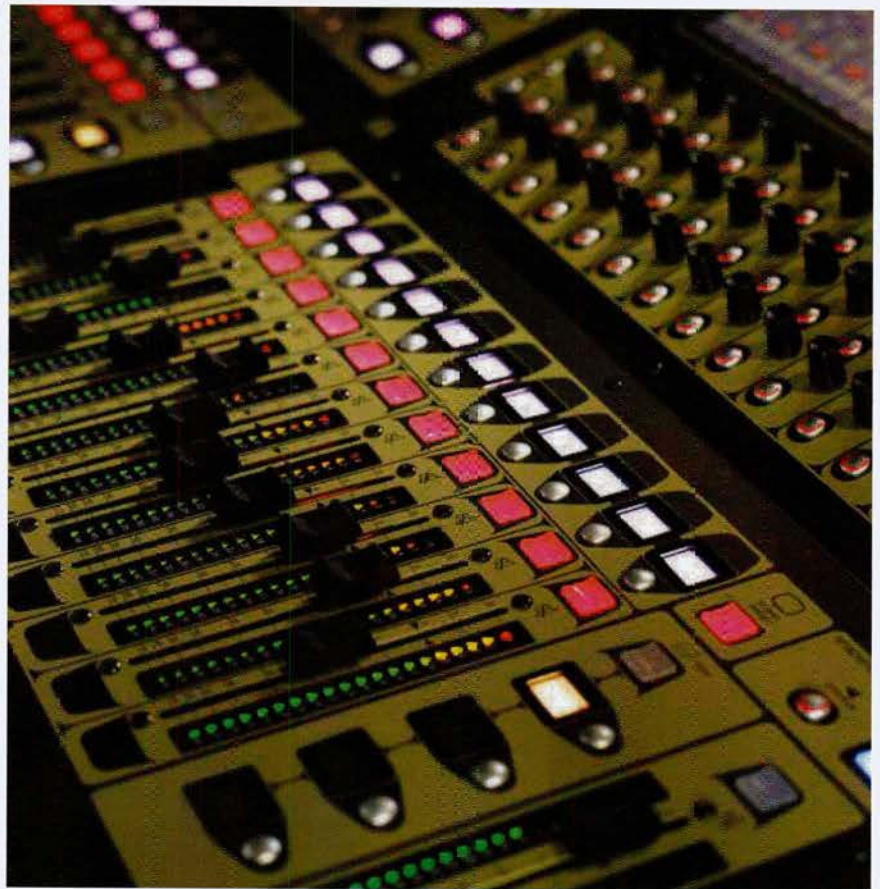
SD8 comes with a remote rack that carries 48 inputs and 8 outputs, expandable upwards. In standard form, the console or work surface ships with the rack, and a MADI multicore.

The SD8 has a fixed architecture and employs a smaller Super FPGA than the SD7, yet it benefits from the lineage of the D Series, plus the advances already made in the SD7.

SD8's control surface has 37 motorised faders, dedicated and multi-function control knobs and electronic labelling. It also has a 15", super high resolution, touch sensitive TFT LCD backlit display.

This is the SD8's primary command centre and works in harmony with every other control of the console, automatically displaying functions that are relevant to what is being done at any moment in time. A physical fader, knob or backlit, electronically labelled button is either provided as standard for every major mix function, or can be programmed onto one of the user macro buttons.

The SD8 has 24 main channel faders and 12 assignable aux and touch sensitive master faders. Each bank of 12 faders can be assigned as channels or masters,



allowing all 36 main faders to control inputs if desired, while any bank of 12 can be assigned to the touch screen for fine-tuning. The SD8 provides, as standard, a 12 x 12 output matrix, its 12 busses being additional to the console's 24 stereo, solo and master busses.

60 mono or stereo channels - the

equivalent of 120 channels of full DSP processing - and the combined power of the SD8's technologies means that the number and quality of effects, dynamics or other functions is available to all channels simultaneously, no matter how the console is set up.

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



## SSE BRINGS PROLYFT TO AUSTRALIA

Specialised Stage Engineering announces their exclusive distribution of Prolyft Chain Motors in Australia. Prolyft is a market leader in the European entertainment market providing chain motors from 250kg to 2000kg in both direct voltage control and low voltage control.

Prolyft offers a lifetime warranty on their motors, backed up by an international network of authorised service points. Provided the hoist is tested annually by a Prolyft Service Point, lifetime warranty is guaranteed. Annual certification of the hoist is registered in an online database allowing users to view service history and certification test certificates from any computer with internet access. Tracking the hoists through the database is accomplished with the use of RFID tags fixed to each motor which means that even a second

hand motor can be identified with its entire service history and certification certificates.

With a full range of accessories including double brakes, limit switches, single and double pendant controllers, 4 way, 3 way and 12 way rack mountable controllers, load cells and much more, the Prolyft range is able to meet the requirements for concerts, theatre, or any other hoisting needs.

SSE Managing Director, Nick Rowland, said 'If you had asked me 12 months ago if I was interested in taking on chain motor products I would have said no. The Prolyft lifetime warranty and service support network sold me completely on the product. No other chain motor manufacturer provides the support, service, and warranty that these motors come with.'

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Enrico Caironi (Clay Paky) receives the Award for Innovation at Plasa 2008.

## CLAY PAKY AWARDED FOR ALPHA BEAM 300

Clay Paky feel they have succeeded in designing a product that is unique and capable of filling a gap in live entertainment – namely the Alpha Beam 300. Others agree, since it won the Award for Innovation at the Plasa 2008 event held in London during September.

The Alpha Beam 300 is ideal for live professional use especially long throw to cut through the brightness of stage washes or LED backgrounds, with Aircraft Landing light effects never seen before.

Alpha Beam 300 is eco-friendly – it

is 3 times brighter than an ordinary 1200W wash projector, with the energy consumption of a 300W light bulb. This enables it to be used instead of considerably larger projectors, with enormous savings in energy.

The Aperture and graphics of the “tube of light” can be decided at will by using the 8 fixed gobos available, while a linear frost can be used to pass from a narrow hard beam to a more or less soft one. CMY colour mixing and a colour wheel (8+1) allow the light beam to be coloured at will. A Dimmer on a dedicated channel, stop/strobe and high speed Pan/Tilt complete the configuration. **CX**

## APPLE FIGHTS ROYALTY RISE

When you buy a tune from i-Tunes, the artist receives the sum of nine US cents. This means with 2.4 billion songs sold this year, at just under one US dollar each, the artists get around 9 percent, or \$216 million.

That's about to change, since the National Music Publisher's Association in the USA has taken court action to lift the share to 15 cents – up 66%. Apple responded with a ludicrous threat to shut i-Tunes, which no one takes seriously.

But the interesting fact to emerge is that the 9 cents is paid to the artist by their record company – who get around 70 cents per track, or almost 70% of all money generated by i-Tunes. The standard historical royalty paid to an artist is between 16% and 20% for album and single sales.

Apple say they won't raise the track download charge, and that the record companies can pay the extra to the artists. With i-Tunes so dominant, who knows where this one will end up?

### Try this quick quiz and check whether you're a tech or a wannabe!

1. Stage left is to the left looking from the audience. Yes/No
2. A Par 64 with a round pin plug has a 110v lamp. Yes/No
3. Two microphones close together can suffer phase cancellation. Yes/No
4. A DI is used more often on a guitar amp than a microphone. Yes/No
5. Large diaphragm condenser mics are mainly for studio use. Yes/No
6. 20 degree beam angle is wider than 60 degrees. Yes/No
7. 106 is a primary blue gel. Yes/No
8. Is black the same with a projector and a LED wall? Yes/No
9. DVD or DV, which is the pro recording format?
10. Gaff holds the Universe together. Discuss.
11. A load in -vs- a load out. Which is faster?
12. One law governs all OH&S in Australia. True or false?
13. Cardioid is for studio, omni directional is for live. True or false?

Answers on page 21!



## CHICK MAGNET

An Australian Zoo has acquired a female of a very rare species of gorilla. Within a few weeks, the gorilla became very cantankerous and difficult to handle. Upon examination, the Zoo vet determined the problem. The Gorilla was on heat.

To make matters worse, there were no male gorillas of the species available.

While reflecting on their problem, the Zoo management noticed Graham, a big Kiwi lad & former roadie, responsible for fixing the Zoo's machinery. Graham, like most Kiwis, seemed to be possessed with ample ability to satisfy a female of any species.

So the Zoo administrators thought they might have a solution.

Graham was approached with a proposition. Would he be willing to have sex with the gorilla for \$500?

Graham showed some interest, but said he would have to think the matter over carefully.

The following day, Graham announced that he would accept their offer, but only under three conditions:

First, he said, 'I don't want to have to kiss her.'

Secondly, you must never never tell anyone about this.'

The Zoo administration quickly agreed to these conditions, so they asked what his third condition was.

'Well,' said Graham, 'You gotta give me another week to come up with the \$500.'

**CX**

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With the date of the digital switchover set by Communications Minister Senator Conroy as 2013, things are beginning to hot up in the spectrum arena. They just reached boiling point in the USA.

In August, The Federal Communications Commission (FCC) in Washington DC, announced its "Proposal for the Prohibition of Low Power Auxiliary Stations in the 700MHz band After the Digital Transition." If this proposal is mandated by the US government, the FCC will prohibit the manufacture, import, sale, or shipment of devices that operate as low power auxiliary stations in the 700 MHz Band (which is only part of the spectrum wireless audio devices currently use) after the end of the DTV transition. These devices include wireless audio transmitters. Manufacturers are working with the FCC and regulators in the other major markets whose decisions are still pending, including Europe, the United Kingdom and Australia to develop a solution for users.

It must be emphasised that this proposal by the FCC has not been mandated yet and will only apply to the USA. It should also be noted that, unlike Australia, wireless audio products used in the USA have not been covered by a class licence system such as that which currently operates in Australia.

When using compliant product, the class licence in Australia has provided wireless audio product users a degree of protection as secondary users in the 520-820MHz part of the spectrum without the added burden of having to obtain an individual, and sometimes costly,

licence. The system in the US currently requires users occupying the 700MHz band to apply for individual licences. A large number of users in the US have not obtained licences therefore the FCC does not have a true indication of the scope of use of these products in the United States. The Australian regulators are fully engaged with the Australian Wireless Audio Group (AWAG) and are monitoring overseas developments and examining their application here in Australia.

The Australian Wireless Audio Group, through the Australian Music Association (AMA) has been working to ensure the needs of wireless audio users are being understood as the consultation processes currently underway begin to shape future spectrum policy here in Australia.

Susan Twartz, Chair of AWAG said, "Wireless audio users in Australia are in a unique position. The digital switchover date being 2013 means that Australia will be making changes after the major markets of Europe, the United Kingdom and the United States. Australian users also have the benefit of a well-informed, united industry body in the form of AWAG.

Our purpose at this stage is two fold. Firstly, we want to ensure that the unique requirements of our users are considered in the spectrum planning process. This will be achieved through our continued representation and involvement in industry working committees and through our continued dialogue with the Government and its key authorities such as the ACMA and the Digital Switchover

Taskforce. The benefit now is that we have a clear time line to work towards and AWAG looks forward to continuing the dialogue with the regulators.

Secondly, AWAG is working to ensure that future spectrum plans in Australia follow at least one of the other major overseas markets. Australia would not benefit in developing a unique solution, one that for instance requires manufacturers to develop unique products for our market. We now have an indication of the way the US environment will probably be shaped and eagerly await a resolution in the US and an indication from the ACMA of their response to these developments."

A major element in our representations is the AWAG commissioned Windsor Place Consulting report entitled, Untethering the Microphone. This study demonstrates the benefits of spectrum use by the class licenced wireless audio products in Australia, including radio mics, in ear monitoring and communications systems.

While the report is not yet available to the public, AWAG have been briefing key Government stakeholders on its findings. To date briefings have been provided to the Digital Switchover Taskforce, the entity responsible for the switch to digital TV, the Australian Communications and Media Authority (ACMA) and the Network and Spectrum Planning Division of the Department of Broadband, Communications and the Digital Economy (DBCDE) and at a Ministerial level.

Amongst the reports key findings were

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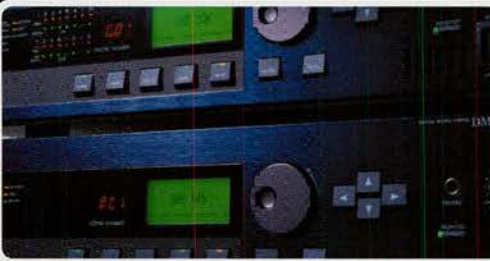
## DIGITAL MIXING 101



In this one-day course, you'll learn the fundamentals of analogue and digital audio systems. You'll have the opportunity to mix on a multi-track and become more familiar with signal flow, hardware and software while receiving hands-on training on Yamaha's LS9, M7CL and PM5D digital mixing consoles. This course is suitable for any audio engineer interested in learning the fundamental skills of basic analogue and digital audio systems. *(Lunch Provided)*

**COST: \$100 INC. GST**

## AUDIO NETWORKING



In this 3-hour course, you'll learn the fundamentals of creating audio networks using CobraNet and EtherSound, the digital transmission protocols that have revolutionised the design and construction of distributed audio systems. You'll build simple networks that transport audio via Ethernet infrastructure while learning about the operation of Yamaha's DME Series programmable DSP range and network audio interfaces. This course is suitable for any system designer, integrator or installer interested in upgrading their skills or seeking an introduction to digital distribution protocols.

**COST: \$50 INC. GST**

## PM5D V2 AND DSP5D



In this 3-hour course, you'll learn the operation and new features of Version 2 of one of the world's most popular digital mixing consoles, the PM5D, and its new expansion unit, the DSP5D. Topics will include how to expand a PM5D's mono input channel count to 144, as well as using a DSP5D as a remote stage box and digital multicore, connected to FOH by a single piece of Cat5.

**COST: \$50 INC. GST**

|     |             |                                     |                        |
|-----|-------------|-------------------------------------|------------------------|
| QLD | Rockhampton | Digital Mixing 101                  | Thursday 11 September  |
|     | Mackay      | Digital Mixing 101                  | Saturday 13 September  |
|     | Townsville  | Digital Mixing 101                  | Monday 15 September    |
|     | Cairns      | Digital Mixing 101                  | Wednesday 17 September |
|     | Brisbane    | Digital Mixing 101                  | Tuesday 7 October      |
|     |             | Audio Networking / PM5DV2 and DSP5D | Wednesday 8 October    |
| NSW | Newcastle   | Digital Mixing 101                  | Tuesday 14 October     |
|     | Sydney      | Digital Mixing 101                  | Tuesday 21 October     |
| ACT |             | Audio Networking / PM5DV2 and DSP5D | Wednesday 22 October   |
|     | Canberra    | Digital Mixing 101                  | Tuesday 28 October     |
| VIC |             | Digital Mixing 101                  | Tuesday 11 November    |
|     | Melbourne   | Audio Networking / PM5DV2 and DSP5D | Wednesday 12 November  |
| WA  | Perth       | Digital Mixing 101                  | Thursday 20 November   |
| SA  | Adelaide    | Digital Mixing 101                  | Friday 28 November     |
| TAS | Hobart      | Digital Mixing 101                  | Tuesday 9 December     |

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| <b>ART 322 A</b>  | 12" + 2" | 350W   | 50W    | 128dB   | 23kg          | 680H 405W 345D             |
| <b>ART 325 A</b>  | 15" + 2" | 350W   | 50W    | 129dB   | 24kg          | 680H 405W 345D             |
| <b>ART 522 A</b>  | 12" + 2" | 500W   | 250W   | 130dB   | <b>18kg</b>   | 680H 405W 345D <b>*NEW</b> |
| <b>ART 525 A</b>  | 15" + 2" | 500W   | 250W   | 131dB   | <b>18.5kg</b> | 680H 405W 345D <b>*NEW</b> |
| <b>ART 705 AS</b> | 15"      | 800W   | TBC    | 130dB   | 37kg          | 590H 435W 600D             |

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

quantifications of the importance of wireless technology to the Australian economy:

- That the quantified benefits indicate that users of wireless audiovisual devices derive a benefit of between \$80 to \$115 million per year from the use of these devices. This is equivalent to a ten year present value of some \$291 to \$714 million and,
- Industries which are regular users of wireless audio products such as the entertainment, tourism, conventions and fitness industries represent \$32 billion annually to Australia's economy, representing employment for more than 130,000 people
- There were additional significant social benefits derived through the use of these devices in education, religious observance as well as a host of non commercial community activities

In short, this report clearly demonstrates that in addition to many social, community and cultural benefits, wireless audio products also provide a substantial economic benefit to the country.

"The class licence nature of these products has made them largely invisible to the spectrum planners, however, the Windsor Place/AWAG report has brought the extent of their use within the community back into sharp focus," said AWAG Chair, Susan Twartz.

A second document – a series of 16 case studies on the use of these devices in a range of settings has been developed to assist stakeholders understand how and why these devices are being used by each of the key user groups.

Both the ACMA and the DBCDE have stated to AWAG that the remainder of 2008 and most of 2009 will be dedicated to a comprehensive stakeholder process. AWAG is continuing to meet with representatives of the regulators and other stakeholder groups, ensuring that the unique needs of our users are considered in the decisions regarding the digital dividend in Australia. AWAG is also continuing to monitor developments in the international markets and endeavouring to interpret the ramifications for our industry in Australia.

If wireless audio users would like to regist

AG, please go to <http://www.australianmusic.asn.au/Default.asp?ID=25> and complete the online registration form.

**More information:**

Susan Twartz

Chair

Australian Wireless Audio Group

Phone: +61 2 9582 0909



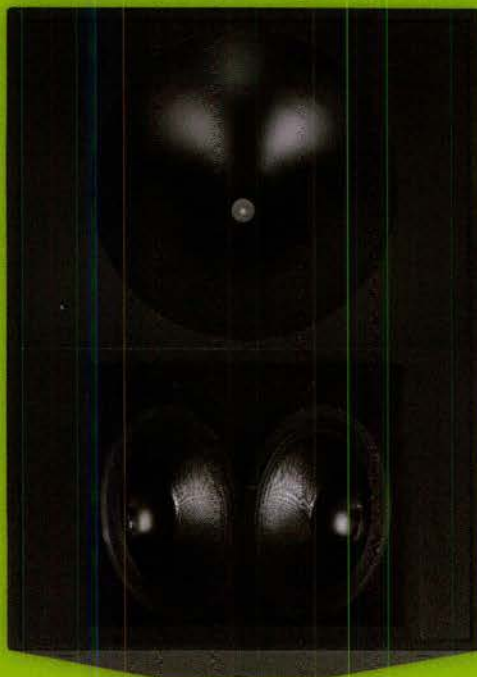
**ANSWERS TO QUIZ ON PAGE 16**

1. No. Stage left is from the performer's perspective.
2. If it doesn't have a conventional plug, it's 110v.
3. Yes they do if very close: use a phase reverse switch or adaptor.
4. No, typically you mic a guitar amp to hear the speaker/amp contribution.
5. Mainly used in the studio - sometimes used on guitar amps live.
6. 20 is tighter than 60 degrees.
7. 106 is primary red in Lee filters.
8. A black projection will leak light, a black LED wall is off.
9. DV is the pro format, not mini-DV or DVD.
10. Of course it does. Silly question, pointless debate!
11. Load out is always faster.
12. Every state plus the Commonwealth has a different OH&S law. Crazy.
13. Cardioid is most common on stage, to reject stray noise.

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For more information on Tannoy contact:

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## JBL SCREENARRAY TRUE TO FORM AT SOUNDFIRM

Soundfirm, Australia's largest and most highly awarded sound post-production company, has provided award winning sound post-production services for feature films, television drama series and television commercials for over twenty-two years.

With three state-of-the-art facilities situated in the centre of Melbourne's production hub; on the Fox Studios lot in Sydney and in Central Beijing, Soundfirm is fully equipped to meet all sound post production needs.

Soundfirm's Sydney facility includes Film Mix One which is the largest mixing stage in Australia. Many Australian and international feature films have been completed in Film Mix One including "Rabbit Proof Fence", "The Quiet American", "No Reservations", "Moulin Rouge", "House of the Flying Daggers" and most recently director John Woo's epic two-part Chinese language feature "Red Cliff."

Certified to THX standards with a JBL 3632 3-way speaker system, Film Mix One is capable of mixing and mastering in both Dolby Digital 5.1 surround (SRD) and Dolby Stereo.



Bruce Emery, Soundfirm's Technical Manager, is a great fan of JBL audio products particularly the JBL ScreenArray system that has been utilised day in and

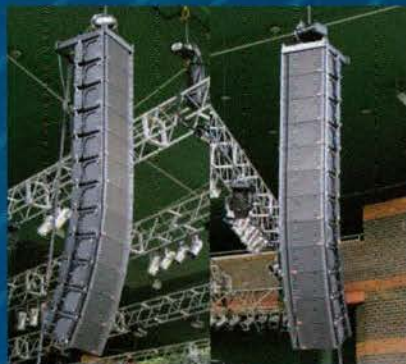
day out for the past eight years at Film Mix One. The Screen Array system is complemented by the room JBL 4642 Dual 18" subwoofers and JBL 8340A,



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

high powered surround speakers.

"Soundfirm has always used JBL audio products in their film mixing rooms," commented Bruce. "Three way monitoring is still the trend and has improved the acoustics in the film sound industry, which is notoriously slow to upgrade. It's not like the music studios which seem to install new versions of monitoring almost on a project to project basis. Film rooms don't need to change monitoring very often and when they do, they want to go with something that is proven and reliable and gives good results. Our JBL ScreenArray system has been working faultlessly for the past eight years and it makes us compatible with other similar size film mix rooms both in Australia and abroad. The JBL name is known, you never have to explain to people who they are as it really is a benchmark of quality and reliability."

Crown amplifiers are used to drive the audio system in Film Mix One as well as the other main mix rooms which also utilise JBL in the form of JBL Screen Channel systems. In fact all recent additions to the Soundfirm surround systems are based on JBL Surround loudspeakers. Edit suites and small screening spaces are fitted with the JBL LSR range of powered studio

monitoring.

"We've recently been buying lots of 5.1 packs of both sizes of the JBL LSR self-powered studio speakers," added Bruce. "The sound quality for the price is great and we're able to get compatibility across all of the editing rooms as well as a nice compatibility between those rooms and what we have in the mix rooms. The fact that the speakers have digital inputs means that we're maintaining a total digital environment and using the speakers in a variety of room sizes and shapes, we're also using the room mode correction function in the speakers to provide consistent acoustics."

### GUITAR SPONSORSHIP LAWSUIT

According to Undercover website's Paul Cashmere, "Metallica, bass player Robert Trujillo has found himself in the centre of a lawsuit over whom he can endorse".

"Pre-Metallica, Trujillo had a deal with Fernandes Guitars. They supplied him with custom designed basses in return for using his name to endorse the product."

Apparently Metallica Inc is sponsored by ESP Guitars, who are taking Fernandes to court in the USA over the endorsement deal.



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## CLAIR BROTHERS TURN 40

The leading live audio firm in the world has turned 40. Clair Brothers is a family company based in Lititz, Pennsylvania which provides live audio for many of the top acts in the music industry.

The firm has a link to Australia, with Bruce Jackson – the J in Jands – joining in 1970 after selling out of the company he created with Philip Storey – the S in Jands. Jackson went on to assist Clair with the development of consoles and the S4 composite loudspeaker – the first 4 way PA in one box.

In 2000 Clair acquired Showco, the number 2 company in the USA, and today have expanded with an installations company that shares their expertise with venues. Jands Production Systems have been a Clair Brothers affiliate for many years, and continue to represent the company, whose client acts can tour the world and always get a similar system. **CX**



## CMI TO HANDLE MC2 AUDIO

CMI has been appointed as the Australian distributor for MC2 Amplifiers.

MC2 Audio Ltd. has been manufacturing amplifiers for the pro-audio market for the past 10 years and is an OEM supplier to two of the top studio monitor manufacturers.

Co-directors Terry Clarke and Ian McCarthy have combined their experience in the audio industry to promote the highest standards of audio quality and reliability in manufacture.

Terry gained a worldwide reputation

for design as co-founder and Technical Director of Klark Teknik. Ian's early experience was in the hi-fi side of the industry before moving into the manufacture of public address equipment in 1979 and then into professional audio in the early 1990s.

Three product ranges are available: the microprocessor controlled MC range, the T Series for fixed installations and the lightweight E Series with switchmode power supply designed specifically for touring.

All products are covered by a 5-year warranty.

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

**CX**



Yamaha training on the road in Rockhampton.

## YAMAHA ACQUIRE NEXO, TOUR DIGITAL

Yamaha Music Australia have just wrapped up a successful training tour of Queensland, having hosted the "Digital Mixing 101" course in Rockhampton, Mackay, Townsville and Cairns to over 80 trainees.

The day-long Digital Mixing 101 course featured Yamaha LS9-16, LS9-32, M7CL-48, PM5D-RH V2 and DSP5D digital mixing systems connected seamlessly within an EtherSound network. Attendees were trained on audio engineering theory, microphones and mic technique, simple bidirectional audio networking via EtherSound, and practical digital mixing concepts such as gain structure, dynamics, EQ, effects, scenes,

offline editing and user administration.

Meanwhile, Yamaha Corporation has announced the acquisition of the controlling share of France-based NEXO SA, a leading manufacturer and distributor of professional acoustic loudspeaker systems. The move follows several years of close collaboration in strategy and product design between the two manufacturers.

Yamaha's percentage of ownership in NEXO as represented by their acquired shares (after full dilution) is now 74.9%, up from the existing stake of 10.22% it had held in the French loudspeaker company since 2005.

The total acquisition equates to approximately €35.8 million, with 694,709 shares purchased at a price of €51.542 per share.

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

**CX**



## DA-CAPPO – WET AND BRIGHT

*Sydney HQ but global market*

Users of ultra small microphones know how sweat kills these expensive transducers. Now Sydney based firm Da-Cappo have a water resistant technology which encapsulates their microphone without impeding audio performance.

The technology is a secret, but the product isn't mysterious at all – it competes against DPA and Countryman micro microphones, chosen by theatre and broadcast users where appearance is important.

Sydney based audio veteran David Green is behind Da-Cappo, he is well known for his days at SSL and at Rode. Da-Cappo was founded to bring to market the micro microphone, which is made under supervision at a factory in China. According to David Green he retains ownership of the tools and has a small team in China who are on hand while each batch is manufactured.

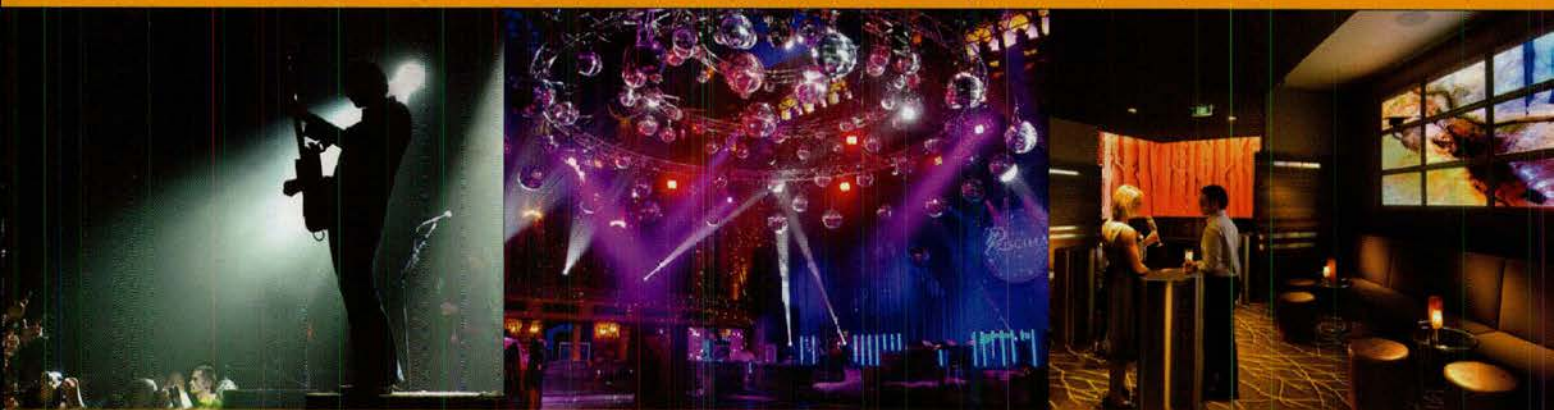
The microphones are out there – they have distribution in 39 countries so far.

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# CONCERTS ON YOUR MOBILE

*Moshcam gives LIVE GIGS a big free boost...* By JULIUS GRAFTON

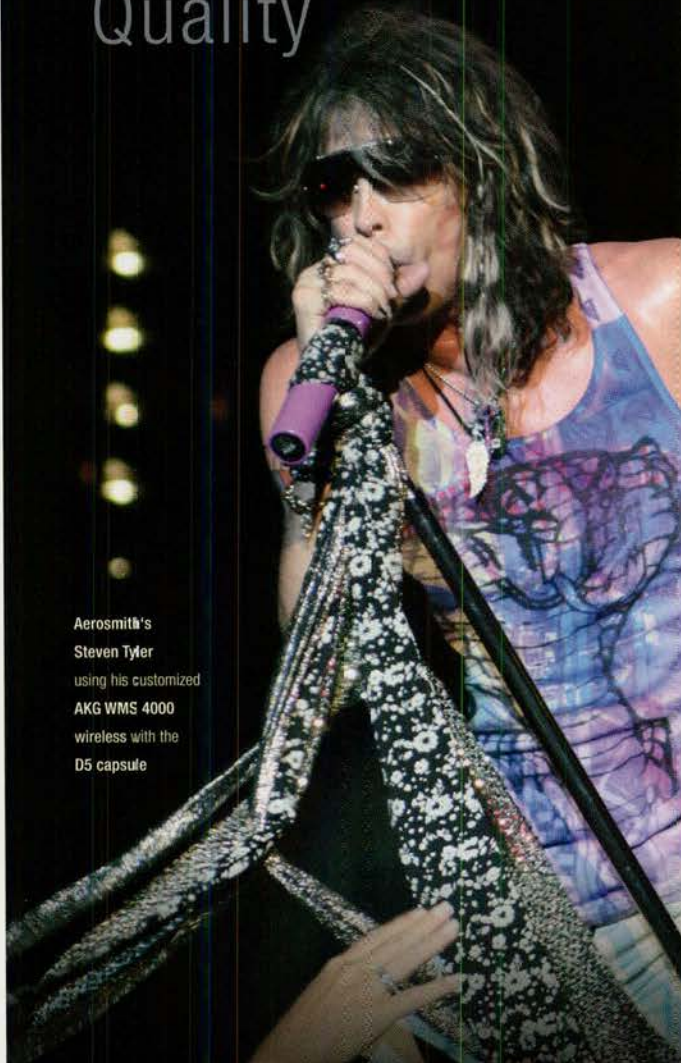


*Pic by Bob King*

The world's most significant live music stream was launched at presstime in Sydney. Moshcam has almost 400 gigs online, streamed free to any enabled mobile device or internet PC. It's a bold grab for dominance in a band new space that couldn't exist until the technology planets aligned.

Rewind a year and Enmore Theatre operator Elia Eliades meets with web guru Paul Hannigan, to talk about the online space, initially about websites and ticketing. The discussion turned to the irony that so many live shows would evaporate once the house lights were turned on. Enter Irish born and Sydney based Film Director John Reddin. He had worked with Elia on XYZ Networks at Foxtell.

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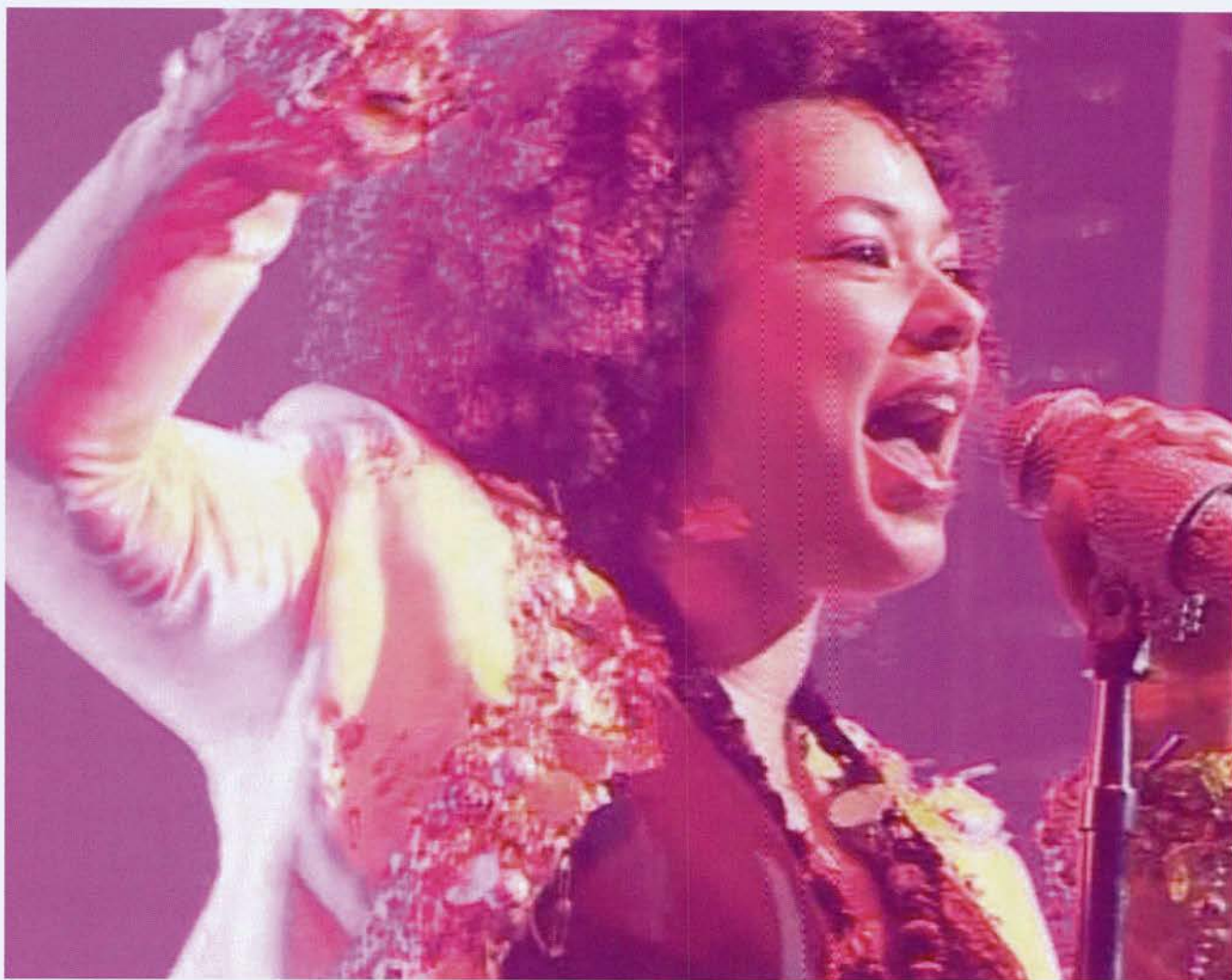


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*Sneaky Sound System do the Moshcam thing.*

“Think of the golden era in Australian music and think of how little footage actually exists of that era”, John Reddin said in his soft Irish accent. “My passion is history”. An idea was born, and a partnership formed. Elia already had a TV facility, Paul had the experience with online site building, and John knew a thing or two about shooting live events from his 25 years in Film and TV.

A concept was born, where bands performing at Century Venues – Elia’s family operate the Enmore Theatre, Metro and Factory Theatre venues in Sydney – would be captured on a multi camera shoot. It would be all there, live and sweaty, and streamed off the net with a song list so fans could skip to whatever they wanted. The streaming would be real time – no downloading, Think You Tube.

“How do we make his work? It’s like Pandora’s box”, John says. “The first big issue was to negotiate the rights.” This is a stumbling block if not approached the right way, since no band wants to give anything away for free. Why would a band agree to having their gig shown in full for free?

## LEGALS

“Our aim was to launch with the world’s largest online catalogue of live music. To do that, we needed streaming rights from the bands. Downloads are too problematic”, John continued.

First port of call was music lawyer Brett Oaten, to create a template streaming rights agreement. He specialises in artist and management work, so he understood the dynamic. The agreement needed to be workshopped, trial and error would get something that the bands would sign.

The deal shares the rights – Moshcam can stream the gig, the band retain commercial rights, so if there is a live DVD to be made and sold from the footage, they can do that. They retain the copyright. If Moshcam sell the footage, then the band shares that revenue.

It seems bizarre that a legal contract and a totally free channel of one entire band gig would even exist – such is the new era of the net. If the bands are convinced – and they sure are – then why would a venue let it happen?

Century Venues were an ideal launch

partner, the amazing thing is that other venues like The Annandale and the Manning Bar have embraced Moshcam. “It’s been a privilege to work with Matt and Dan at the Annandale – it raises the profile of a venue, and it’s all about promoting live music. Plus it’s not high maintenance for the venue”, says John.

Having a template, having the support of Elia’s venues, and having a web whiz working on the nuts and guts of Moshcam amounted to nothing until John wove his magic and started negotiating. His quiet Irish manner and fierce commitment broke down some walls, and some early bands were signed. Once a few were out there, the rest started to come peacefully.

## LIVE SHOOTS

Until almost now, a live video at a venue meant an outside broadcast. In film and TV land, that means lots of trucks and generators and catering. An outside broadcast is a travelling community of specialists. Street closures sometimes happen. The shooting intrudes into the show.

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Elia Eliades. Pics by Bob King.



John Reddin.



Paul Hannigar.

Moshcam is all done on the fly, meaning the cameras are mixed live to hard disk, and the audio is mixed live from a split. It's all one go, a live cut on the fly, and the cameras all fit into the venue without closing out setlines.

Such is the leap with DV camera technology that permanent cameras can be flown in the venue, and hand helds near and on stage are smaller and more portable. At the Annandale, a studio/room has been created where the mix and the vision CCU can be done, same as Metro and in other venues a fly-away kit is brought in.

Elia supplies the technology and crew, with a director, CCU (vision) operator, audio engineer and two or three camera operators making a typical nights work.

This type of operation was unheard of just a few years ago, and today large format live outside broadcast still requires all the extra components – the quality difference between what Moshcam do and a fully blown high definition outside broadcast is where the difference in site costs comes along.

So how do the two formats compare? CX has a sample DVD from Moshcam, and it is very nearly as good as anything we've seen out of a full blown OB.

Moshcam is professional footage, and don't be fooled by the small screen, 'You Tube' limitations of today's broadband. One day, very soon, the visual quality that you get off the web will be very, very good. Moshcam is ready for the day, because the footage is already high quality.

## RIDE THE TIGER

Once a Moshcam gig is over, the vision and embedded audio are run through Final Cut Pro on a Mac. The footage is

topped and tailed. The gig setlist is typed into the content management system, with the track start times logged from time code. This way, the viewer isn't wasting time online, they can jump direct to the track they want to view.

A band bio is added, and then the footage is run out as a flash file (FLV) for the net, and as a DVD for the band, management, and label. A gig can be online in just a few hours but usually the band have the chance to veto some numbers first. It doesn't happen too often, and indeed only one gig has been completely canned by the band, for reasons the Moshcam team fully understand.

It's this cooperative model that's made Moshcam work, "we respect the people who create the music", says John.

It's an adrenalin fuelled journey, with the sweat of a live show and the microsecond timing of cameras to disk all part of the fun. "We're all music geeks", John continues, I love the challenge, I love live performance. We have to do them justice. We have to raise the bar of live performance".

## MILLIONS AND TERRAFLOPS

Moshcam has taken a small team more than a year to bring to launch, and they've done it within their resources. If it were a BigPond or a media company, this would be a ten or twenty million dollar project.

As it stands, the partners don't really know what they've sunk in, because a lot of it has been 'in kind'. They have around 10 terraflops of footage, and have stepped up the number of shoots, with two venues on the same night sometimes.

When the project moved into Beta test mode, news was placed on some band Blogs when a gig went online, so they could see how the volume of streaming was matched to demand. Some surprises awaited, so the serving network was moved up to what is the gold standard of streaming, a content delivery network (CDN) called AKAEMI.

This is a series of servers around the planet. When a Moshcam gig is uploaded to one server, it is then automatically updated to all other servers on the CDN. More servers are brought online as the network requires.

The confluence of falling broadband costs, cheaper mass storage, and networks like 3G means that today a terraflop of streaming costs Moshcam well under one dollar. A year or so back, that cost would have been more than seven dollars. At 400kb per second, per stream user data serving is not a massive cost for Moshcam and they expect the cost to continue to fall, as the usage ramps up.

So what is the end play? No one is kidding around, Moshcam is the Next Big Thing and the team have already fielded some heavy interest from major media players. According to John Reddin the medium term objective is to build awesome traffic and then use the traffic to sell advertising. How they do it is not yet important, because they are working on the traffic.

Dial it up and see how it looks:

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

Moshcam operates in a variety of venues, each with different parameters. The venues have different facilities already in place, so how Moshcam is produced out of these venues varies

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## MOSHCAM - *the inside (Tech) story*

significantly.

The Metro Theatre has a full broadcast facility permanently installed. Permanent triax and multicore cable runs into the theatre were installed last year especially for Moshcam. The usual camera configuration includes 3 triax cameras running to the stage area (2 in the pit and 1 on stage), and one or two multicore cameras at front of house for wide shots. The cameras are widescreen Sony DXC-30's, with full CCU control which is managed from the control room. Everything is referenced to a pair of Leitch SPGs, and Tektronix monitoring is used to maintain image quality. Vision switching is done in SDI on a Grass Valley 4000 series vision mixer, and records are done on SP Betacam and a Turbo iDDR.

Audio is capably handled by an RSS Digital Snake which takes a split from the FOH console up to the dedicated audio lounge, where it's mixed down to 2 track on a Yamaha M7CL. Multi-track recordings are courtesy of a bank of Alesis HD-24 XR HDD recorders. The 2 track mix goes via a Urei 1178 and some distribution amps into the record devices. Truss-mounted Rode NT-5s are used for crowd effects.

Typically crewing for a Metro shoot includes; 4 camera ops, 1 director, 1 TD/CCU op, and 1 audio op. Most of the Moshcam crew have been on the gig since the inception of the project, so everyone works comfortably together. The camera operators and directors know what's expected of them, and consequently the shoots happen very smoothly.

### DIFFERENT SPEC'S

Moshcam has installed a dedicated video facility into The Annandale Hotel. The Annandale facility is somewhat simpler, and includes 3 fixed and 2-3 operated Sony cameras. The operated cameras are again DXC-30s with CCU control, and there are also remote facilities for the fixed cameras to enable colour matching. A Magni in-vision waveform monitor and vectorscope helps this process along. Vision mixing is done on a Grass Valley 100 Series mixer in component format, and there's also a TALIA 4 level router in place to make shuffling sources and monitoring easier. Audio is taken as a matrix feed from groups on the FOH console, with some crowd effect mics added in along the way. Records are done straight to a DSR-11 DV-CAM

deck.

Gigs at The Enmore Theatre and The Factory Theatre are shot using a flyaway DV kit, which includes 4 Sony Z1P cameras and a Datavideo integrated switching system. Cameras connect to the Datavideo system via firewire, and comms and tallies run back on a standard XLR cable. Additional ISO cameras are sometimes added in depending on the complexity of the shoot, and footage from these is added into the cut in post. It's a simple kit which brings the benefit of very quick setup. Typically this encompasses placing the Datavideo case in position, running out camera cables, setting up cameras, hooking in an audio feed, and waiting for the action to start. Another benefit this quick deployment brings is that the system can be quickly relocated to other venues with little notice – for instance the same Datavideo kit has been used for gigs at the Gaelic Club and the Manning Bar.

Records are done to a mixture of digital formats – either Turbo disk recorder or DV-CAM. The great thing about this is that it sets the whole process up for a very quick turnaround. Once the footage is approved, it's encoded to a flash file and made available on the site ([moshcam.com](http://moshcam.com)).

On a technical level, Moshcam is held together by quite a few people – from camera ops to directors, through to audio folk and tech directors.

Peter Zahar is the production manager and takes care of resourcing & facilities. With multiple shows running across multiple venues his job is certainly a daunting one, but he keeps it together.

Scott Hart is the main TD for Moshcam shoots, and takes care of things like setup of facilities, camera and vision level line-ups, and tape ops. He's also one of the regular directors, as is Les Bishop who also acts as a TD. Multi-track audio recordings are usually handled by either Peter Pagac or Evan Belogiannis.

One of the challenges to shooting any live show is lighting it in a way which is appealing to the punters, yet works for the cameras. Among the regular lighting operators found on Moshcam gigs are Chris Quinlivan, Tony Swan, and Burnie Malletin, all of whom keep things looking interesting. Since radical lighting changes are somewhat par for the course when guest LX ops are in, CCU is also an important part of the

## VIDEO FOR THE REST OF US

### Some terms explained

**Triax** is short for triaxial – the type of cable used to connect the camera to the CCU and carries pictures, control info, tally, and communications.

**CCU** – camera control unit – allows remote control of camera functions such as iris, and how the chipblock in the camera sees colour.

**Multicore camera cable** – an alternative to triax cable. Uses 26 pins and carries pictures, control info, tally, and communications between the camera and CCU.

**Magni in-vision wave-form monitor/vectorscope**. Displays colour and timing information about pictures on a vga monitor. Used to line-up cameras with each other and make their pictures match.

**Talia 4 level router** – basically a matrix switcher for vision. Allows composite or component video from multiple sources to be switched to multiple destinations.

**Datavideo** – pre-built rack made by datavideo including Firewire capable video mixer, twin LCD screens for preview and line monitoring, and a four-way LCD screen for camera preview. Also includes comms system and HDD based video recorder.

whole process.

Shooting Moshcam is something of a balance – it needs to be done without impacting the enjoyment of the punters, whilst at the same time capturing footage which is not affected by their actions. Crowd barriers help, but these are not a feature of every gig. The guys on the front line are the camera operators, who pull the shots. Some of the regular camera operators include Chris McHardy, Matt Valent, Dean Winnell, Justin Causer, and Rhys Day. CX has watched Moshcam being shot, and it is amazing how quickly these guys all find their shots, and some of the camera angles they hold seem to defy the laws of basic physics. Hats off to 'em.

In a time when it's kind of rare to see a regular crew work across so many different shows, Moshcam is something of an anomaly in this respect. The tightness of the crew is self-evident on the shoots – nobody needs to ask what to do anymore, everyone just seems to know. The fact that many of the crew can fill multiple different roles emphasizes the point that being multi-skilled in our industry is a quality of ever increasing value.



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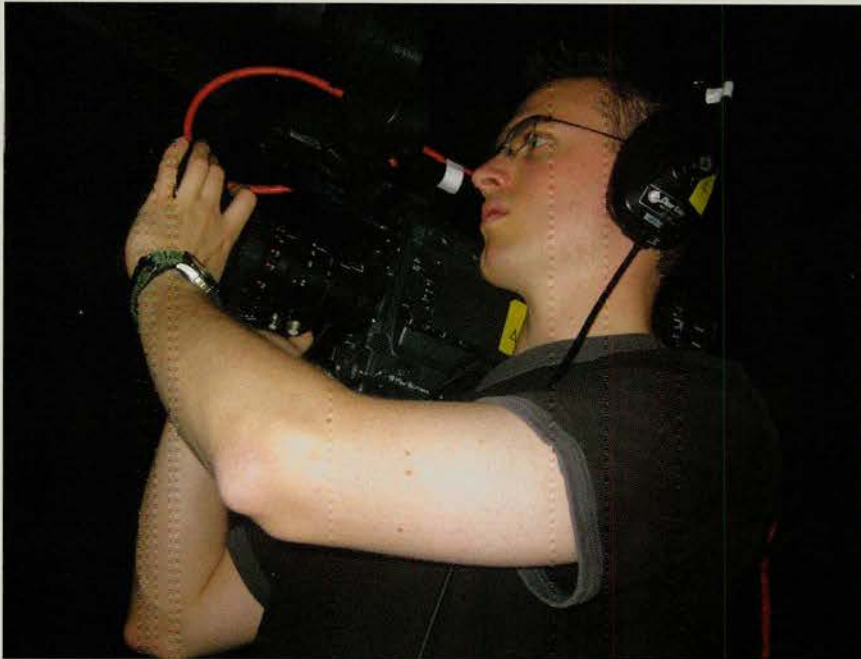
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- Matt Sorum for RØDE Microphones  
(Velvet Revolver, The Cult, Guns N' Roses)



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## MOSHCAM CREW PROFILES

**CHRIS MCHARDY**

Chris is a regular Moshcam camera operator, and at 23 is one of the younger folk among the crew. He also works as a camera assistant, and a digitalographer. Digitalography is as he explains it Cinematography in the digital realm – in other words, no film. Starting from an audio and lighting technical background,

Chris' focus on camera work built from the fact that the visual aspect of production was a long standing interest. He also runs Cinegear Productions which was established several years ago and specializes in video production and equipment hire.

Chris' take on Moshcam: "Something I really like about Moshcam is the feel of

being a part of a live cut. Though you might just be shooting one angle of the show it all contributes to the cut, and that's exciting. There's a sense you're creating something. The better you understand what the director wants from you the better you can do your job, and the greater the final result. Figuring this out from each director is a new challenge and it keeps things interesting. Live music recording is about finding a common ground in the visual styles of the director and camera operators, and using that to achieve the desired result. It's really helpful when the director gives you feedback on your work – and when they can work with camera operators of any experience level it's even better since those learning stand to gain even more from the experience. All in all the Moshcam crew is just a great bunch of people to work with."

Why he likes what he does: "Each job is unique and you get to try a lot of different things, and when you find the ones you like you can focus more of those. Every job you do you learn a new skill, and each of those contributes to the next production you do".

His advice to younger players in the industry? "Keep your eyes and ears open, and work hard!"

**MATT VALENT**

Matt is another camera champion of Moshcam. He finished year 12 in Canberra, but moved after deciding there were better opportunities to pursue his work interests in Sydney. He's been in the industry since around 1999, and spent

some time figuring out exactly what he wanted to do. Prior to becoming a camera operator, he worked in film as special effects technician, did staging work, and directed and cut music clips for bands.

Why does he like Moshcam? Simply

because he loves live music. "Pubs replacing live music with pokies really upset me, and the pub rock era is kind of gone now. What Moshcam is doing is making the gigs which are still happening available to the people who can't necessarily get there to see them. I think I've got one of the most awesome jobs in Sydney. Camera operating is an awesome job to start with, but how many people can say they've shot The Living End, Sneaky Sound System, British India, and so many other great bands? There's a great mix in there too – everything from heavy metal through to jazz."

Matt doesn't mind jostling with the crowd either – he loves the energy of it all and even when it's packed in the room he finds this actually motivates him to get better shots, and more accurately capture the vibe of the show.

His advice to young players in the industry?

Don't expect everything to happen overnight. At times there will be a lot of hard work with very little gratitude and that can be discouraging, but if you want to make it you can't let this get you down. Don't let anyone tell you that you can't make it.

CX

# Simply the Best



Sennheiser introduces a fantastic addition to the world of microphones, the evolution e965. A flagship product within the successful evolution range; it is a large-diaphragm true condenser microphone.

A completely new capsule architecture was designed for the e965. It produces a very detailed, yet warm, full sound, and offers the mic optimal protection from humidity, so that it's rock-solid even during very heavy stage use. A wide frequency range, extensive dynamics and extremely low distortion make the large-diaphragm microphone stand out from the crowd.

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The Blimp's main housing is based on a 10 frequency geodesic dome, with a triangular cross-section that allows the part to be injection-moulded in one piece. This geometry creates a high open-area ratio that greatly improves the acoustic transparency over existing solutions, yet an unparalleled level of robustness and physical protection for the microphone. The end-domes can be easily removed by twisting off, allowing easy access to the microphone. An oversize thread allows easy and intuitive re-attachment of the domes, avoiding clip systems that are difficult to use and vulnerable to breaking.

Inside the dome structure are two infinitely adjustable suspension hoops that allow for superior mounting and shock absorption for a wide range of microphones. Four styles of microphone clip are supplied to allow for maximum compatibility.

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## SAFETY DRIVES GLOBAL HOIST MARKET

*ASM expand entertainment hoist offerings*



*Jands Engineering Manager Andrew Mathieson, with Mauryc Sowka. ASM chain hoist on left, and Steel Band hoist on right.*

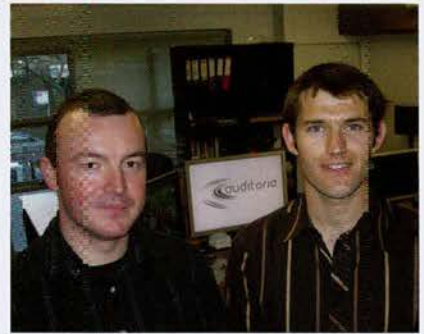
Germany seems to lead the world in safety standards, and entertainment hoists is the new frontier. According to Mauryc Sowka from ASM Hoists, the BDV C1 standard calls for a 10 : 1 safety ratio, as opposed to 5:1 elsewhere.

This means a new class of entertainment hoists has emerged, where industrial chain motors are no longer safe enough, not to mention fast enough or quiet enough. ASM offer up their range which includes a new Steel Band hoist where a steel band is wound onto a low profile spindle. This alleviates many problem with chains, including the need to change the chain once it reaches it's life limit.

Central to meeting the strict standard is a double brake system and an active monitoring of overspeed. In addition, ASM's motors decelerate when stopped, so there is no abrupt jerk which has led to shockloading accidents with industrial chain motors. According to Mauryc there have been three accidents in the past year including one where people fell from a truss due to brake failure.

Mauryc visited Sydney to support Jands with their recent sales of ASM into Melbourne Recital Centre and the Melbourne Theatre Centre.

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



## AUDITORIA EXPAND SERVICES

*New premises and people*

The hardest thing is to grow a sole trader into a consultancy, yet that's what Scott Willsallen did almost at the start of his career. Now he has expanded his consultancy firm Auditoria, with new offices in Sydney's Camperdown, and the addition of Ian Anderson as a senior team member.

Scott is well known as one of Australia's brightest audio designers, but he has headed installations, and technical management of events covering all technical aspects. Ian Anderson is well regarded for his production communications, TV and lighting skills, so his joining Auditoria simply formalises a working relationship that's been building for some years between Scott and Ian.

Amongst services offered by Auditoria are education – Scott is a first class communicator and a leading technologist, able to disseminate complex theory into chunks the rest of us can digest.

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



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John Edwards.



Joann Relova.



Angela Murphy.



Kahmun Soeng.

## HAYCOM EXPAND

John Edwards has moved to the position of National Sales Manager with Olivia Wilson taking maternity leave. New to Haycom are:

Joann Relova who brings an international perspective to Haycom having worked extensively in the US, as well as locally in Australia.

Angela Murphy has joined the Haycom Melbourne team and has a skill-set ideal for the successful coordination of corporate events with invaluable experience encompassing festivals, theatre, hospitality and sporting events.

Kahmun Soong joins the Haycom Head Office team with an enviable background of education and experience. After graduating from Curtin University with a Bachelor of Business (Acct) Kahmun worked with one of Australia's top accounting firms. He then gained valuable experience in logistics before joining the Haycom team.



## DPA DEBUT 4099 MICROPHONES NEW MOVE TO BROADER MARKET

DPA Microphones has recently unveiled the first four microphones aimed at the MI market. DPA believes that musicians deserve to get the best sound possible from their instruments when playing live. The first four models in the new range are the 4099 Guitar, 4099 Sax, 4099 Trumpet and 4099 Violin. Each 4099 is designed and optimized for one particular instrument family. The RRP for the 4099 Series microphones is \$849.

Further instrument-specific mics are in the pipeline. All 4099 condenser microphones feature supercardioid polar patterns for highly uniform off-axis frequency response and superior gain-before-feedback.

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## DOLBY WITHDRAW LAKE PROCESSOR

### *Sydney facility to continue*

Dolby Laboratories suddenly quit the live sound business, with the closure of manufacture of their acclaimed Dolby Lake Processor. Final orders were taken at the end of September, and the groundbreaking system processor is now a collectors item.

The Dolby Lake Processor can be seen driving many top-end live reinforcement systems, especially at Clair Brothers, the world's largest live sound company. In Australia there is widespread implementation of the processor, which provides crossover, system EQ and advanced processing functions between a mixing console and the system amplifiers.

Australia's foremost audio legend, Bruce Jackson came onboard around six years ago to assist in the development of the Processor and other technologies. Bruce is the most experienced and respected live sound engineer this country has produced.

He remains at Dolby.

With the sudden exit, Dolby remains headed in its traditional direction of film plus it is growing technologies into the gaming market. The firm expects to turn over 600 million US dollars this year, and will spend in excess of 44 million on research.

Excitingly a sizeable spend is in Australia where a team of around 40 DSP engineers work on technologies from the 16th floor of a building in the Sydney CBD, led by audio guru David McGrath. He was co-founder of Lake DSP in 1991 which became Lake Technology Ltd. This company was famously floated on the stock exchange and acquired a most vocal investor in the form of one Paul Keating, former prime minister of Australia. Dolby acquired Lake, but not until Keating had held fast and driven up the price.

While Dolby has quit the live audio manufacturing business, they remain an icon of audio and a very successful company.



## ALLEN & HEATH LAUNCH RECORDING MIXER

Allen & Heath has finally returned to its roots with the launch of the ZED-R16, the company's first dedicated recording mixer for over 10 years.

The new recording ZED combines an analogue recording mixer with a FireWire soundcard, MIDI controls and 'home-studio' routing so that tracks can be built in the studio, live gigs recorded, and the results mixed-down and remixed.

ZED-R16 can be used as a standard analogue mixer while recording multi-track via FireWire or ADAT, as a traditional inline mixer recording with send and return per channel via FireWire, or as a MIDI controller via switchable channel faders. It features 16 mono inputs, 2 stereo inputs, a high quality dual mic pre-amp, 4-band fully-parametric EQ, 4 auxes, a stereo bus, 2 stereo returns, and 18+18 FireWire I/O and 8+8 ADAT I/O.

Typical 'street price' is expected to be around \$4,500.

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

## ADAMSON AND ATT PART WAYS

Canadian company Adamson Systems Engineering has severed their Australian distribution. Melbourne based audio distributors ATT Audio Controls confirmed they had been terminated.

Adamson manufacture top-end live audio sound reinforcement equipment, and have a sizeable representation with Norwest Productions, Australia's largest live audio company. Norwest operate around 200 Adamson line array boxes.

In addition ATT have supplied Adamson to various installations. ATT director Frank Hinton says that at the time they were terminated they had around \$1.5 million in quotes and potential work pending. He says that Adamson had a different approach to business, and that the dispute was philosophical and not based on any material issue with work done to date.

The move is strange, as ATT have a solid long term track record representing pro audio brands – and Adamson have no logical alternative distributor in the region.

## ROBE TUNGSTENS FOR GOLD COAST ARTS CENTRE

Eight new Robe ColorWash 750AT Tungsten fixtures have been added to The Gold Coast Arts Centre's moving light system.

Arts Centre Technical Manager Chris Dbais, states "We needed some new fixtures, and the Robe Tungsten's were the best choice for excellent reliability and great features".

Robe's Australian distributor, the ULA Group, provided the Arts Centre with some demo Tungstens, which were utilised on the 'Whitlams Orchestral Tour'. After this, everyone was happy and so it was a very easy decision to purchase.

The Tungstens are being rolled out in the coming weeks for the Centre's annual in-house production of smash-hit Broadway musical, "The Boy from Oz". Lighting director Scott Allan has



L-R: GCAC Technical Manager Chris Dbais, ULA's Sales and Support Jesse Radatti, GCAC Venue Services Manager Marcel Takac, GCAC Technical co-ordinator John Wallace.

included the fixtures in his rig, and Dbais comments that he is "excited" to see what the LD comes up with.

The Gold Coast Arts Centre is a multipurpose facility incorporating an Arts Theatre, Art Gallery, Comedy Clubhouse, Boardrooms, Function Facilities, Cafes, Costume Hire and Chapel. The Arts Theatre is an 1174 seat auditorium, with full stage facilities for theatre shows, conventions and product launches, etc. The Centre also hosts a wide variety of touring productions and special events in addition to staging their own productions and performing arts summer schools.

## ZERO1ZERO UPDATE

ZerO1zerO, one of Australia's leading production and post-production companies, installed a Riedel Artist digital matrix intercom system in its new HD truck. The intercom is fully integrated with the truck's Lawo digital audio console via 6x Riedel MADI client cards. This set-up allows the truck's audio engineer to easily remote both intercom panels and 4-wire ports from the Artist system through the existing audio infrastructure.

"The choice was simple," said Keith Cooper, head of Audio and Communications at zerO1zerO. "I needed flexibility to fulfill my clients' ever increasing needs, seamless digital integration, ease of patching between communications and audio and the best sounding system available. Riedel is the one."


The truck's intercom system consists of an Artist 128 mainframe populated with 6x MADI, 1x CAT-5, 3x COAX and 3x AIO client cards. The MADI cards connect directly to the Lawo Mc66 and provide the console/intercom integration. The CAT-5 card is used for 2 Riedel Connect Solo telephone hybrids, providing access to up to four telephone



*Inside ZerO1zerO's new HD truck: The Riedel's Artist Digital Matrix Intercom is seamlessly integrated with Lawo's Mc66 audio console & routing environment via Riedel's MADI client cards.*

lines from the intercom system. The COAX cards connect external intercom panels to the truck via coax cabling and the analogue cards provide transformer balanced audio directly to the truck's 12 HD cameras.

In addition to just using the panels for comms, six DCP-1016E desktop control panels will also serve as on-air commentary stations for zerO1zerO's coverage of A-League USL Soccer. These

panels are supplemented with 6x CSX-11 commentary add-on units, which utilise the intercom panel's second audio channel. The CSX-11 was specially designed to work with Riedel DCP panels and offers expanded features for commentary such as additional XLR connectors, a phones connector, dedicated pushbutton switches for On-Air, Talkback and Mic-Mute, as well as a special fail-safe commentary mode. 



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**NEUTRIK**

# THE INSTALLER



*There's a lot more to installing equipment than winning the quote. Our reporter works in a major Australian city, for a firm who do a lot of work. He requires anonymity since some of the clients in this story need protection.*

## REVEREND MORE

Not his real name since his administrator would sue me if I identified him. His shtick was to covet whatever his 'competition' had - but to really bitch about the cost. Our sales guy got really exasperated with the countless quotes, re quotes, waffle and distractions from the Technical Manager in the church, who was of course a volunteer.

Tech Manager was pale, flabby and died his hair jet black. He was very knowledgeable since he had a network of church buddies from around the world that all knew heaps of stuff, more than we did. They are great at walk up and do it, and fall into a convulsing heap when problems arise. Then they talk in tongues. If the phone rings and keeps ringing between 0600 and 0800 Sunday morning I just know it's one of the brethren who doesn't remember where some 'ON' switch is located.

The Rev wanted a new audio system and we agreed with the prognosis. The existing system delivered lumpy response. A consultant had measured the venue at great

cost and specified a startling 32 line array elements in four clusters. We would have measured it for free, but since we won the gig we don't care. We were impressed and delighted to assist, knowing the system would operate at about 15% capacity.

They optioned the middle model in the manufacturer's range when in reality 12-point source boxes would have done the work for 150 grand less.


After a lot of stop and start, we put the thing in and commissioned it. Then the Rev decided he wanted a new digital console since it was in the foreground in the auditorium and people saw it. His competition had a top of the range unit, so that's what we put in.

I went to a service shortly after, and admired the eight piece band and four singers and wondered whether the church could ever use more than 10% of the functionality of the console. The sound pressure level was whispering away, and I was distracted by the lady six seats away praying out loud during the music. Shhh! Be

quiet!

The Rev was happy, we took a bath on the margins because they were probably appropriately tight with their congregation's money, and I endured several months of frantic after hour's calls from well intentioned but under trained volunteers who could not understand why Page 1 was different to Page 2 on the console work surface.

Our sales director got a calling after this and decided to woo a successful church which spends millions on sound, light and video. He was a bit like a groupie at the backstage door, and as transparent as a black cow in the snow. The church was hardened to the concept since at least one sales rep from an audio or lighting company turns up every month seeking salvation - and a big order.

After our sales guy was baptised in water and attended several months of bible classes and chocolate cake on Tuesday nights with his new friends, he realised they knew all along that he was a bogus opportunist. 

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you don't have to be Albert Einstein or Gottfried Leibniz to figure out enough to be proficient in the design of lighting systems. Actually, there are only a handful of things to know about math that will help you perfect the craft of lighting. If you're like me and your brain can only hold so much, make sure it's holding these five things:

**5. Units of measure unlock hours of pleasure** – The units of measure can give you strong hints about how to figure out math problems. For example, if you're trying to figure out speed in kilometers per hour, then the units of measure tell you to divide the number of kilometers by the numbers of hours it took to get there. And if the time is given in minutes instead of hours, then look to the units of measure to convert from one to the other. There are sixty minutes in one hour, so if you divide the number of minutes by sixty, you'll come away with hours. Why? The units of measure are: minutes divided by minutes per hour = hours.

**4. Even it up** – If you have an equation with the value you're looking for but it's on the wrong side, you can manipulate it to make it yield that value which you are looking for. Just make sure that whatever you do to one side of an equation, do the same to the other side; then you haven't changed the relationship. For example, if you know that  $V = I \times R$  (Ohm's law!) but you want to

figure out I or R instead of V, then you can divide both sides by I or R to change the equation:

$$V/R = (I \times R)/R = I$$

or

$$V/I = (I \times R)/I = R$$

**3. If it ain't right, it's wrong** – A right triangle is one in which there is a 90° angle. Right triangles are user friendly because we know a lot about the relationships between the lengths of the sides and the three angles in a right triangle. If we can identify a right triangle and we know the length of two sides, two angles (one of which is 90°), or one side and one angle, then we can find out the length of all three sides and all three angles. The good thing is that any triangle can be turned into two right triangles (if it isn't already a right triangle) by drawing a perpendicular line from the apex of one angle to the opposite side.

**2. Pythagoras had a theorem** – Some dude who lived long before Christ recognized that there was a fixed relationship between the lengths of the sides of a right triangle. That relationship, called the Pythagorean Theorem, simply says that the square of one side – the side opposite the right angle – is the same as the sum of the squares of the other two sides. In equation form it looks like this:

$$a^2 = b^2 + c^2$$

So if you know the length of any two sides in a right triangle, you can figure out the length of the third.

**1. Sines of the times** – Learning a little trigonometry will take you a long way. It's not as difficult as figuring out how to play "Hideaway" like Freddy King. It's simply plugging in two values of a right triangle to figure out the unknown third value. It looks like this:

$$\text{Sin}\theta = \text{opposite side} \div \text{hypotenuse}$$

where  $\theta$  is the angle and the hypotenuse is the side opposite the right angle. Don't let the terms "trig" or "hypotenuse" frighten you. They're actually very simple concepts.

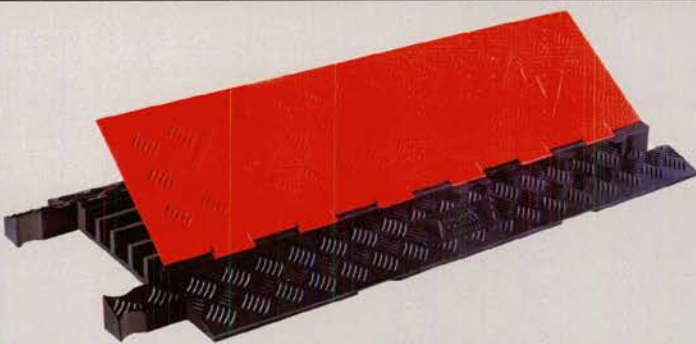
Stephen Hawking was once told by his publisher that his book sales would halve for every math equation he put in. From my experience leading seminars, I know that many of us in the industry "heart" math about as much as the lighting crew "hearts" those obnoxious sound checks. But as a product of the Texas public school system, I'm here to tell you; if I can figure this stuff out, certainly you can.

If you find math difficult to stomach, then do what my daughter does when she has to take her vitamins – hold your nose and just do it. It'll build strong bones and muscles in the weakest of math minds.

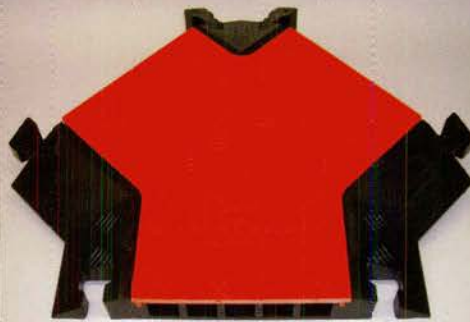
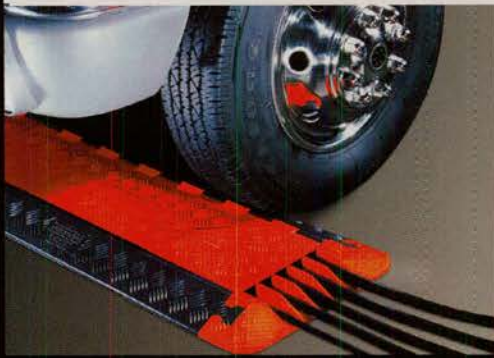
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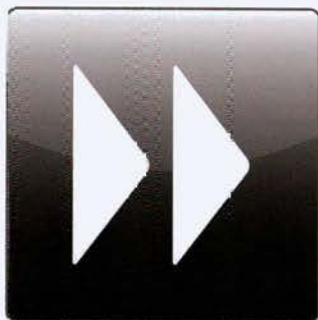
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# How to... MAKE AN ALBUM FAST



Rob Zimola from R&R Studios pushes the 'GO FAST' button.

BY JULIUS GRAFTON

Rob Zimola is a rare species these days – a suburban engineer and producer who owns his own professional studio. At R&R Recordings he's recorded almost every genre of music over the past 25 years – including some very strange, some very beautiful, and some very ethnic.

The passage of styles and fashions never fails to amaze. Lately R&R seem to have cracked a Christian seam. Nothing wrong with that – this is probably the fastest growing niche in modern music, and if you add up the units shifted by one Darlene Zschech (quillionaire soccer mum from Dural NSW Australia, around two tonnes of ARIA awards and Platinum Albums.....) then you get the idea.

Recently an artist known as Patrick A from JTAG church recorded his CD, *Just Your Presence* at the studio – it is a Christian release which he sells through those channels.

*Just Your Presence* was recorded earlier this year, over a month of part time sessions totaling around 25 hours – tight and efficient where a project like this can

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Recently Patrick came together as musical director for a performer called Julie Stott, and his band backed Julie at the sessions, held once again at R&R.

## THE STUDIO PROCESS

Patrick A was first attracted to the studio by word of mouth. A pre-production meeting set the scene. They had an album ready to go.

Rob Z doesn't do demos. He chooses to work with bands and musicians who've already got something down in whatever form.

"I rely on hearing the (bands) demo at preproduction – it gives me an indication of instrumentation, what they sound like and ideas of what can be changed or added. It prepares me for the session. And gives me the option whether I want to do it."

"The demo comes in – the band or artist come in and the demo goes on the CD player. I press play. Twenty five years experience says I've probably got a reasonable idea what's going to happen next. I've already had the phone call, so I have an idea whether I'll do the project".

"The Patrick A demo came as a CD, we sat in the studio and switched it on. We reviewed it. I threw questions at them: what have you got there? I hear a choir, what is in it?"

"I can give them preparation tips – get new skins, set up new strings a few days beforehand for your guitars, check your gear and cables are right so there are no problems on the day."

"It's all about listing to the orchestration and the material, does it need to be five and a half minutes? Can



*The keyboard guy loves the sound of his D'ed Roland.*

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This is Ed, assisting on the *aaa*.

we cut out a verse? If we do, will it change dramatically from what they envisage. It's to look at making it more commercial rather than an ego outcome."

This producer role is the best part of being a one man studio team, says Rob, since it unleashes creativity.

The Patrick A album was on a very limited budget – Rob was happy enough with it to let the project out the door. "I would have revisited a few things but – you leave it in the mix if you have time constraints".

### ENTER JULIE STOTT

The minute the Julie Stott demo arrived, Rob was struck by the Darlene Zschech parallel – not that the music was the same or even nearly the same, but that the vocal quality was so similar. That is, not an imitation but in quality and feel – the things you can't imitate.

"She has an emotion that is extremely hard to capture out of a vocalist. She wrote all the music. I was instantly impressed with the songs. I liked it. It's commercial."

The session was booked. Saturday came around, and Patrick A and his band arrived early – as is the enthusiastic way of young guys pumped full of spirit. A quick group prayer got things under way.

The lineup was drums, bass, guitars and keys. A choir was booked for a forthcoming session. Julie is the vocalist, of course.

Eleven tracks were laid in one day. These were the bed tracks, guitars need to be put on, acoustic licks, keyboard stabs and licks are yet to come. Guide vocal was laid. "As a producer, I want to vocalist to be totally relaxed in her own environment without the band all around, to capture the emotion that is otherwise hard to get".

"I was surprised we got the tracks down, we budgeted another half a day to finish the tracks."

#### THE TECH STUFF

Drums were miked thus: snare with an ATM25, kick ATM25, rack and floor with Rode S1 condenser which is actually designed for use as a live vocal mic. "I liked the

*"I was surprised we got the tracks down, we budgeted another half a day to finish the tracks!"*

rejection and the polar pattern they had, for the toms", said Rob. "It really gave a fullness such that I didn't need to worry about EQ".

"One Rode NT4 stereo mic was used overhead – fantastic, no phase cancellation, positioning and width of the drumkit was perfect."

The guitar amp we DI'd from the preamp. Because the band were recorded live, we wanted to reduce spill. Plus I didn't like the sound of the speaker output. Bass was DI'd as well, through a tube DI.

The keyboards were also DI'd.

Julie sang the guide tracks into a Shure SM 58 – in the studio, with the band, to keep the interaction flowing. The next step is to record her proper vocal tracks into a Rode Classic 2 mic. "It's a really rich tube mic, and she has the dynamic range it will capture really well."

The project was mixed through a Yamaha DM2000 console, monitored on Tannoy Ellipse monitors, and multitracked



*Laying down bed tracks with a guide vocal to get the band into the groove.*

into MOTU Digital Performer software on the Mac. "I really prefer it over ProTools which I also have, DP is far more musical."

"Everything sounds the same when everyone uses ProTools....."

For now the project is under way, the guide tracks are down, and the finessing lies ahead. We'll report back when the album is finished.

*\*R&R Studios is co-located in the JuliusMedia premises.*



**Selecon**

**“ Newcastle’s Civic Theatre may be 75 years old but it is light years ahead in energy-efficient illumination thanks to Selecon. ”**

Operations manager David Grinstead comments on the decision to replace the Civic Theatre Newcastle's entire stock of ageing 2.5kW FOH profiles with Selecon Pacific 1200W 80V Zoomspots. [www.seleconlight.com/pacific80v](http://www.seleconlight.com/pacific80v)

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# history



The good thing about history is the perspective. There's plenty of that in our secure offsite storage dungeon, replete with empty wine racks and a shackled gimp on 24 hour guard duty. We keep 18 years of files down there, along with dirt files on most of the more colorful shonks in our industry. The other day I even saw a diamond python, hungry and fresh out of hibernation slithering down the air vent, so bac guys watch out!

## 15 YEARS AGO: CONNECTIONS NOVEMBER 1993

Hubba hubba what a cover. The 'laser artist' thus shown bore some vague relationship to a hideously boring story about the lighting of some huge gay dance party. You know the drill; there was lighting – 12 Intellabeams. Then there were three lasers. Wow. And Vari\*Lite Australia were on hand with 2 x Artisan consoles, 30 fixtures, three techs and probably the lions share of the budget.

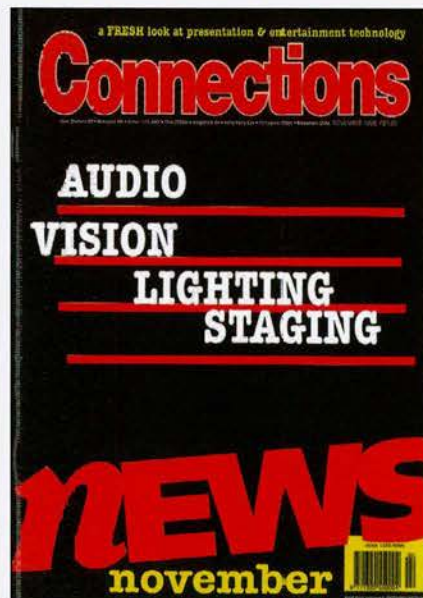
Fostex launched the RX8 to get some of the ADAT business. It was compatible. DDA launched the QII, a live console starting at just \$37,000 plus tax. And noise laws were in the news because some musty old venues were getting shut down.

It was the global launch for the very first ENTECH, so there was a four page pullout



in the middle which detailed, a year out, all the Workshops, Social Events and the price per square metre. It was \$145, and the price went up incrementally as each stage was to be launched. These were heady days.

A feature on a trucking company quoted the married couple who owned it, with rather too much information about the time they met. He was driving. She wasn't. She wore a short leather mini with nothing underneath. What were we thinking? What



were they thinking telling us about it?

Phil Tripp wrote a column in which he celebrated the departure of the sexist old guard from the recording label corner of the biz. He also alerted us to a promised onslaught by a label called Applehouse, who said they would blitz the CD market with unauthorised live CDs. At the time, CD retail prices were around \$30.

CLS were Australia's largest lighting production company. Tina Turner suffered

"I write songs that ask for extreme shifts in dynamic and volume..."



"Everything in between needs to be heard if we're to pull them off in the live realm. EMA in-ear monitors actually do all of the things I've always felt were missing from other units. We hear each other as much as we want or need to without losing that important sense of being attached to our environment. I don't have that awful sense of being trapped in my own skull with no awareness of what it is anyone out in the audience is hearing. Also nobody's fighting for audio real estate up there anymore. Pretty important stuff."

Glenn Richards Augie March



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EAR MONITORS AUSTRALIA

from a bad mix in Sydney, according to us. Bon Jovi didn't, and his sound guy, Tony Blarc said that in the USA the audio companies were worried at the cost of crew – 60% of turnover.

'The Idiot' featured part 3 of his/her guide to basic lighting. This one featured the lighting of a Johnny O'Keefe social event and made passing mention of his generosity with medication.

We profiled Studio 52 in Melbourne – they survive today, because they innovate.

**WHAT WE PAID:**

- Dynalight Production Dimmers: \$3,212
- Jands System 1400 2 x 15",  
1 x horn passive speaker box: \$4,495
- Strand Prelude F 650w fresnel \$333
- Roland S Series Sampler: 'Under \$4,500'

**10 YEARS AGO:**

**CONNECTIONS NOVEMBER 1998**

Wow – the cover theme was that there was no photo. Any CX/Connections/Channels magazine aficionado will know the passage of time has seen some sensational covers. Then there was this one. The cover is one of the hardest things to nail up, 18 years on and we still wrestle with the thing.

Howard Page, the audio legend from Sydney who was instrumental in the early success of Jands, was coming home to mix the Bee Gees. It was to be the first test of the brand new Sydney Olympic Stadium.

The GST was coming. Studios were upset at the idea of charging 10% on a project, but wholesalers were rejoicing. The wholesale tax of 22% was out, so GST meant a retail of \$222 (with GST) –v- \$247 (with wholesale tax).

Australian Screen Sound Guild held their inaugural screen sound awards, and we declared it a knockout. Sadly the ASSG fizzled a few years later, like so many Australian associations. The need to operate democratically, elect people and keep records has thwarted many industry associations in our time.

And of course there was the oft-repeated theme from the era, and that was that the recording studio market was in terminal decline. It was, it sunk, and today there are just a few places around. So why do we have 1,000 gullible kids enrolled in recording studio courses in this country today?

Crest was sold to Peavey. ProTools was released on PC for the first time. DVD audio was slipping as a concept, as consumers decided CD's were just fine. Hey – today we have MP3 which is even less fine than CD, but the punters are happy.

MiniDisk was touted as a cassette replacement. It wasn't. Reader Gus Macdonald detailed a nasty brush with the MD during a theatre production of the show, which we dare not name. He lost a show, because his MD went on the fritz. Moral of story: have backup for any essential playback.

The LED was here with large screens from Clipsal and Screenco impressing us outdoors. Hard to believe that there were CRT and fluorescent discharge systems in use for outdoor video – the LED just revolutionized this market.

Garry Van Egmond lamented on the state of touring: 'the low exchange rate has caused a lot of damage'. At the time, the dollar was capable of falling by 25% between the time a tour was negotiated and staged. Venue rentals in Australia were far too high, he said.

In Lighting Land, the strange machinations of the Greater Union Village Technology entity were playing out, with a division called Techscape moved under the GUVT umbrella. There was some hard to fathom stuff happening at the time.

**WHAT WE PAID:**

- Dynacord Powermate 12 powered mixer \$4,499
- Tama boom stand \$99
- JBL EON 15 powered speaker \$2,295
- JEM Club 20 fogger: \$2,236



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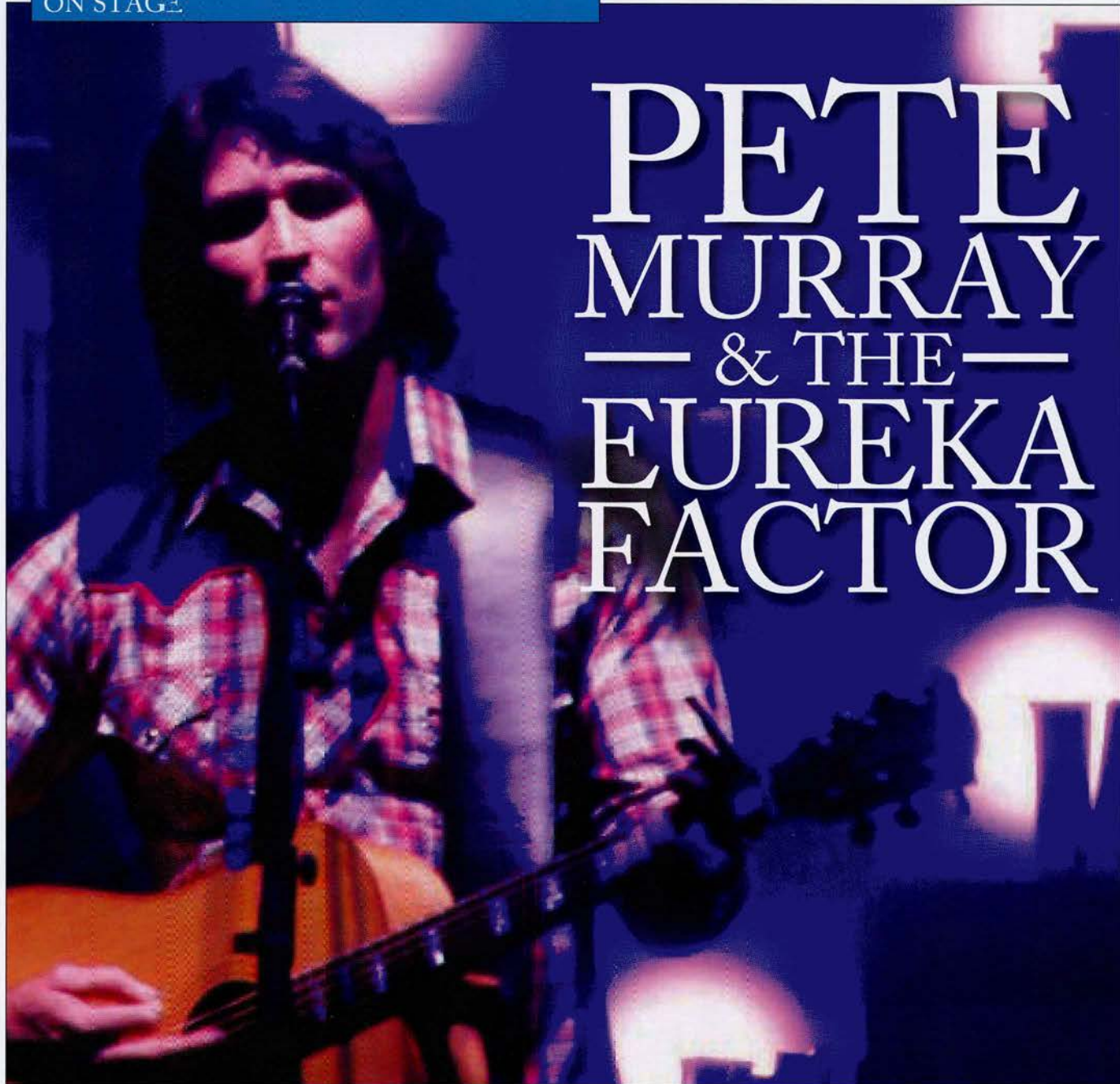
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ON STAGE



# PETE MURRAY — & THE — EUREKA FACTOR

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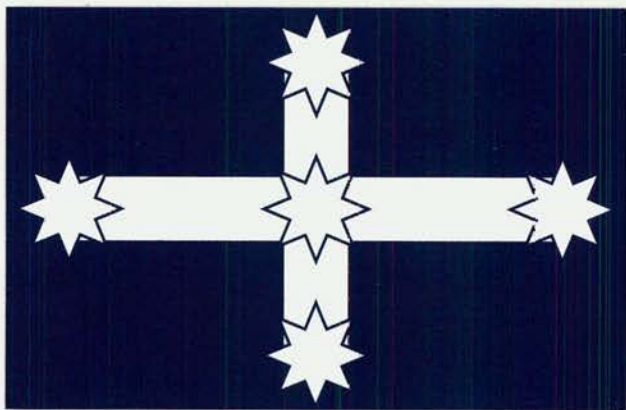


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## 7 weeks on the road - with a set from IKEA

After over two years off the road in Australia, Pete Murray and his band The Stonemasons hit the road with the Eureka 03 Tour.

As with his previous tours, Johnston Audic provided the sound gear whilst Phaseshift Production supplied the lighting. Past crew members were called back including FOH engineer Matt Duffy and lighting designer Cam McKaig.

Matt Duffy was mixing on a DiGiCo D5 console which he describes as his console of choice.

"I was however very keen to use the new SD7 but that didn't come together for a variety of reasons," said Matt. "I used the SD7 on a rehearsal and it was great. The thing I like about DiGiCo consoles is that it's similar to working on an analogue console. The first digital console I took out on a tour was a Yamaha PMD but you had to think about it too much. Pete's show is not compact, it's very dynamic and I didn't want to be forever flicking through pages so I went back to using an analogue console until I discovered the DiGiCo range. I set my DiGiCo up so that it is similar to working on a Midas XL4 console."

### HEARING THE DIFF

"I still hear a difference between a digital console and a XL4 especially with kick drums and bass guitars so I've been looking for something that has more processing power making it closer to an analogue sound. At the end of the day I like to keep things simple, have it sound good and natural. I don't do a very process mix, it's all about reproduction and is not very complex. It's tricky in that it's dynamic and Pete's quite a gentle singer so when the band cranks up and he doesn't crank up with them it can be fiddly. However it's something I'm used to so I always set the D5 up so that it doesn't catch me unawares during the show."

In terms of effects on the D5, Matt is using a couple of reverbs and one delay mostly used on Pete's vocals.

"On his new album Pete went a bit lush with more delay whereas the previous albums were much drier," remarked Matt. "I use the gates and compressors on the drums and a bit of compression on this and that. I also have an outboard preamp (Focusrite ISA220) for Pete which I used to use as a stand alone preamp channel but now I use as an insert because it works better with the DiGiCo. In fact I carry the Focusrite preamp everywhere we go. I'm also using a Smart Technologies S2 stereo compressor over the whole mix which gives me a nice analogue compression. So we come out of the DiGiCo and then use an analogue return to the PA using an old Klark Technik DN360



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Sound man Matt Duffy.

which I've been using for fifteen years.

During the tour several inhouse PA systems have been used although Matt prefers to use a Nexo PA system. A stack of Nexo Alpha speakers were on the truck and used in many venues although in Melbourne's Forum Matt tried out the Outline Butterfly array and in Sydney's Enmore Theatre he had a Nexo GEO D system

"I've toured the Nexo Alpha on so many tours around Australia," he said. "I'm used to it and also on this run we were doing several league clubs and venues with low roofs and they're great for them. I find the GEO D gives me more separation without the processing and I'm big on that"

Matt is a big fan of in-ear monitors, in this case Sennheiser G2, because with wedges he found the monitor system and the FOH system would only have a few precious dB between them and that made it very tricky. Pete's tour manager Adrian Barnard, known as Ade, also looks after the monitors using a Yamaha PM5D console.

## ENTER IKEA

Cam McKaige has also been with Pete for several years constantly coming up with unusual and innovative lighting designs. This time he does not disappoint with a hundred LED PAR lamps in IKEA bookcases!

"We started with a retro PAR can idea with pods of PARs but a month out from the tour starting Pete changed his mind to wanting something that resembles the album cover which is a bookcase," explained Cam. "That's where the idea of turning pods of PAR cans into bookcases developed and that actually became the stage set. We thought about projecting

the books to try make it as easy as possible but ended up with this idea."

One hundred LED PAR cans, supplied by ULA, are installed within four IKEA bookcases. The 6ft x 6ft bookcases were taken to Phaseshift Productions (the lighting supplier for the tour) who made custom frames for them. A total of seven hundred books were sourced from charity shops.

"The idea of using the bookcases and the LED PAR cans was all very well but we needed distance between the actual fixtures and the bookcase," began Cam. "Personally, I don't like looking at a LED product. I find them very unattractive so in each shelf there is frosting so that you don't actually see the cans or the lens, only the colour. The other difficult factor is that we only had a certain amount of truck space so we couldn't have normal bookcases – we made them so that they retract for transport which means the cans were a bit more protected. Stewart from Phaseshift looked after the metalwork and the actual making of the cases. He was fantastic and seven weeks into the tour there have been no breakages and everything has worked fine."

The bookcases are raised three feet off the floor at all venues as Cam occasionally spells out words with the PAR cans and the height gives more clarity to the audience. He admits that he has had a ball working with new technology and says his job is made easier by the MA Lighting grandMA control console.

"Basically the console does all of the work!" he said. "I'm extremely happy with the results; it's very arty and theatrical but we've managed to give it good overtones of a live rock'n'roll show."

Once the bookcases had been made and the decision taken to make the stage a

theatrical set, Cam raided the Melbourne Theatre Company's hire department for props such as an old armchair, lamps and a fireplace. It then occurred to Cam that a library should have some old pictures and he took this idea in an abstract form with four custom-made picture frames. These frames are lit internally with LED tubes and hover above the bookcases.

The only analogue on the tour is ten 4-lites and ten Selecon profiles. Moving lights consisted of ten Martin MAC700 spots on the back truss and ten MAC700 washes on the front truss.

"I used the MAC700's on the last Pete Murray tour and I loved them," stated Cam. "Once again Pete was adamant that he wanted a theatre-based show so I've kept a lot of the movement down. Where there is movement I've kept it very slow and dramatic. Again, we've gone with the technology but used it in a very creative manner. This tour is all about colour – the impact of it, the use of it, the contrast of it – and the MAC700 series is perfect for that."

Having always been a Hog-man, this is the first time that Cam has toured a grandMA.

"I've always been comfortable with a Hog but because of the technology that I'm using on this tour I felt I had to use a grandMA and let it do the work," he said. "Without a doubt I'm totally sold now!"

Cam comments that once again Lawrie Videky and his team at Phaseshift Productions were fantastic in bringing a crazy idea that he had on paper to a working stage set ready for seven weeks of national touring. Cam's two lighting partners in crime for this tour were Tony Mapleson and John Bamford, two guys that Cam insists have great potential in the lighting industry.

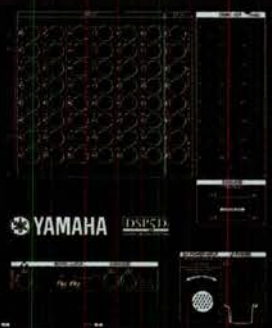


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# PROFILE: LES BISHOP



*Sydney based Les Bishop runs a company dealing with media, production and technology. He travels nowhere without the trusty cappuccino machine...*

## What do you do for work?

The best way to describe it would be as a technologist. I run a company dealing with media, production, and technology. My clients including Foxtel, CNBC, The OB Group, Total Show Production, Television Sydney (Channel 31), other public broadcasters, and Fairfax Digital Media. The roles I fulfill for these businesses vary widely, from Technical Director through to facility design and commissioning.

## When and how did you get started in the industry?

I started as a Channel 7 trainee in the days before digital tape machines existed, where 1 inch tape was the preferred video media! I trained in all operational and technical departments throughout Channel 7, and left as an experienced technical manager, director, and producer. Following this I pursued a director/producer role with Beyond Productions, then subsequently moved on to the most exciting part of my career, at Zer01Zer0. While there I developed their outside broadcast facilities, rebuilt their studio and control rooms, and directed & produced over 2000 sports and entertainment programs including soccer (and 1500 episodes of Aerobics Oz Style). I later formed my own company, Digital Space Media. I specialize in the design, installation, and maintenance of television studios, edit suites, and playout facilities.

## What do you enjoy most about your job?

It gives me a reason to look forward to turning up every day! Each day holds something new, and I am in the fortunate position of working some of the most ambitious, exciting and progressive companies in Australia.

## What do you enjoy the least?

Getting out of bed before 10am.

## What's the most technically impressive thing you've seen lately?

Purely on an equipment level, the development of the Panasonic P2 series of cameras and recorders is pretty exciting. Moving from tape-based systems to solid-state technology with impressive DVCPROHD 100 megabit. It's impressive because it's the first time HD acquisition is affordable to both young and experienced program makers alike. So far as events are concerned, the way events are now delivered has come a long way. From the old days of analogue fibre, we're moving now to broadcast standard HD delivery via ATM and IP (internet protocol over private network).

## What's the most fantastic technical screw up you've ever seen on a gig?

Poor power management on an event – it took out not only the OB but also the event the OB was supposed to be covering.

## Closest call?

It's a good one, and it happened on a soccer broadcast at Bruce Stadium in Canberra, during an Ericsson Cup A League Match. During the day before the game it was identified that the fibre optics from the venue were faulty. This was reported 5 hours to air, and 20 mins to air no action had been taken. We removed the locked fibre box with a crowbar, re-wired it, and pictures were established back to Sydney at 5 seconds to air. We went to air 2 seconds late.

## What tools could you not get through the day without?

The most important tool is the cappuccino machine – without this there is no gig. The mobile phone is equally essential – with more stress placed on people to deliver, a lot more liaison is required between venues, technical providers, crews, and production personnel. EVS is another one (EVS is a server based video replay system). It's probably the most exciting and widely used tool in television broadcasting

today.

The last essential is a good communications system – on any event communication and the comms tech is God. The requirement for communications on outside broadcast for instance has doubled in the last 5 years. Whereas a 32 port communications matrix was adequate to cover 99% of events, the minimum requirement is now between 72 and 100 ports for a large gig.

## Who do you look up to?

There are a couple, and the first must be Harry Michaels. He is an amazing man, and one of the most influential and well known personalities in Australian television. Maybe the most well known. He created Zer01Zer0 and with amazing business sense turned it into one of Australia's foremost and highly sought-after facilities. I would be happy if I achieve 20% of what he has.

Noel Brady and Mike Raymond, who together were an amazing production team that produced the motor racing for over 10 years at Channel 7. Saul Stein too, he's a visionary when it comes to television sport in this country. I would do any job to work on his team. Finally, the audio twins Tony Koveos and Keith Cooper. Without their involvement in outside broadcast and events, things would never go as smoothly as they do. Their attention to detail and commitment to the production at hand is second to none.

## What's your take on HD? Is SD redundant yet and if not how long has it got left? Where do you think video is headed?

HD is here, and now thoroughly embedded into the production psyche. The biggest issue is there is still a lack of understanding of formats and delivery techniques. There is no one consistent format currently used in Australia across all networks. This could actually be a good thing since we're not bound in the early stages to any one format – we can try different technologies to see what gets the best quality results.

The biggest issue with "contribution standard HD" delivery (minimum

quality a network will accept to playout on a channel) is that in many cases we're using an out-dated SD platform. HD requires four to eight times the amount of bandwidth that SD does, but luckily new generation of IP and satellite encoding (including MPEG4) is providing an answer to this.

In the commercial broadcast arena SD has basically been phased out of production, and is now a corporate / pro-consumer level format. SD will exist for another four to five years, but will be phased out over this time. The main reason for this is video projectors and LED walls are now of such high quality that feeding them with an HD SDI source actually makes a noticeable difference to picture quality. Large corporate and stadium events have a minimum requirement of HD delivery to screens. Because of this requirement, many people now bypass SD in favour of HD.

Video is headed for convergence. We're seeing the line between video and data rapidly dissolving. You can now shoot a show in full HD, then immediately afterwards send a low-res copy via ADSL to your edit company so they can start the edit process immediately. The full bandwidth video



*Les bez equipment! This flyaway kit includes a Sony SEG 2550P Special effects generator, Sony Camera Control Units, IRT routers and switcher, and monitoring.*

can then be sent through overnight (larger files = takes longer to transfer) and then the edited footage can be re-conformed (low res replaced with high res). This allows for very quick turnaround of footage even from remote locations.

**What are the most important characteristics you look for in crew when you're staffing broadcast gigs?**

I believe that in television, personality equates to about 60% of the skillset. In

a competitive market I would definitely prefer to employ someone who gets along well with the rest of the crew and has a good work ethic. Secondly I look for crew members who are multi-skilled. Where budgets are tighter people want fewer crew on their gigs, so a person who is multi-skilled will always be at an advantage. In the late 90's the crew cost of an outside broadcast was around 30% of the total cost. Today it's almost 60% of the total cost of the job. CX

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# CLIMATE CRASH

*Carbon Offsets for Entertainment. How our work generates pollution, and what to do about it!*

*CX helps you cut to the chase, we've quantified what it actually costs to offset the consumption for a show. Anyone can do it – today. Venues, production people, concerned artists. There's even a way for you to gift some credits to someone. So what are you waiting for? Julius Grafton reports:*

**W**e recently did some math on the cost of offset for a concert. You know what an offset looks like? It's where wind power, or hydro power is purchased. The other end of the stick is where someone rushes out and plants some trees to soak up your carbon dioxide.

Specifically we looked at the power consumed by the technical production, which doesn't include the venue lighting or airconditioning. The power draw for a show varies considerably – a small 3 hour show with 4 smaller moving lights and 10 static lights would draw about 36 kilowatt hours when combined with vision and a basic PA. That accounts for the variations between idle and full power.

We all should know that if we have calculated for 3 phase at 40 amps per leg, then that 120 amps is the sum maximum draw out of that outlet at a given instant. 120 amps is equal to 28.8 kilowatts (there are 2.4 kilowatts or 2,400 watts in 10 amps at 240 volts) but we aren't going to draw that all the time. Our shows ebb and flow with volume and lumen intensity.

## THE COST

To get to the cost of the offset wasn't easy until we found a NSW company with a crackerjack website. We suspect that there will be some shocks to come when some schemes fail to actually do

| ITEM                    | KILOWATT HOURS | TONNES OF CO <sub>2</sub> EMITTED | COST TO OFFSET |
|-------------------------|----------------|-----------------------------------|----------------|
| 1,000 watt profile spot | 1              | 0.001                             | 0.02           |
| Small gig               | 36             | 0.0038                            | 0.76           |
| Medium gig              | 100            | 0.100                             | 2.11           |
| Large gig               | 200            | 0.200                             | 4.23           |

what they say they will. If you pay for an offset, as in for clean power on your power bill, how do you know there is actually something happening at the other end of the transaction?

Let's assume that there really is a wind farm, or a tree planting scheme being run in lock step with the money you pay to offset your emissions. Relax and sleep well. Given the potential for diversion, when a scheme is selling – say – olive trees planted in Turkey, maybe governments should legislate carbon fraud as an extra nasty crime?

Using the calculator online at The Carbon Reduction Institute in NSW, the emissions and costs associated to neutralise them appear in the chart.

So the cost isn't that high, is it? The Carbon Reduction Institute want to sell you offsets, they have a handy shopping cart hanging off their calculator. While the one off gig doesn't equate to a huge number of tonnes of carbon or a big bill to offset, what about a flight to London? This generates 4.81 tonnes and costs \$95.24 one way, in economy. They helpfully differentiate business and first class, it gets more expensive.

## MEAT AND POTATOES

We used to run the water and not think about it, and many of us were slack with wasting power since we were paying not much for it. That will all change, is all changing through greater awareness, guilt,

and ultimately the price. Power and water prices will rise as hard and fast as our fear grows about the climate shutting down.

Venue owners in particular are looking hard at the cost of power: when do we not aircondition the venue? Do we need all the worklights on all day? Why do some shows need so much power?

Fear is a fabulous driver of human behaviour. Look at banks in England. Under a sudden fear of failure caused by the current global fiscal mess, a big bank swallows a competitor – an anti competitive move before The Fear took hold.

How about driving your car? The CX staff car is spewing 8.97 tonnes into the atmosphere per year, and we are now shamed into paying \$177.61 to neutralise this. Hotel rooms? Stay 10 nights per year in a 5 star room (are there any other kind?) and generate 0.07 tonnes. Spend \$1.44 to deal with it and ease the guilt.

The Carbon Reduction Institute has got selling carbon credits down to an artform – you can buy a gift for mum: a tonne of carbon credit, for \$19.80! Where would she like it dumped? There are even some packages like a Wedding offset: at just \$495 for 25 tonnes, based on 75 guests.

We don't know much about The Carbon Reduction Institute – they are most likely every part real, and the website sure looks great. So take them at face value, and if you're starting to get worried about our planet, get with the program. **CX**

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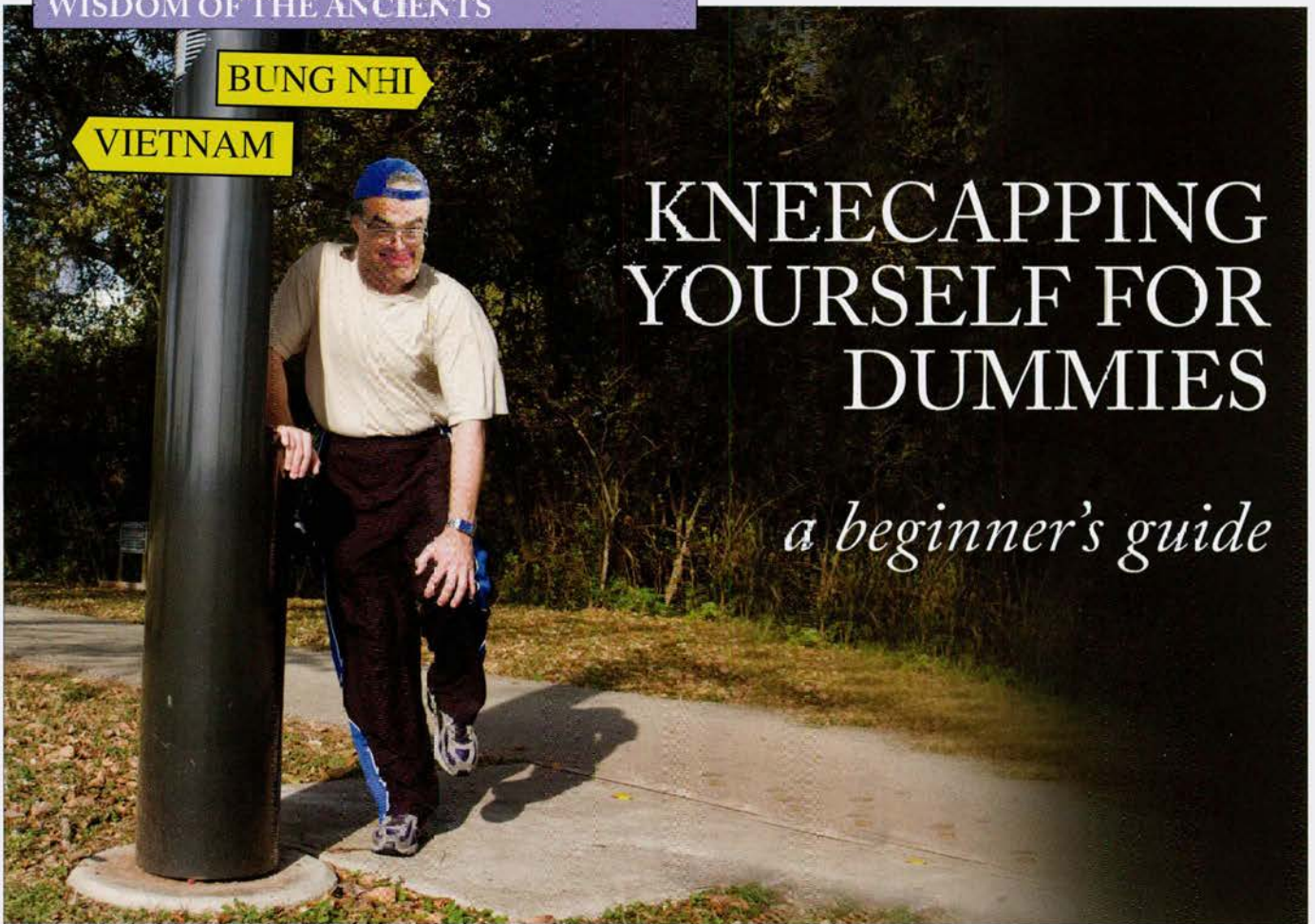


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# KNEECAPPING YOURSELF FOR DUMMIES

*a beginner's guide*

BY DUNCAN FRY

**T**hey say that a sore knee is a great contraceptive – it's guaranteed to make you limp! Bcom bocm

My new doctor is about my age, and from Vietnam. A great guy, very conscientious, and rare amongst doctors in that he has a sense of humour. Looking through my file, he glanced up and said "Ah, you're a child of the 60s. Have you ever been to Vietnam?" then squinted at me as if he were lining me up in some rifle sights!

Hmm. It appears that instead of shooting at my mates in the rice paddies of Da Nang, he's now dispensing medicine to them! Rather ironic, if you consider that the companies who make those medicines probably made Agent Orange too!

"No," I replied, "but I missed out by one day on an all-expenses-paid trip there back in the late 60s!"

Which is true – the birthdays on either side of mine were pulled out of the barrel in that popular daytime funshow VietLotto!

I was reminded of this when I was speaking to the drummer in the band the other day, and he asked how I was.

"I'm in real pain, mate," I said. "My Vietnam knee is really hurting today."

"Vietnam?" He said incredulously. "You

weren't in Vietnam... were you?"

"No," I replied, laughing, "I was kicked by a police horse in the demonstration when Jim Cairns tripped over in front of me!"

"Bullsh--!" he laughed.

Actually he was right. Although I do have a bad knee, it has nothing to do with Vietnam at all.

In another lifetime, when I was the sole proprietor of a record shop called Dunk's Disks 'The Smoothest Sounds in the South', I decided to halve the size of the shop and set up a rehearsal studio in the remaining space.

Working on the layout, and shifting stuff around one day, I leapt up on a 4560\*\*\* speaker box, and tripped over the ligaments in my knee. I can still hear that sound in my head now, and it sends a shiver down my spine.

I fell to the ground clutching my knee.

"Aaaagh! get the doctor!" I yelled to anyone who would listen. The nearest doctor had died of alcohol poisoning in a previous story, so it was about 20 minutes later when they came back with the new doctor who was two streets away.

He looked at me rolling on my back like a stranded beetle, then poked and squeezed the knee. Visibly paling at the stream of obscenities that followed this, he stood up and said

"Aha, looks like torn anterior cruciate

ligaments."

Uh oh, that didn't sound good. A friend's Afghan hound had suffered the same problem and then had to have the leg removed after it went septic. From then on only his giant dog bagging on the ground kept him vertical!

Luckily the doc assured me that this wasn't going to happen to me. He went down to the chemist, strapped up the knee tightly (more pain, but he was becoming immune to my cursing by this time!) gave me some crutches and very strong painkillers for the knee, then told me to stay off my feet for a week at least.

A week? How was I going to earn some money? Luckily it turned out to be a quiet week gigwise so I didn't miss out on any high paying stuff. But I was relegated to just driving the truck and twiddling knobs for at least a month. As anyone who has tried it would know, it's a bit hard trying to carry a 4560 when you're on crutches!

A week later I went to see him. I had to go anyway, as the delayed stress hit me in the form of a massive asthma attack, one on which no amount of puffer had any effect. Obviously I was Snow White's missing 8th dwarf – Wheezy.

"That's a pretty nasty chest you've got there," the doc said after listening to it for a while. Scribbling out a prescription, he handed it to me "Here, take this to the

chemist then come back with it and I'll give you a shot."

The trip to the chemist, only about ten shops away, must have taken me at least 45 minutes. Limp, lurch, wheeze, rest on car bonnet, limp, lurch, wheeze, rest...and so on, till I eventually got there. Luckily for me the chemist saw my condition, and, worrying about the amount of paperwork required should I expire on the spot, drove me back to the doctor's.

"Crikey, I didn't realise you were quite so bad," said the doc. He pulled out a syringe, jabbed it into the little bottle I had brought back from the chemist, then jabbed it into me.

"This will make you breathe a lot easier," he reassured me.

It must have been pure unadulterated ephedrine. Not pseudo, but the real thing. Enough to keep a team of long haul truckies awake till Christmas.

Whammo – my heart launched itself out of my chest and ran around flapping on the floor. No, not really, but it sure felt like it.

Whatever it was, it worked. My breathing stabilised, and when it had returned to normal my heart climbed back into my chest and relaxed on his La-z-Boy lounge.

The doc prodded my knee. It wasn't quite as painful now, but had stiffened up and he told me I still needed the crutches for a bit longer.

"And then you can use a walking stick for a couple of months!"

I shrugged my shoulders. At least I would have one hand free to carry things. Like my briefcase and my double decaf latte, although not at the same time.

"So what's the prognosis for the knee?" I asked.

"My advice is to let it get better by itself," he replied. "It will gradually tighten up and get back to some kind of normality, but you will need an operation to properly fix it in about 20 years or so."

### HOW RIGHT HE WAS

While replacing the old carpet in the car a few weeks ago, I did a stupid thing (What? Not you, Dunk? Ed) and fell out of the car. 'Fell' I hear you ask? Yes, fell. I had pulled the seats out to lay the new carpet in a nice smooth one-piece panel and had neglected to tape the seatbelts out of the way. Climbing out of the car, I didn't notice that one of them had entwined itself around my ankle. Once out of the car, I stood up, then started to

walk away – the seatbelt locked up, and with a resounding Thud I measured my length face downward on the concrete. Severely wrenching, as luck would have it, my good old Vietnam knee, almost 30 years to the day I did it originally.

So now I'm hopping around like the Dr House of the Live Audio biz, and I appear to be the sole form of financial support for a team of physiotherapists, chiropractors, witch doctors and soothsayers.

All of whom tell me I'm finally going to need that operation!

### ENDNOTE:

Luckily all my friends who went off to Vietnam came back safely; others were not so lucky. But at least all of them are finally being recognised for their courage and devotion to duty in an extremely messy war in which we had no business being involved. I am eternally grateful that I didn't have to go, and have nothing but the utmost respect and admiration for those who did.

*\*\*\*4560 – a JBL designed horn-loaded midrange cabinet with a 15" speaker. Good but big.*

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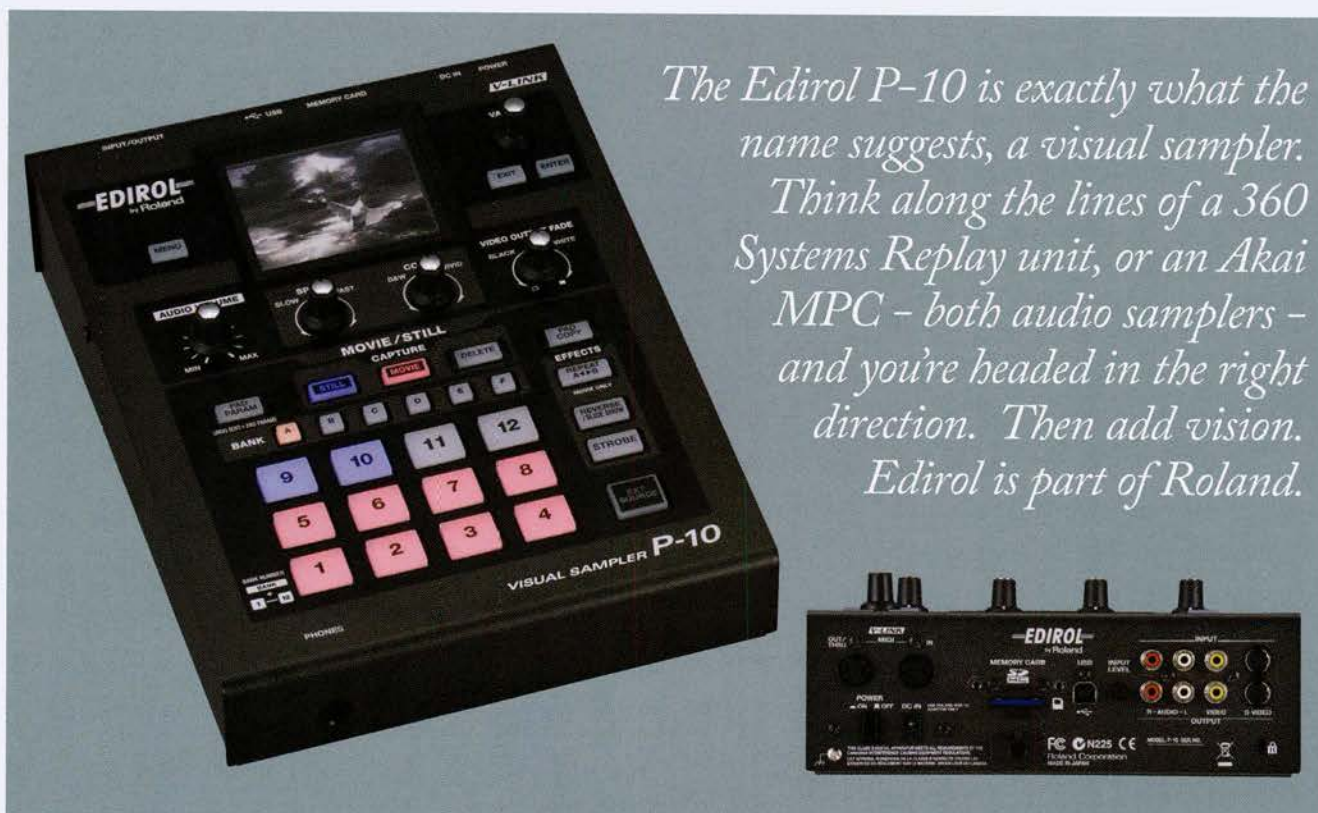
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# EDIROL P-10 VISUAL SAMPLER



*The Edirol P-10 is exactly what the name suggests, a visual sampler. Think along the lines of a 360 Systems Replay unit, or an Akai MPC – both audio samplers – and you're headed in the right direction. Then add vision. Edirol is part of Roland.*

By JIMMY D

The first thing I immediately knew before I even opened the box in which the P-10 arrived was that life would be better if I owned one. Opening the box strengthened this belief, and by the time I switched it on I was pretty well sold. The build quality is typical of Edirol product – built into a nice solid metal casing, with a good feel to the buttons and knobs. It's quite lightweight so it would be easy to carry around to shows, and you get the feeling that it would work when it got there. The only criticism I have on build is the external switch mode power supply, but it since it seems everything has one of these nowadays it's hardly valid. Plus if the power supply ever does crap itself it's an easy fix. To their credit Edirol supply the unit with a Roland branded power supply, rather than a cheap import as seems to be the trend.

## IMAGES

The P-10 will store clips and images internally on an SD card, and you can assign different media to different pads on the control surface. There are 12 large, friendly trigger pads and these are addressable in 72 banks (6 banks A-F, each with 12 sub-banks). The bank system took me a little while to figure out, but even if you didn't know anything about it you could still figure out how to get at least 6 banks running pretty quickly.

The main pads illuminate either pink or blue, according to what type of file they trigger. When a pad is active, it flashes. Simple. The active bank keys light up yellow depending on which one you're using. The video or image will roll until you hit a different pad, or press the MENU or EXIT buttons. There's an LCD screen at the top of the unit so you can see what you're doing without needing an external monitor. A nice point is that the viewing angle on this is wide, to the

point that if you can physically see the screen, you can see images too.

Like I said, the unit will playback either video or still images, and it gives you a couple of different ways of treating each of these. Once a video clip is rolling, you can trigger a strobe effect, loop a section of the clip, or play the clip in reverse. Great for figuring out what recipe Ozzy Osbourne is subliminally telling you about in his latest video clip. There are also rotary pots, which allow you to speed up or slow down the video files (and its audio too), accentuate or de-saturate the colour, or fact to black or white (or other colours configurable in the setup menu). Still images can be assigned to pads singly or as a list of images. They can be played back sequentially either at preset intervals, or you can advance to the next image by hitting the pad again. In slideshow mode, there are 79 different transition effects, some of which are subtle and others more suited to dance party applications. Thankfully the manual gives you a

rundown on what each mode does and you can select from some factory presets, or build your own show. You can also add in WAV file music to go with your slide show. The colour and fade functions are not functional in slide show mode, presumably because the unit is busy thinking about its next transition effect.

## SETTING UP

Setting up how the pads operate is dead simple too. Choose the pad you want to modify, and then hit the PAD PARAM key. This brings up an on-screen menu which you can navigate using the VALUE rotary encoder and ENTER / EXIT buttons. The menu is big enough: that even with my crap eyesight I could read it on the in-built LCD. Very good. If you want to let video pass through the unit from an external source, just hit the pad marked EXT SOURCE. There's an audio volume pot for quick access to output levels, and this is active at all times.

There are a couple of different ways to get video into the unit – you can either capture it from the inputs on the back directly, or import suitably formatted pre-existing media via USB. You could even put the SD card directly into an SD card reader and do it that way, but the USB interface works so easily you probably wouldn't bother.

There are a couple of nice things about the SD storage; being solid state it's fast – access time is buggin' all. You could have different SD cards for different shows, and in fact if you spec the P-10 on a rider then you wouldn't need to bring much more to the gig than your SD card. It's also really robust – the first thing I did when I got the unit up and running was pull the SD card while it was running to see how it would deal. Plugging the card back in it takes only a second for the unit to be ready to roll again. Impressive.

Inputs on the back include composite and s-video, and stereo unbalanced audio. There are also MIDI in and out/thru ports as well as a USB port. Connecting the thing up to my Mac I was pleased to find it showed up immediately as a normal drive, and copying files across was a simple task. Acceptable file format for video is Motion JPEG at 640x480, and for still images 640x480 JPEG will see things working as they should. Audio files need to be 44.1kHz 16 bit WAV files. I would like to see a better grade of output (component or even SDI), but given the market the unit sits in what it's got is actually pretty appropriate. On a 16Gb SD card the manual reckons you can fit about 240 mins of video, so while you probably won't fit multiple events onto one card, you will fit at least one decent sized one. The upside to this is that

Where I'd use one? The first thing that I guess would spring to mind for many people is dance parties. Truly the unit would be at home when used for VJs and the big screen visualisations which are becoming so very popular, but I reckon it has another home in corporate land. I ran vision for corporate events years back and the thing I invariably had grief with was DVD playback cues. Especially for awards nights, you want cues to fire off instantly for vision and DVD usually has latency on it. Just enough latency in fact to bring those pregnant pauses into an event. The P-10 gets around this with the whole "solid state so you don't have to wait" thing. Plus you can load all your holding slides onto it too. It won't switch your RGBHV type computer vision, but I'd probably run the P-10 into a line scaler anyway and switch PC video off that.

It's probably worth mentioning that the P-10 is so easy to use that I didn't need to read the instructions for anything except finding out the specs on file formats and storage capacity. The conclusion? At \$1695 RRP, there's lots to like, not much to dislike, and (assuming you're me) life is indeed better when you have one.

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# STRAND PALETTE VL64

*The Strand Lighting Company has a long history and has done well in the theatre lighting market against ETC. With the new Palette series of consoles Strand aims to consolidate its grip on theatre and to make serious inroads into other markets. So how did it stack up in the CX test bunker? Read on...*

By ANDY MACKENZIE

*An Nguyen gets to grips with the VL 64.*

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- Direct channel output assignment for increased flexibility when using a personal mixing system and recording splits
- Tap tempo for delay settings
- Additional number of shortcuts for faster access and quick setup
- Numerous user interface enhancements for accelerated workflow and ease of use.

This new software is a free release for all registered M-400 V-Mixer owners and can be downloaded at [www.rolandsystemsgroup.net](http://www.rolandsystemsgroup.net)

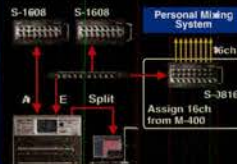
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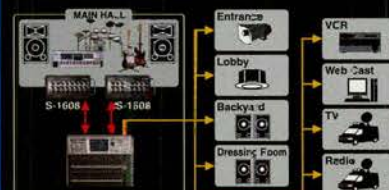


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**Gate / Comp Free Assign to 1-48CH**

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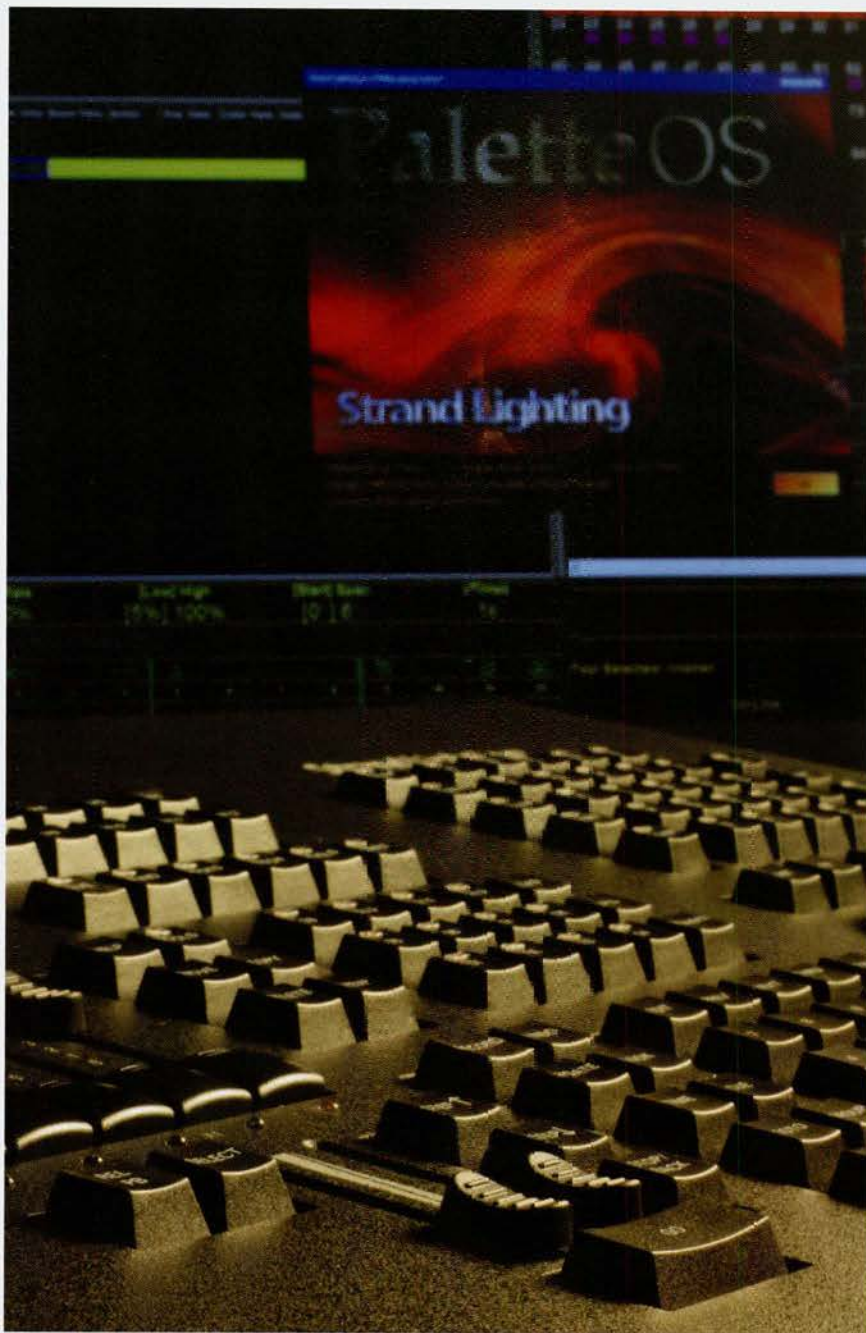


### Addition of Short Cuts

Allows quick access to Effects/GEQ edits or Mute/DCA groups etc. helps faster setup of the console.

### Additional Effect

Tap tempo is added as delay parameter setup for more intuitive operation and ease of use.



## THE HISTORY

There's probably not a lighting operator over the age of thirty anywhere in the world who hasn't done at least one show with a Strand console. Such was the dominance of Strand Lighting through the majority of the twentieth century. Towards the end of the century, however, Strand consoles were increasingly rare outside the world of theatre. There are a whole bunch of reasons for this including the rise and rise of computerised lighting and the appearance of a number of other significant players in the console market, but a significant contribution was made by Strand themselves.

As the control capabilities of Strand's consoles increased, so did their incomprehensibility to the uninitiated –

there were lighting operators, and there were Strand operators. I've known people to break into a cold sweat at the sight of a Strand 520. Yes, you could make it do almost everything, but for some of us it was a struggle to make it do anything.

In a not unreasonable attempt to win back some market share, Strand debuted the Palette range in 2006. This was an interesting hybrid of hardware from Strand and software by Horizon. Plenty of people found this much friendlier to use than the previous consoles, but some existing Strand aficionados were rather less impressed for a whole raft of reasons. Mountains of feedback, R&D, software revisions and beta testing later, Strand have released the Palette operating system version 1.0 (the 2006 console was version

3). The latest software is completely compatible with earlier Palette hardware, so Strand aren't abandoning their existing users.

## THE HARDWARE

The hardware concept behind Palette is rather cool. It's basically a computer in a box with a bunch of control interfaces. The one we played with, the VL 64, has a pile of controls on the operating surface including the expected numeric keypad, cue list faders and go buttons, a pile of function, palette and soft keys AND 64 sub faders. All this stuff is mounted on PCBs which connect to the brain of the console via USB. The brain is an uninteresting looking grey box mounted inside. In the box is a PC running a trimmed down version of Windows XP and the Palette software.

The idea is to make the whole thing somewhat scaleable – if you want to control more stuff, just put in a higher powered thinking box. This is the key difference between the Palette and Light Palette – Light Palette's basically just Palette all hopped up on performance enhancing gear. A convenient side effect is that your laptop can become your backup console. Load the Palette software onto the laptop and chuck a suitably sized USB hub in the bag and you're insured against a power spike killing the console.

Interesting point to consider: nobody but the criminally insane would release a professional audio console on the market without a redundant power supply – why don't lighting manufacturers do the same?

Connectivity is good – We had two DMX connectors plus the computer connectors for Ethernet, monitor, keyboard and mouse. No real surprises there. This version of the hardware only supports one monitor, but some will support two. And the absence of any displays on the control surface means you do need the monitor to use the console, unlike some of the competitors which allow you to fumble through a show without one. That said, the software does make excellent use of the monitor, presenting all the information you're likely to need in a clear, simple layout.

The one thing that did get on my nerves about the absence of control surface displays was that I needed to look at the monitor to figure out what the soft keys were doing at any given moment. Given how heavily my programming style relied on these keys, it was vexatious. On the other hand, people who like using point and click type interfaces will probably quite cheerfully use the mouse and the monitor and wonder what I was bitching about.

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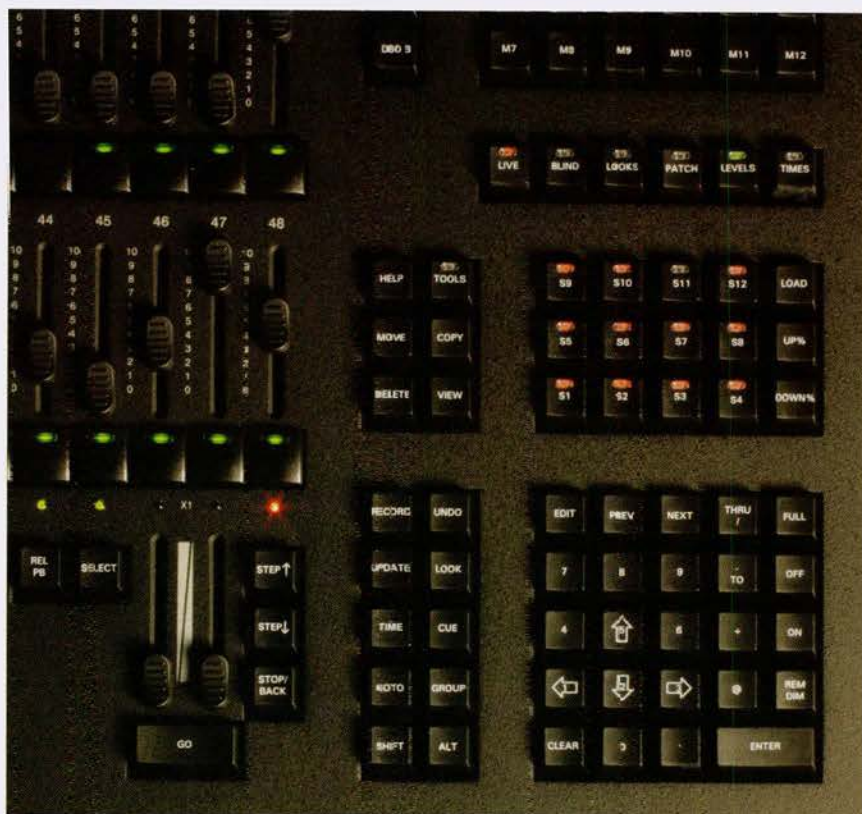
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## MAKING IT GO

The Palette software gives the user a whole range of capabilities in terms of programming for both conventional dimmed fixtures and computerised stuff. To try and discuss all the features in detail here would probably be excessive, so I'll just deal with some of the things that I particularly liked, along with a couple that I liked less...

I like the output compatibility. I've already mentioned the DMX output

connectors, but the Ethernet connector in the back of the box also handles output – in a whole bunch of formats including Pathport, Shownet, Artnet and ACN Ethernet. So you can tie it into pretty much any system you like. The other thing that appeals to me in terms of output is the fact that although the output channel count is limited by the processing hardware (the base models will support 500 channels, the upper end versions can be beefed up beyond 8000),

you're not stuck with 512 channel blocks. You can assign any of your channels of operation to any address on any DMX stream you like – you could spread your 500 channels across more than 60 universes. This means all your channels are usable.

I like the linear movement thing. Essentially this is a rather clever bit of processing that allows you to specify the start and end points of a fixture movement, and the console will calculate the pan and tilt changes necessary to make it go in a straight line from point A to point B. In a lot of applications this would be considerably more appealing than having the lights follow the more traditional arc. Of course, if you like the arc you can have that too.

I also quite like using the trackball to move fixtures. It's easy and I found it more instinctive than using the encoders. The three buttons above the trackball are also put to good use – left button to decrement your selection, right to increment or combine them with the centre button to lock out pan or tilt. Hold the centre button down and get fine movement control. I've never really been a big fan of trackballs, but this is good.

I like the range of ways to deal with colour mixing lights. You can use the encoders to mix CMY or RGB – and you can choose your colour space. Let's say you're combining RGB and CMY fixtures you can simply dial in CMY values and have the console calculate what values to feed the RGB mixers to match. Alternatively, you can use the colour picker – simply click on the point you like the look of and use that. If you're seeking a particular colour, you can punch in the number and the console will feed pre-determined colour values to the fixture. Using the 'text match' feature you can even type in all or part of the name of the colour you seek and the console will look it up for you.

Recording cues, scenes and palettes is straightforward and intuitive, at least at a basic level. The console has a whole lot of advanced cue programming features associated with timing and delays of particular channels within cues that I didn't get into, but given the simplicity of the things I did try I don't expect any of this would be too tricky. Scenes recorded to the submasters are limited in that they are restricted to static looks, but if this creates a problem for you it's possible to record multiple cue lists and select the one you want at any given time.

Because you can use either the control surface or the GUI to control the computer bit, there are multiple ways of

doing everything. What I find attractive about this is that whatever your personal style, chances are that you'll find a method that doesn't seem too odd to you. The other thing is that the step from using the software as an offline editor to using the complete console is reduced in complexity.

Still uncertain? Try it for yourself. You can download the software from Strand's website any time you like – and it's not just a limited function demo, it's a complete package that will control your visualizer for you. Just don't try to use it on a show, as the one thing distinguishing the free software from the paid for kind is that it buzzes the output periodically in an attempt to protect Strand's revenue stream.

### HOW MUCH IS IT?

This seems to be the question everybody always wants answered. You can get in on the ground floor for about eight grand, at which price you'll get a basic, functional set of hardware and the full software package. As you go up through the range prices increase along with hardware capacity. The version we tested, the 500 channel Palette VL 64, comes in a shade over eighteen thousand, and if you wanted the same control

surface with double the channel capacity and a second monitor output you'd be looking at twenty-three and a half.

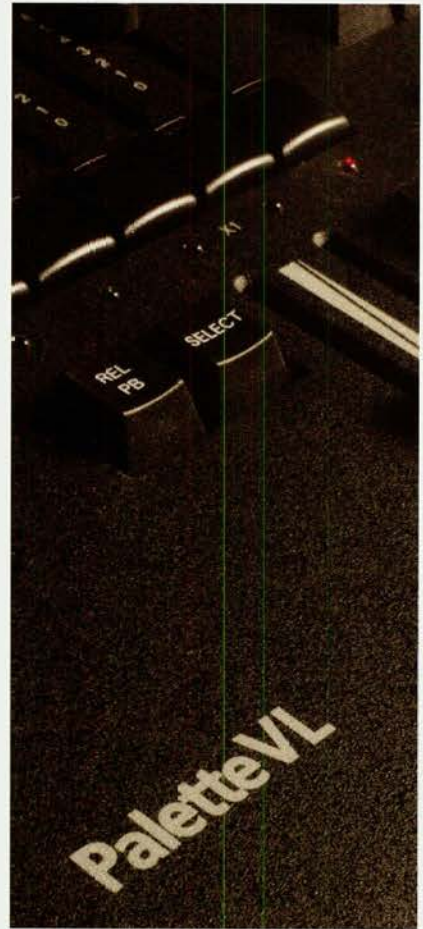
These prices include GST but don't include monitors, and as I mentioned before the monitor is essential. Even allowing for the additional cost of a decent monitor, the price is pretty respectable. To get a price for the particular model you're after, contact the good people at Bytcraft.

### IN CONCLUSION...

I'm inclined to say Strand have done a pretty good job on this one. Anyone with a reasonable idea of how to work any kind of serious lighting console should have no problem getting their head around the operating system. It's functional in Strand's traditional domain of theatre, but also has the potential to perform effectively in a whole range of other contexts. As to whether they've addressed the concerns of 500 series users, I'm not enough of a 500 series operator to tell – but they've done a lot of work with their existing client base to get it right.

Given that you can download the whole thing and try it for nothing, you might as well. What have you got to lose?

CX



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# YAMAHA iM8

## MIXING CONSOLE

*Lots of features,  
lots of connectors*

*Medium large analogue mixing isn't dead – there'll always be a place for a console with knobs and buttons on every channel. Yamaha have launched a successor to the GA console, and it certainly is a lot more feature laden than the one it replaces. Julius Grafton sat behind the operator for a while.....*

**W**e all know the current history: if you're a Gen Y creature then digital mixing consoles are your thing. That's why when I teach someone to mix, I start with a fully featured analogue mixer, so they can visualize all the signal pathways and the possibilities.

Yamaha launched the iM8 recently, and I thought it was a mid priced pro console. The power supply is separate, with a 10 pin professional connector and

a 3 metre cable to connect the console. You can use two of them if you want rock solid redundancy. The look and feel of the console says 20 thousand dollars. But it isn't anything like that. Times have changed, this console costs heaps less than 10 grand.

It comes in 24, 32 and 40 mono input frames. The look is military, instantly recognizable as Yamaha. First impression: they could have hired a gay Italian industrial designer to sex it up. Second impression: at the price it is very sexy indeed. Footnote: not all good designers are Italian.

When faced with a new work surface, I always rudely push down on it to see how it bears my weight. And show it who is boss. Not that I am of great weight myself, I happen to be proudly exactly average in almost every dept. Average height. Average weight. Average intellect. Maybe some other things are unaverage. The Yamaha didn't bend or flex very

much. That is a good thing.

### **KNOBS**

The thing that first attracted me to this console is Yamaha's semi-new one knob compressor (and yellow 'yeah' lamp) on every input channel. This little feature is potentially a very good thing. More on this in a minute.

There's a good four band EQ section, with fixed top and bottom frequencies and variable sweeps for the middle pair. The range and sound of these are quite good, there appears to be a real 15 db of plus or minus.

Ten auxiliary sends is the right number in today's hungry world where everyone needs in ear everything. Interestingly you can switch the first auxiliary pre/post, then the pre/post switches are in pairs, so aux 2 and 3 have a switch, 4 and 5, 6 and 7, and then 9 and 9. Aux 10 has no switch so straight off you assume it is a post fade auxiliary. It is.

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Yamaha let you enable an internal jumper lead to make the auxiliary sends pre EQ, so you could do this if wanting to isolate the auxiliary send from the channel EQ. A time for this is when sending monitors from front of house, where your EQ tweaking may set the monitors a-ringing. When using the pre-EQ option, the channel on-off switch doesn't affect the auxiliary send either.

## BUTTONS

iM8 is well endowed with buttons. Phase reverse, pad, phantom power and 80Hz hi-pass filter buttons are all at the top. The big channel ON button has a light which should be compulsory for all mixing desks.

Best of all are the simple to see, simple to figure out assignment buttons alongside the 100mm fader. Did I mention that the fader feels good? It does. These buttons assign where the signal is to go, Stereo, Mono, or groups – there are four pairs of subgroups.

Under these are four mute group switches, then at the bottom the PFL button.

Aside from the 24, 32 or 48 mono input channels are there four stereo

channels, with less EQ and no compressor. Otherwise they are the same as a mono channel.

## SOUND

This is subjective, but we have no issues with the preamps or output drivers. All is as it should be, and noise was acceptable too. We don't measure this stuff, we just crank knobs.

Most new design desks are fabulous compared to last generation. iM8 is no exception.

Like I said before, EQ is all good – my mental reference point is Soundcraft, before now I always thought the PM4000 had 'sharp' EQ – the iM8 has a neutral EQ characteristic which could be closer to what I'm working with a lot these days, namely the (digital) M7CL.

When you bog up an input and overload it, the regeneration (degradation) is progressive and predictable. No surprises.

## BACKSIDE

The console is endowed with a full suite of XLR, 6.5mm jack, and even RCA connectors. Four stereo auxiliary pairs are there, these go to the front panel and can

be assigned down to a group fader or to the main mix. Handy.

There's 4 Matrix Outputs, and 8 group outputs, all on jacks. The 8 auxiliary outputs are on XLR's. Speaking of which, they also have short throw faders on the front panel, which is a good thing.

Most exciting of all is the USB connector. Allen and Heath also have one on their ZED mixers. It lets you come in and go out to your PC or Mac, a Cubase AI4 software CD comes with the console.

## IMPROVEMENTS

A good feature is the 3.5mm input jack for an i-Pod. A bad feature is that it is located under the front lip of the console, next to the 6.5mm headphone jack. I assumed wrongly that it was in fact a 3.5mm headphone output, so desired due to the proliferation of 3.5mm mini jacks on headphones.

Speaking of headphones – iM8 has a superior concept in that you can switch PFL or AFL monitoring of the outputs. Without selecting one, you get nothing through the cans, which flummoxed one of my colleagues. But I like this a lot: it always freaks me out when I deselect a channel pre fade listen button and get an earful of the main left/right mix. Yamaha have fixed this with the iM8.

However, the headphone driver amplifier is a wuss. It goes loud, but it breaks up when it goes as loud as I need it. Remember I'm half deaf. I tried a few different cans, including my pro cans (Audio Technica ATH-M50) and the headphones are innocent.

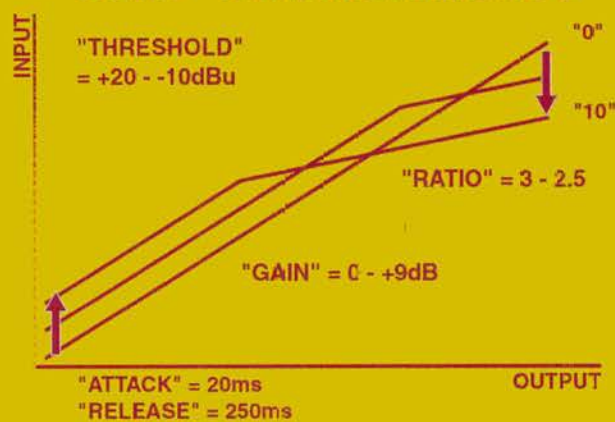
The Comp feature made me sad. We like the console but we don't like the one knob comp feature because it won't squash an out of control input. Multiple parameters are adjusted simultaneously by the 'one knob' - threshold is reduced (from +20dBu with the compressor off to -10dBu with the compressor at '10'), ratio is slightly reduced (from 3:1 with the compressor off to 2.5:1 when the compressor is at '10') and gain is also increased ('made up' to a maximum of +9dB). Attack and release are fixed - attack at 20ms and release at 250ms.

We feel that the ratio needs to reach 4:1 at higher input threshold to 'hold' input gain. As it stands, this feature gives a soft compression that doesn't address my needs.

## SUMMARY

Unbelievable value for money. The 24 channel unit costs \$6,999, 32 channels \$7,999 and the 48 channel \$8,999. This is retail – who pays retail? Like I said at the onset, I would expect to pay around 20 grand for a mixer like this just a few

## "COMP" CHARACTERISTICS



years ago.

How times have changed.

**FOOTNOTE:** Yamaha re. the Compressor (and the headphone amp)

The one-knob-compressor is intended more for smoothing input sources and improving the average (RMS) signal level - not to limit ("squash") wildly dynamic sources. The effect is more subtle than the one I think you are desirous of but in my opinion very useful for bringing sources forward in a mix or "beautifying" dull or lifeless instruments that are struggling to cut through. I have found

these compressors very handy, for example in bringing dull and thin sounding acoustic guitars (old strings!) back to life or in helping to solidify a vocal at the centre of a mix - among other things.

I agree that it would also be useful to have a compressor with a higher ratio - 6:1 for example - and a very short attack time (5 - 10ms), in order to really rein in sources that have wide ranging and constantly variable dynamics, however this kind of tool is (in my opinion at least) less well suited to general purpose use - which is what the one knob

compression system is all about.

I haven't had the chance to really crank the headphone amp yet - I am interested to try that out for myself! Although when I have used it I have used headphones with quite high impedance in comparison to the your ATH-M50's (BeyerDynamic DT 770 Pro, so perhaps not asking as much of it).

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# AVIOM A-NET PRO64 DIGITAL SNAKE

*When Aviom released A-16 some years ago, most people were more interested in the personal monitoring system than the audio transport possibilities. A-Net Pro64, with a higher channel count and extensive I/O options, is all about transport. We got hold of enough bits to build a snake and put it through its paces.*

By ANDY MACKENZIE

Digital snakes and networks seem to be the way of the future. As copper prices continue to rise, the option of running cat5 or fibre instead is increasingly attractive. Add in the noise immunity and the ease of splitting and distribution that come with digital transport and it becomes a complete no-brainer. Aviom were in on the digital audio networking thing way back when, and they adopted an approach that differentiated them from the others in the game.

When the others said "cat5 – what a

good idea" and started developing systems to work audio into Ethernet packets, Aviom said the same thing and started developing their own transport protocol that just happened to use the same kind of cable. This was just the beginning of Aviom's stand-alone hardware approach to audio networking.

## HARDWARE

To build our digital snake, we needed quite a few different boxes. Here's a brief overview of what they are and what they do...

The 6416m is the 16 channel microphone input module, combining mic pres and A-D converters along with the appropriate networking electronics. Without this, our digital snake would be a bit of a disaster – no inputs, no point. Each of the mic pres is well appointed with 48V phantom, 24dB pad, phase reverse and 85Hz HPF and offers a gain range from 0-55dB. There's also a dedicated 6 segment LED ramp per channel and a few other buttons you can use to make it do stuff. The whole system supports all the typical sample rates from 44.1 up to 192kHz at 24 bit, albeit with a reduced channel count at sample rates beyond 96k.

The MCS (mic control surface) allows the user to remotely control the mic pres in the 6416m, which is essential for the thing to be of any real use. The idea of mic pres which you set before spending

the duration of the show sitting 70m away is not one that I care to endorse. As well as giving you control, it also gives you accurate monitoring of the signal levels at the inputs. The MCS travels with the RCI (remote control interface), without which you can't connect it up. It seems a little silly to have two boxes to do one job, but my understanding is that putting them in the one box would make the MCS inconveniently large – as it stands it's basically just a control surface for the RCI which connects it into the Aviom network.

The 6416o output module gives 16 outputs on XLR connectors. One of the particularly appealing things about this box is that it gives you a choice between mic and line level analogue outputs. This gives you a bit of extra flexibility in matters of audio system configuration. We had two of these to do what we wanted.

Last but not least in our line-up of attractively finished blue boxes is the 6416i – the line level input box. Obviously this has not all the features of the mic input box, but it's nice that it gives you a gain switch to allow for the fact that there's line level, and then there's line level...

So our complete system went like this: a 6416m and a 6416o at the stage connected to another 6416o, a 6416i and an MCS/RCI combo at FOH. This gave us a 16x16 snake. If we wanted more





Mic input and remote control faces.



16 channel output box. The output level is selectable as either mic or line.



The back of the mic input box. Note the facility for a redundant PSU and the loop outs.

channels or more returns, we'd just need more boxes of the appropriate types, along with a few more cat5 cables. If we wanted to split the signals, say for a monitor console, we could either use the DB25 connectors on the 6416m as an analogue loop through or we could just give the foldback operator another 6416o on the same network.

### AVIOM INTO ACTION

Setting it up was no problem. As has been mentioned previously in these pages, we like to test things under the kind of conditions they'll be used in out there. This includes a steadfast refusal to look at the manual unless the thing is actually on fire. So casting the manuals aside, we plugged all the bits into the electricity and then used a pile of cat5 leads to connect everything to everything else. Configuring the system was an absolute doddle given the reassuring presence of an auto function to assign the cat5 connections. There are other ways to do this that give you extra functionality, but we were working well within the system's capacity.

Next trick is to assign the A-Net slot. This is the channel group you're going to use on the network. We used slot 1

(channels 1-16) for the mic signals and slot 17 (channels 17-32) for the returns. Easily done. There's also a control for assigning a VDC slot. VDC (virtual data cables) is a clever idea – converting MIDI, RS232 or GPIO control signals to be transported over the network. We didn't use this so I can't vouch for its efficacy, but it's definitely a rather neat idea.

So far, so good. As far as we could tell, we were ready to go.

So we fired some input into the 6416m, and then sat in confusion for a little while. We had nothing. No signal, no remote control, nothing. The input box was metering on all channels, but we couldn't seem to get anything out. We checked all the obvious looking stuff, like the slot allocations, mute buttons and so on, but got nowhere. We'd become desperate enough to go looking for the manual when a colleague popped up and pointed out that the unlabelled buttons on the mic input box are the ones that connect the channels to the network. And how did he know this? It seems that a few days earlier he'd been so befuddled by the same thing that he'd had to look at the manual.

That, however, was the one significant glitch we encountered in getting the system working. From here on in, all

was easy. Controlling the mic pres using the MCS was no problem, and there's a couple of sensible failsafes in there – press the phase flip or HPF switch and it immediately engages, press one of the ones with potentially nasty consequences (pad or phantom) and the box waits for you to confirm via the enter key. The sound quality is good, both the mic pres and the converters are very clean and uncoloured.

There are also a few other features of the system that I rather like. All the boxes have connectors for a 24V DC backup power supply, and they're all convection cooled so no noisy fans disturb the ambience at the gig. I also didn't need a laptop loaded with special software to make it go, although there is talk of a sophisticated computer control system coming on board in the near future.

### SHOW ME THE MONEY

The question of price on an Aviom system is similar to the famous question relating to string length. As a modular system, the total cost can vary wildly depending on the application and the bits you choose to use. The prices on the components we used are as follows:

- 6416m mic input box.....\$13,395
- MCS mic control surface.....\$1,699
- 6416i input module.....\$6,425
- 6416o output module.....\$6,450

As well as the toys we played with, Aviom still produce the original A-Net 16 along with the personal monitor system. This can be interfaced with Pro64 using another hardware device. The network can be configured in any combination of star, ring or daisy chain configurations. There are digital I/O boxes and a Yamaha console expansion card available in the Pro64 series which can increase the ease of interfacing with a broad range of digital consoles.

### THE LAST WORD

This is an extremely effective and (mostly) easy to use system. Setup and configuration is straightforward and logical, as is the majority of operation. The one real problem I had could have been avoided easily enough by reading the manual ahead of time, but there you go. You all know about it now, so you can ignore the manual. The fact that Aviom run their own protocol makes their systems incompatible with standard Ethernet hardware like switches and hubs, meaning that you need to buy the Aviom proprietary versions – but given the erratic reliability of some Ethernet hardware, this may not be a bad thing. **CX**



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# iLED HIGH OUTPUT LINE



*LEDs are the biggest thing to happen in professional lighting since the first Vari\*lite sleepily raised its head. And why not – they're economical in all kinds of ways and you can do all kinds of clever stuff with them. We take a look at a couple of new high output options from iLED.*

By ANDY MACKENZIE

The iLED name is ULA's house brand of LED based products. The line consists of a diverse group of products from star drapes and illuminated flooring through to a moving head LED washlight. The units we're looking at here are the LED Bank H-O and the Pixel LED H-O – in both cases the H-O stands for 'high output', since both these fixtures are also available in lower powered versions.

## LED BANK H-O

Let's start with a quick look at the LED Bank. This is a fixture with a lot in common with many others on the market, specifically in terms of the physical arrangement of the LED panels. Each of the three round panels consists of 36 1 watt LEDs – 12 each of red, green and blue. The beam angle and arrangement of the individual LEDs gives a reasonable uniformity of colour across the light field when they're used for colour mixing – something which is harder to achieve with LEDs than other

lamps due to the interaction of multiple light sources.

The LED Bank carries an IP65 rating, meaning that it's completely sealed against dust and 'water jets' (whatever that means). In other words, it's a fixture that could quite easily be set up outside and expected to perform reliably for an indefinite period. Combined with the long service life of LEDs, this makes it a good candidate for tricky outdoor or partially exposed installations where access can be a problem.

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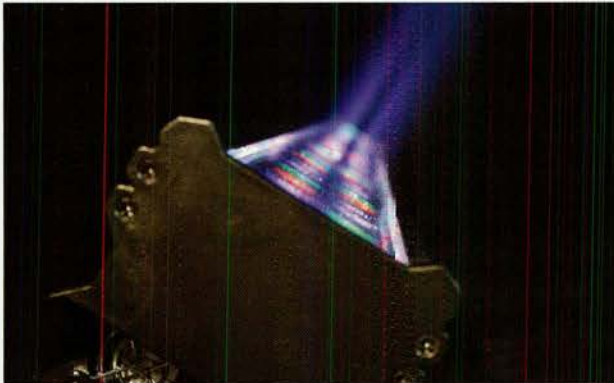
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Pixel LED back panel.



Pixel LED beams are tightly controlled.

in order to get it, the device needs to be sealed up as tight as a duck's bum – so you wind up using adapter leads to connect power and data to the watertight connectors it comes with. ULA were kind enough to supply the required adapters with the test kit. Each unit has four leads hanging out the back for power and data inputs and loop through.

Rigging is simple enough with inbuilt hardware that could be fitted with hook clamps or similar, bolted directly to a surface for a permanent installation or used on its own as a stand for floor mounting. Each unit also has some captive hardware designed to allow a number of them to be joined together to form a larger panel.

### PIXEL LED H-O

The Pixel LED is a rather different proposition. This is a long, skinny device with two rows of forty LEDs running parallel along its length. The LEDs are arranged in twenty groups of four, each consisting of one 2W (red) and three 3W (green, blue and white) LEDs. The beam angle of each individual LED is quite narrow, so colour mixing is ineffective within about half a metre of the front of the fixture, but it creates a rainbow kind of effect close to the fixture which looks extremely cool.

Like the LED Bank, Pixel LED offers both power and data input and loop through connectors. Unlike the LED Bank Pixel LED has no IP65 rating to protect so it can use normal connectors – both three and five pin XLRs for data and Neutrik Powercons for the electricity.

The Pixel LED is an easy device to rig – it's got a stonking

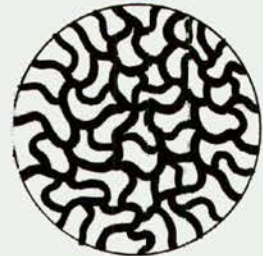
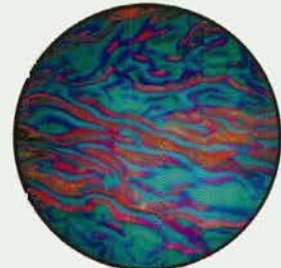
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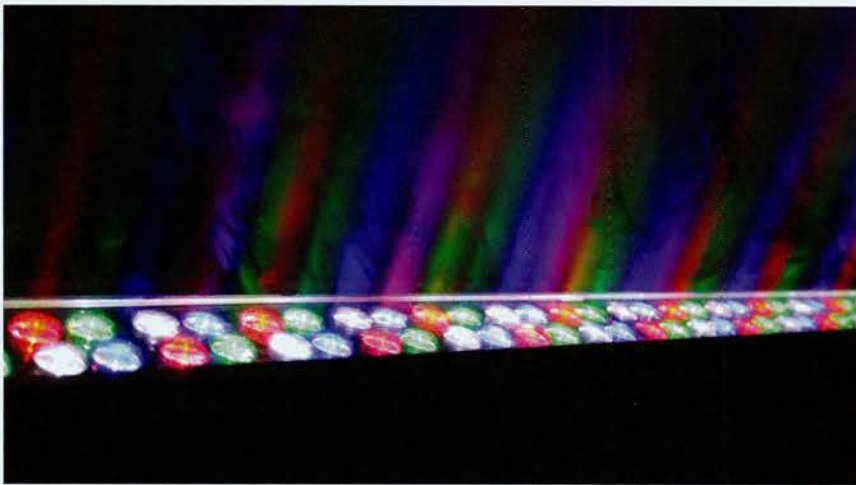
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Pixel LED up close. The pixels can be individually controlled.



The tight beam angle of Pixel LED gives an interesting look.

big bracket that allows it to stand on its own or be attached by various means to whatever you might want to attach it to. There is also additional hardware available to allow a number of these to be

joined into a larger panel as required.

### IN USE

We had a tinker with both fixtures down in the test bunker, and were impressed



LEDcnk back panel.

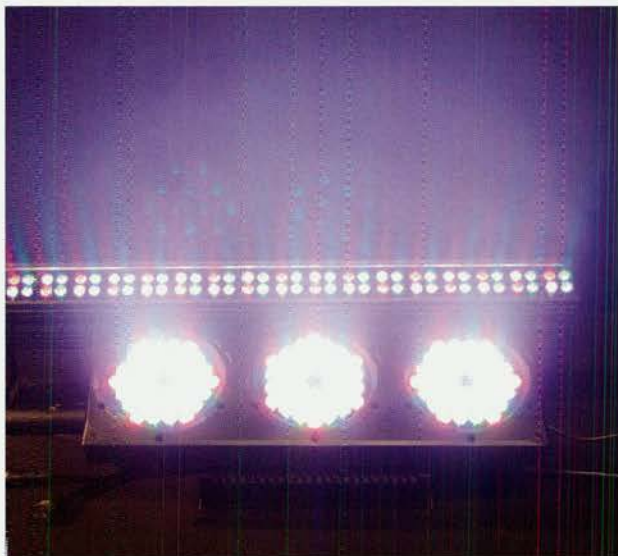
with their performance. Each has a range of control options including stand-alone and automatic modes but let's face it, the vast majority of users are going to hook them up to DMX, so that's what we did. The menu buttons and display on the back panels of the fixtures are clearly labelled and easy to use, so there's no confusion in terms of getting the fixture into the control mode you want, nor in addressing it. Like pretty much every other lighting device on the market these days, these guys come with a range of fixture personalities.

Each of the fixtures includes facilities for RGB colour mixing, strobing and dimming, and the Pixel LED can be extended in its range of DMX control up to full pixel mapping – eighty channels of control for the eighty individual LEDs, allowing full control over RGBW mixing

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for every pixel. I had a little bit of a play with this, but with only one fixture in the array there was only so much I could do (twenty pixels in a straight line gives fairly limited pixel art options) and I went back into the more basic mode.

For the kind of thing I can see myself regularly using these fixtures for, the most basic colour mixing plus dimming personalities would do the job admirably. For those who need them strobes and macro effects are great, but I suspect that I would use these (and most other LED fixtures) largely for colour mixing effects.

The LED Bank does nice strong colour washes, and if you had a stack of them you could get some really great colour density happening. The three round panels also create a great look from front on and again I can see them being really good in blocks of several fixtures. They also have enough brightness and rapid enough rise time to let you get away with using them as audience blinders if you want.

I'd be inclined to use the Pixel LED somewhat differently. The slender profile of the fixture makes it ideal for washing walls or cycs with a minimum footprint, and could also be used effectively as part of a stage set. I also think the quite narrow beam angle makes these an ideal candidate for forming curtains of light – combine a goodly amount of atmospheric haze with a line of these and the effects could be spectacular. And then of course there's the possibilities inherent in pixel mapping.

## PRICING

The iLED products stack up OK on the pricing front too. The LED Bank H-O lists at \$2791 and the Pixel LED H-O at \$4568, both prices being inclusive of GST. Remember as well that these are the high output versions – if you only need the lower intensity models you could save yourself a few dollars (or have enough dollars to buy extra fixtures). You can get information and pricing for all the iLED range direct from ULA or from any of their dealers.

## FINAL THOUGHTS

One of the great things about modern LED fixtures is that there is such a diversity of products out there, each with its own particular strengths. With the iLED line ULA have pulled together a whole bunch of fixtures and devices, each of which sits in its own particular niche. The range of things you can do with LED fixtures opens up some great possibilities for the designers willing to experiment a bit. CX

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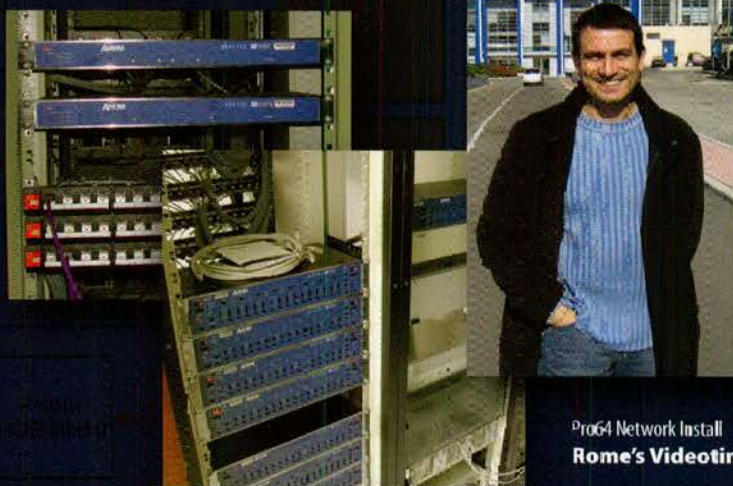
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