

**Theatres**  
Sydney vs Melbourne

**Box Hill**  
Technology & collaborative education

**New Technology**  
Audio IP AES67-2013

**Show Technology**  
Lighting launch



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- Neumann KH310A Studio Monitors
- High End Systems Shapeshifter C1 & W1
- Canon XEED WUX400ST • Clear-Com Helixnet • Earthworks IM Series

**CX NEWS:**

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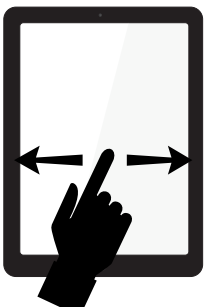
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**CX98 2014. ISSUE # 218 DIGITAL EDITION**

EDITORIAL BY JULIUS GRAFTON

**REACHING PEOPLE**

Had a frustrating lapse last month because I didn't return two different phone calls. Which meant I missed the Austage 20th party at the Seymour Centre. I do like a party, and I do like Austage. It led me to reflect on how some people respond best to emails, others calls. At CX, it's a mix of both – some of us reach for the phone, others bang out a note and hit send.

The third and fourth strand are Facebook Messenger, on which come some messages that are important, and Twitter which we at CX don't really use. Yet. When was the last time you got an actual letter? With a stamp on it? Or a fax?

**THE PROBLEM IS:**

We are headed to our 25th birthday party next winter, and planning a party is never a chore at CX. Leading in, I'm thinking of the enormous changes in the quarter of a century since we started. The economy had doubled in that time, but the average cost of a house has more than quadrupled I paid \$180k when we started, for a house that would now cost me \$900k plus.

I'm thinking all the national wealth gains are tied up in real estate, and the developers now seem to be turning up in various political scandals because of influence peddling or political donations for favours.

What does this have to do with CX? The thought process started with a report from the West End about a pending pay strike, where theatre workers are demanding at LEAST the national average pay, plus a London Loading.

Our Live Performance Award is a joke, a skilled tech on \$24 an hour casual, yet we are almost the highest paid nation in the world. Something is not right.

**APPLE GONE MAD**

News is that Apple may have paid U2 one hundred million to release their album for free to every iTunes account. My stepson Harry (13) asked me what U2 were, he was worried his account may have been hacked, and that he would have to pay for the songs. I can't see any upside for Apple, and applaud LIVE NATION for having the chutzpa to pull it off.

While the band were dishing up mea culpa in the media, a hundred big ones is worth some heat.

How about the reported 3 billion that Apple paid Dr. Dre for his Beats business? That would have focussed the management of every other headphone company, as the Beats cans are crappy. While you could argue (if you were Apple) that Dr. Dre had some smashing new ideas for iTunes, it seems to me the company has lost the plot.

**ROCK THE BOAT**

I embarked on this ill fated cruise at presstime and could not wait to get off at the first port of call with an airport. There's a tragic series of Blogs at csmagblog.com and a story in next month's Roadskills. But the side issue was the removal of drink packages on the Rhapsody of the Seas, leaving the 2,040 punters at the mercy of the cruise line.

We were gouged good and proper, with a beer coming out over \$10 when gratuity's were added on and the line took it's exchange rate balloon. I felt sorry for the mainly retired bogans who clearly expected to pay the fixed daily rate, and were stung hard.

- Julius

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# NEWS

## CX INDUSTRY NEWS



### Band Banned

Production Trashed in Wagga

Since CX exposed 'artist' Kerser, production crews have avoided trouble with his 'crew' by not working with them. Now add Sticky Fingers to the short list of obnoxious 'performers'. 'STIFI is a melting pot of reggae, psych, pop and bourbon', their web site says.

Prior to a gig at The Union Club Hotel in Wagga in October, bass player Paddy Fingers urinated on an upstairs balcony wall, resulting in a leak that dribbled onto tables below - where people were eating.

'They arrived very late AFTER doors were scheduled, and did a 45 minute sound-check that upset the food service. Doors were an hour and 15 late as a result', an insider told CX.

When confronted over his offense, Paddy Fingers abused security and crew, leading the venue owner to initially cancel the gig. Faced with a possible riot from the crowd, the show went on, and at the end the band trashed items of production and borrowed backline - which was caught on video.

On leaving the stage, security and venue management ejected the band, asking the support band to pack up the main bands backline. The dressing room had evidence of more urination, including inside several bottles left in the drink rider.

The band then proceeded to another venue, where this picture of Paddy Fingers was taken outside afterwards.

'The pub survived very successfully for years using local DJs and bands. They don't need to put on touring acts and, like most music pubs, do it because they want to provide a better service. They've had a few issues with touring bands and I wouldn't be surprised if, like many ex-music pubs, they decide to give it away and go back to the less stressful and equally lucrative way they used to do it", commented CX reader and Wagga local, Dëri Hadler.

Damage to production equipment was invoiced to the promoter. Comments on CX Facebook indicate the band has previous form. Avoid them, or charge a lot extra.



PADDY FINGERS  
FROM STICKY FINGERS



### Optus

Trials 700MHz

Optus has been granted a licence by the ACMA to test its 4G 700 MHz network technology in multiple locations around Australia until the end of 2014. Network testing will typically occur during business hours and will be limited to approximately two hours per location. Once testing is completed at a given location, the relevant site will be switched off and testing will move to the next location.

The Optus 700 MHz trial web site <http://www.optus.com.au/shop/notices/network/700-tech-trial> carries the names of 270 regional, rural and remote area towns in which Optus is running tests. The only capital city areas where testing will be conducted are Darwin, Hobart and the St Marys area in western Sydney.

Wireless audio devices that operate in the 703-713 MHz or 758-768 MHz frequency range may be impacted. Reports of interference to wireless audio systems may be lodged with Optus by email at [trial@optus.com.au](mailto:trial@optus.com.au) or calling **1300 720 086**.



**α** Clay Paky founder wins Gottelier Award

The beneficiary of this year's Gottelier Award, given during the 2014 PLASA Awards ceremony, was founder and managing director of Clay Paky, Pasquale 'Paky' Quadri. The Award, which recognises members of the industry who have made significant and sustained contributions to the advancement of event, entertainment or installation technology, was given posthumously as very sadly Paky passed away on September 6th.

Following his death and as a testament to the huge respect 'Paky' had garnered over the years, the remaining Gottelier Award nominees, Richard Belliveau, David Cunningham and Dr Christian Heil, unanimously agreed to withdraw from the running.

Coming from humble origins the young entrepreneur Pasquale Quadri grew up in an extremely creative environment. The son of a magician he was raised in a small provincial Italian town. 'Paky' established Clay Paky in 1976 and in just under 40 years his contribution to cutting-edge and superior quality lighting has been immense.

Clay Paky's Chief Commercial Officer, Pio Nahum, graciously accepted the award on behalf of his very close friend and colleague and said this: "Receiving the Gottelier award on behalf of Paky fills me with pride and gratitude. Paky was a charismatic leader we all knew we could count on. Under his guidance we achieved significant goals and, above all, we gained the respect and trust of many customers and partners throughout the world. The expressions of admiration and sympathy that we have received following Paky's passing have been considerable and I would like to thank everyone who has shared their condolences and thoughts."

**α** Austage Turns 20

Austage Events just hosted their 20th Anniversary.

Based in Sydney with satellites in Perth and Melbourne, the family firm had their party in the Seymour Centre. **CX sends Congratulations!**



**α** Ken Dwyer leaves APG, contract not extended



Ken Dwyer has left Audio Products Group, just three months after Hills acquired his business for a reported

\$15 million. Ken Dwyer said he was only on a three month consultancy agreement.

*"I had an initial 3 month "consultancy agreement" with Hills that was not renewed when it expired. (It's) Quite amicable with Hills. They have their senior management team and of course Richard Neale at APG is very switched on, understands what needs to be done and can easily take the APG helm now."*

*"I'll especially miss my friends and colleagues at APG (a fantastic team as you know), supportive suppliers, great brands and of course our customer relationships – but otherwise it's time for me to move on."*

**α** Mark Filby owes Doc Channel 9 allege rip-off



The family of Doc Neeson claim Mark Filby, a 'tour promoter' owes the late singer as much as \$100,000. The network

made the claims on A Current Affair, and hoodwinked Filby with the offer of a contract.

Somewhat bizarrely, Filby presented himself to Channel Nine, believing a deal was in the wind. Instead he was confronted on camera by a process server, a reporter, along with Doc's son. The resulting footage of an overweight and evasive Filby was riveting.

He was served with a writ, but it remains to be seen whether a judgement will ensue. Ordinarily media will not report debt claims until a court has determined, but since Channel 9 has, CX follows.

Let us know if you have any information on Mr. Filby.



## Novatech leap into top five

Dual arena K2 systems arrive

Adelaide's Novatech Creative Event Technology have leapt into the top five concert audio suppliers with a large purchase of L-Acoustics K2 line source, taking their inventory to over 500 L-Acoustics cabinets.

Already having 72 smaller L-Acoustics Kudo, their inventory now boasts 48 K2 full range elements, 16 K1-SB flyable subs and 36 SB28 subs. The firm now has 48 LA-RAK (LA8) amplifier racks, along with 48 115XT HiQ foldback wedges.

With associated flying systems, the K2 can be deployed in various configurations. Novatech can now field two typical Sydney Entertainment Centre systems of 12 elements per side, with subs, using Kudo side arrays. Or they can overdo any venue in the land with all their K2.

The K2 is the direct replacement for the V-Dosc, which is still one of the most listed systems on concert riders across the world. Where the larger K1 system is pitched at the largest shows, K2 delivers almost the same performance with a lot less weight – a very light 56kg per element, against 106kg for the K1.

While K1 is loaded with 2 x 15" drivers for lows, the K2 comes with 12". K1 and K2 both have four midrange drivers, K2 has two high frequency drivers while K1 has three.

A significant point of difference between the largest (K1) system and the K2 is the variable dispersion feature of the K2. This allows control of the horizontal dispersion, from 70 to 110 degrees, using adjustable directivity fins and electronic presets. This means the horizontal can be controlled down to 300Hz, using a combination of fins and amplifier deployment.

Both K1 and K2 share rigging commonality, and are the same element width for combination use. The K1-SB subs are also the same width as the K2. On top of all this friendliness, the LA-RAK amp racks can also be flown, two of these nest within associated rigging and don't exceed the width of one flown array.

It is the immediate electronic repatch of the amp racks that makes the new L-Acoustics family so formidable. The same rack will power virtually all combinations of L-Acoustic speakers – without repatching. Internal DSP switches preset, so all the system engineer does is choose and press.

Meanwhile Novatech, with 30 permanent staff and over 20 casuals, have added new VL 4000's to their lighting dept. The firm are a 'one stop' shop, offering staging, lighting, vision, audio, theming and visual production. Much of their work is outside Adelaide.



## Depression takes AV guy - No one knew he was blue

One of the saddest Facebook posts yet popped up on the 18th of October. Then Daniel Castelli was dead.

"If you can't be happy on the inside, make the people around you as happy as you have wanted to be..." he wrote. A few people liked it, no one twigged he was saying goodbye.

Daniel was a much-loved member of the InSight Systems team and known to many through the Audio Visual industry.

Daniel Baldwin at InSight said "Daniel was a good man and though he appeared as a fun loving guy, we now know that he

suffered with depression and had since the age of 14. This was something that he held to himself and chose not to share with anyone, even those closest to him. It stayed with him until the end."

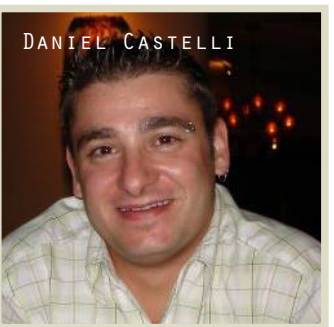
Daniel leaves behind his wife Marcia and two young children, Emilio and Izzy.

InSight have set up a trust account for Daniel's family through their accountants. They ask you to consider contributing to this if you felt it an appropriate way to offer your support.

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### ETC Source Four LED Series 2 Daylight HD & Tungsten HD

ETC has introduced two new Source Four LED Series 2 arrays, Daylight HD for variable cool (4000 to 6500K) light and Tungsten HD for adjustable warm (2700 to 4500K) light. They operate flicker-free, even at high speeds, so they won't be noticeable while filming. And the luminaires work quietly and dim smoothly, so they won't disrupt the action on the set. Preset colour temperature settings can be transferred from fixture to fixture, with individual control of each LED colour in the mix. Setup can be done in just minutes, using DMX from a lighting console or DMX-free from the user interface. The Daylight HD and Tungsten HD arrays are the same size and have the same beam angles and optics as conventional Source Four fixtures, making them compatible with existing lens barrels and CYC adapters.

### Barco RLM-W14



Barco have announced the launch of the RLM-W14 – a three-chip DLP projector offering Active Stereo 3D, WUXGA (1,920 x 1,200) resolution, and a brightness level of 14,500 centre lumens. This is the first three-chip DLP Barco projector that's equipped with HDBaseT technology to provide video over IP through a single Cat 5 cable. The RLM-W14 is designed for fixed installation in small- to medium-sized venues; but its rugged chassis, extended warping and blending functionalities, and optional rental frame make it equally suited for the rental and staging market as well. The new projector will be commercially available from October 2014 onwards.

Australian Distributor: Barco Systems  
[www.barco.com](http://www.barco.com) or (03) 9646 5833



## Clay Paky

### Mythos

The MYTHOS is a hybrid spot and beam fixture. As a spotlight, it features a zoom that ranges from a minimum of 4° up to a maximum of 50°. Effects include a wheel with 18+1 fixed patterns, a second wheel with 6 rotating dichroic gobos and two indexed rotating prisms. For use as a beam, its optical unit allows you to switch to a minimum fixed beam angle of just 0.5°. In this operating mode, the MYTHOS has two-and-a-half times the brightness of a Sharpy. The MYTHOS features a gradual-insertion CMY system, which is also equipped with fixed colours that may be overlapped and used to generate a two-coloured light beam.

### Stormy

Stormy is a new LED strobe. The light source is a strip of powerful white LEDs, which emulate a bright Xenon linear lamp. The flash effect is enhanced with a parabolic reflector, like a classic strobe, and does not project the light directly forwards like other LED strobes. The frequency, duration and intensity of the pulse are digitally controlled, and these parameters are even independently adjustable, which is impossible with a xenon lamp strobe. The pulse duration may be extended as required. Thanks to the use of LEDs, the light intensity remains absolutely constant, without flickering effect. The Stormy also comes with RGBW LEDs, which are able to flash in any colour.



### Supersharpy

The Supersharpy is an ACL beam type moving head featuring a 470 watt, 7,850 K lamp. Its light beam is three times brighter than the original Sharpy, with a far bigger difference than you would expect by simply comparing the rated wattage of the two lamps (470 vs 190). Thanks to this incredible output, the Supersharpy's light reaches never-seen-before mid-air distances, making the Supersharpy the first low-wattage beam light that can really challenge a searchlight.

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**Riedel**  
**Tango TNG-200**

**Australian Distributor: Riedel Communications Australia**  
**www.riedel.net or (02) 9669 1199**

Riedel Communications have released the Tango TNG-200, the company's first fully networked platform based on the AES67 and AVB standards. With its own dedicated intercom application, the platform can be turned into a flexible, cutting-edge solution for a variety of communications scenarios. Along with powerful processing capabilities, the Tango TNG-200 features two integrated Riedel Digital Partylines, two AES67 and AVB-compatible ports, two Ethernet ports, one option slot, and redundant power supplies. The system is 1.5 RU high and features a shallow mounting depth and low-noise design. It is fully compatible with all of Riedel's current and legacy intercom panels, including the company's new RSP-2318 Smartpanel.



**RØDE**  
**Stereo VideoMic X**

Using components shared with RØDE's very finest studio recording microphones, the SVMX sets a new standard in immersive audio for camera systems. By employing Rycote Onboard suspension at a capsule-level, the SVMX protects your audio from vibration and handling noise without compromising durability. A three stage high-pass filter at 0/75/150Hz cuts out any unwanted low frequency audio and three stage level adjustment, from -10dB PAD to +20dB, provides a cleaner audio signal to your camera/recording device. For the very first time on any RØDE microphone the SVMX features integrated digital switching, allowing you to easily select any of the numerous in-built filters and settings with the confidence of LED indicators. An acoustically matched pair of 1/2" externally polarised, true condenser capsules provide studio-quality, immersive stereo sound.

**Australian Distributor: RØDE Microphones**  
**www.rodemic.com or (02) 9648 5855**

**Lawo**  
**mc<sup>2</sup>36**



Lawo debuted its newest mc<sup>2</sup> series console at the AES convention in LA. The mc<sup>2</sup>36 is an all-in-one mixing desk, with a comprehensive feature set that covers broadcast, theatre, house of worship, live and install applications. The console comes completely self-contained including a powerful DSP processing core and all I/O connections and is available in 16, 24 and 40 fader configurations. Ease of use is paramount, with large touchscreen displays that provide instant, touch triggered pop-up menus for fast access to all mixing and routing parameters. Natively equipped with RAVENNA/AES67 technology, the mc<sup>2</sup>36 integrates seamlessly into IP infrastructures. Rear panel connections provide 32 mic/line in, 32 line out on XLRs, 8 AES in/out, 8 GPIO, MADI and three RAVENNA connections.

**Australian Distributor:**  
**Professional Audio & Television**  
**www.proaudiotechnology.com.au**  
**or (02) 9476 1272**

And for operational security, the console not only has redundant power-supplies but also DSP redundancy.



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- EXTRON
- LAWO
- RIEDEL
- RODE
- TASCAM

**Extron**  
**ShareLink 200**  
**Wireless**  
**Collaboration**  
**Gateway**

**Australian Distributor: RGB Integration**  
**www.rgbintegration.com or (08) 8351 2188**



Extron Electronics have announced the ShareLink 200 Wireless Collaboration Gateway, which enables anyone to present content from a personal device. Supported devices include Windows and OS X computers, as well as iOS and Android smartphones and tablets. ShareLink technology provides simultaneous display of presentations, images, documents, and other content from up to four different personal devices. Content from a single device shows full screen, and content from multiple devices appears simultaneously in four windows on the display. Designed for professional AV applications, this wireless gateway also includes many integrator-friendly features such as an integrated wireless access point, PoE, and antennas mounted on the front panel. The ShareLink 200 Wireless Collaboration Gateway can be used to create a stand-alone wireless collaboration and presentation system or to add wireless presentation capabilities to a variety of wired AV system designs.

**Tascam**  
**Recorders & USB Audio Interfaces**

A slew of new and updated portable recorders plus two new USB audio interfaces from Tascam this month.

**DR-05MK2**

The DR-05MK2 records in MP3 or WAV format – including 96kHz/24-bit high-resolution audio – to microSD or microSDHC media. A pair of all-new microphones handles up to 125dB SPL. Special features include non-destructive overdubbing, reverb, auto record and auto mark functions. **RRP \$179**



**DR-22WL**

The DR-22WL is the first portable recorder to include Wi-Fi for transport control, file transfer, and audio streaming to your smartphone or PC. Features include Scene Dial Presets for instant setup of common recording applications, remote control, file transfer and streaming playback using 2.4GHz Wi-Fi and full remote control using the free TASCAM app for iOS and Android. **RRP \$269**



**US-2x2**

The US-2x2 combines great audio quality and ergonomic design for a powerful 2-in/2-out USB 2 Audio interface. Two of TASCAM's Ultra-HDDA mic/line preamps provide up to 57dB of gain with nearly inaudible noise and distortion specs. The audio design features high-performance, musical components like NE5532 op amps for rich sound quality without colouring the source. **RRP \$249**

**DR-44WL**

Boasting the same WiFi feature set as the DR-22WL, the DR-44WL adds four-track mode for advanced recording. **RRP \$499**



**US-4x4**

With similar specs and performance to the US-2x2, the US-4x4 includes two additional mic pres with XLR and TRS inputs, two additional TRS outs and a second headphone jack. **RRP \$419**

**Australian Distributor: CMI Music and Audio www.cmi.com.au or (03) 9315 2244**



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# Theatres SYDNEY VS MELBO

What a crop! The Melbourne roundup last issue does ever so slightly outflank Sydney, but there are many reasons why the Harbour City is just so superior. There is one very large opportunity awaiting Sydney, and that is the gi-normous hole in the ground at Barangaroo.

The 'hole' is in fact a new cultural centre – actual use unspecified – under the Headland Park. It is under construction right now, with an anticipated floor area of up to 18,000 sqm. When CX took the picture on this page, it looked plenty big enough for a new 1,500 seat theatre, which is EXACTLY what Sydney needs!

To visualise how it would work, it starts just around the corner from Hickson Parade, on which is Sydney Theatre. Sydney would gain a theatre hub, as Sydney Theatre Wharf is just there too, and the Lyric at the casino is just over the bay.

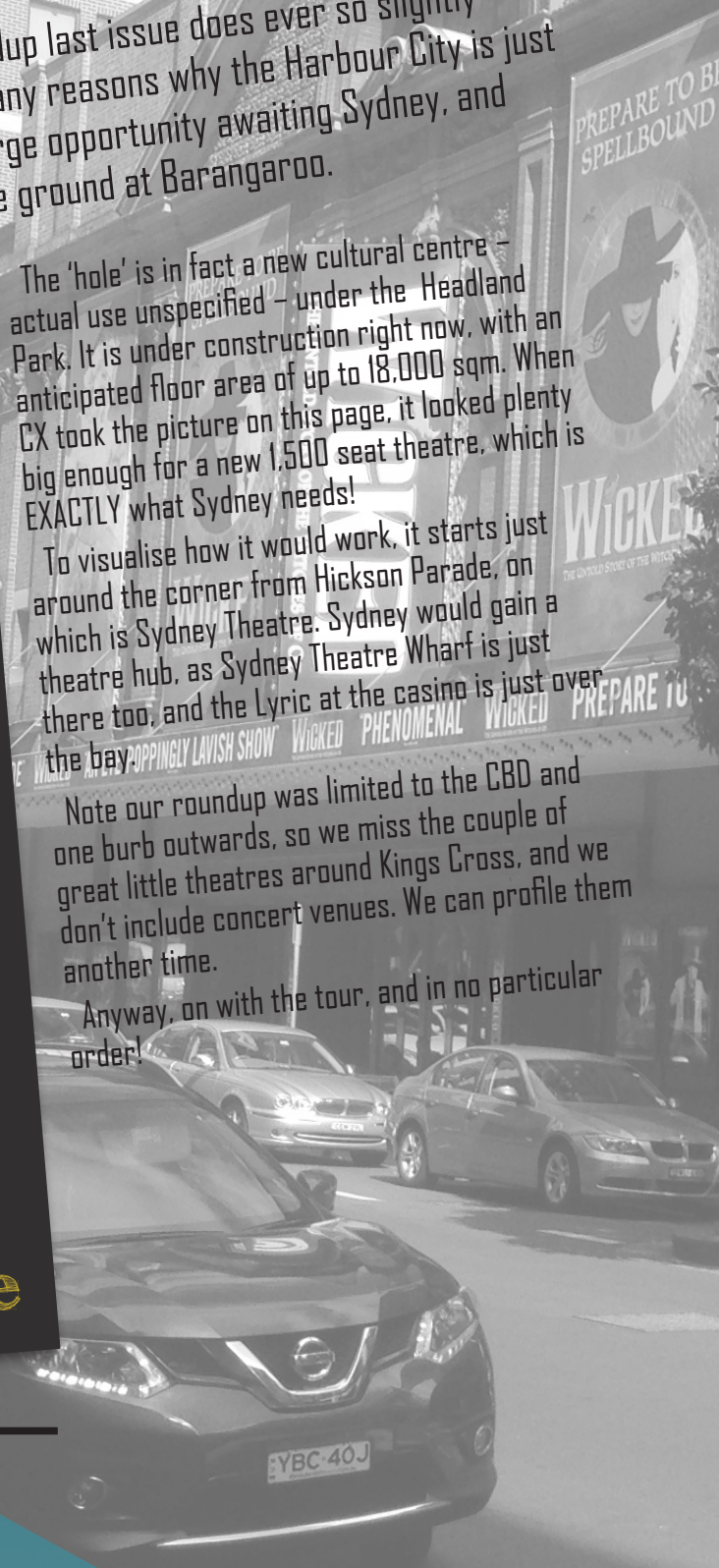
Note our roundup was limited to the CBD and one burb outwards, so we miss the couple of great little theatres around Kings Cross, and we don't include concert venues. We can profile them another time.

Anyway, on with the tour, and in no particular order!



The **BARANGAROO** site

BY JULIUS GRAFTON



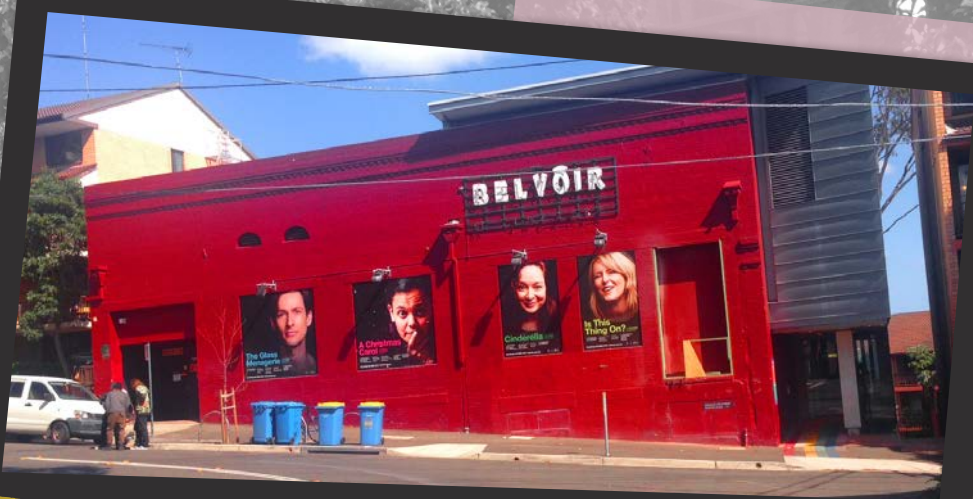
# SURNE

Eternity Playhouse  
39 Burton Street

This is the newest space here, newly minted from within a heritage church. An intimate 200 seat tiered theatre with infrastructure from PA People, Barbizon and Jands. It has a Cablenet 'virtual floor' from Slingco for safe work at height.



## ETERNITY PLAYHOUSE



## BELVOIR STREET THEATRE

Belvoir Street Theatre  
25 Belvoir Street

When the Nimrod Theatre building in Belvoir Street, Surry Hills, was threatened with redevelopment in 1984, more than 600 people – ardent theatre lovers together with arts, entertainment and media professionals – formed a syndicate to buy the building and save this unique performance space in innercity Sydney. Upstairs Theatre seats 300 and comes fully equipped with a lighting rig and sound desk. Downstairs Theatre seats 80.



## THEATRE ROYAL

Theatre Royal  
108 King Street

The current Theatre Royal, designed by Harry Seidler, opened in 1976 and is located in The MLC Centre, in the heart of Sydney's CBD. It has hosted musicals such as Phantom of the Opera, and Jersey Boys. With 1183 seats, the Theatre Royal is hired as a 'bare walls' venue, however, some technical equipment is available.

### Sydney Theatre Company Walsh Bay

The Wharf is Sydney Theatre Company's home base, at Pier 4/5, Hickson Road, Walsh Bay. At the Wharf are two theatres. Wharf 1 seats between 309 and 324 people, and Wharf two just under 200. The largest (and newest) theatre is Sydney Theatre, which seats up to 896 people and is situated 150 metres west of The Wharf, opposite Pier 6/7 on Hickson Road. It is fully equipped.



## SYDNEY THEATRE COMPANY



### State Theatre 49 Market St

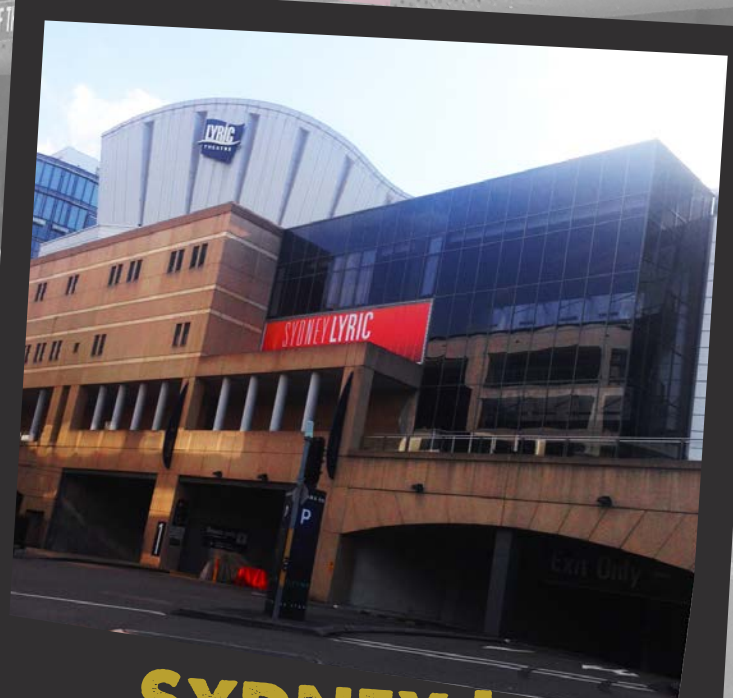
With 2,034 seats, The State Theatre has hosted some musical and theatrical productions over its long history, but mostly serves as a concert venue. For theatre, it has 34 working flylines. The major limitation is wing space. In current configuration, audio and lighting is installed and available at an extra cost.



## STATE THEATRE

2,050 seats makes this the largest theatre in Sydney, and the second under management of Foundation Entertainment Group Limited. Located within the Star Casino, it shares most major productions with The Capitol Theatre.

### Sydney Lyric Pirrama Road Pymont



## SYDNEY LYRIC



## THE CAPITOL THEATRE

The Capitol Theatre  
13 Campbell Street  
Haymarket

With 2,038 seats the Capitol is arguably the grand dame of Sydney's Theatres. It hosts many major productions, and is managed by Foundation Entertainment Group Limited - which is headed by Stephen Found, formerly of Bytecraft. A 'bare walls' theatre, with a large orchestra pit and over 100 flylines.



## The GENESIAN THEATRE

Genesian Theatre  
420 Kent Street

This is the baby theatre of the city, it's been there forever, and it keeps on keeping on. Think small and resilient. 125 seats. You have to love a theatre like this, at presstime they were running Spider's Web by Agatha Christie.

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# SYDNEY OPERA HOUSE



Joan Sutherland Theatre (Formerly The Opera Theatre) has 1,507 seats. Lighting is controlled by an ETC EOS computerised control system, and like all venues at the Sydney Opera House, complete production is available to a high technical standard.

Drama Theatre seats a maximum of 544  
Playhouse seats 398  
Studio seats 280  
The Concert Hall seats a maximum of 2,679 – and is mentioned in this Theatre roundup only because it would look like an omission not to!



## JOAN SUTHERLAND THEATRE

## PLAYHOUSE THEATRE

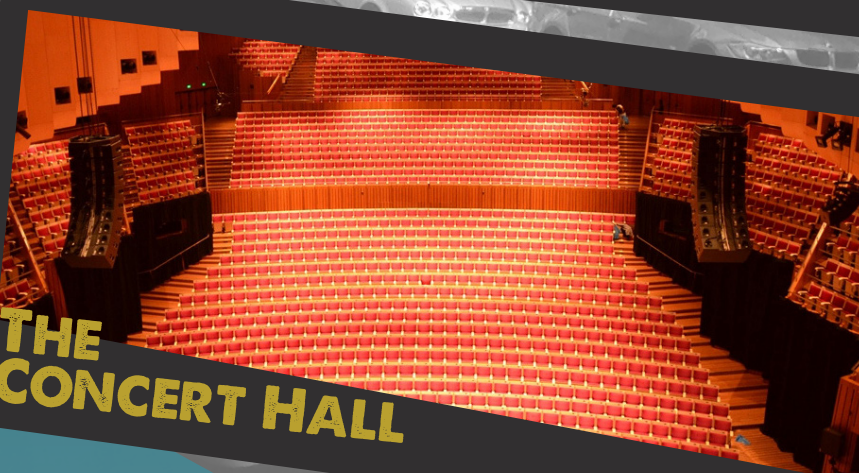


## THE STUDIO



So there we go...  
Melbourne has many things that are very good, and indeed a better spread of theatres. But Sydney is not far behind. If the hole at Barangaroo were to be filled with a 1,500 seat theatre, we would have it all! There is no other proposal on the books, other than a crazy demountable theatre concept back in 2003. That was because the Joan Sutherland Theatre was to have been rebuilt in 2005 - but of course it wasn't. Sydney: we need more theatre investment! Hello? Is anyone there....?

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# THE MILL REPORT

## EVERYTHING'S GONE GREEN

It's been crazy down here at The Mill in the last month. Work has been appearing on the horizon left and right - which is obviously a good thing - but something else has appeared that was quite unexpected, and it's put the cat amongst the pigeons.

I'm trying to turn The Mill - currently a two-acre property with a production studio, ocean views and lots of lawns to mow - into a 120-acre expanse!

It's a massive change in scale, that's for sure; one that will no doubt involve way more physical work, but it's something I - for whatever reason - feel driven to do. There will be more lawns to mow than ever before, that's for sure, but the upside will be an even greater level of peace and quiet around here, and lots more land for wildlife. Either I'm completely nuts, or I'm destined to be the new lord of all I survey.

The other thing I've done down here in recent weeks is finally make the decision to run the studio off the sun. I can't in all conscience continue to power the studio via a 19th century coal burning power plant down in Yallourn while the world's icecaps melt and species vanish. It's just not cool any more (was it ever?). I can't sit on my arse and knowingly contribute to the planet's destruction while the outside world goes to hell in a hand basket. So things have really started changing around here.

### PANEL DISCUSSION

I've just installed a 4.5kw (18 x 250w) solar system on the roof courtesy of a company called Standard Solar, who were great in providing me with a professional setup (as well as backup support for the studio) and quality components. I've been struggling to find a company with a history, a track record, and expertise in solar systems until now, but I'm pretty happy with the



Standard Solar can be contacted on: 1800 636 636 or [www.standardssolar.com.au](http://www.standardssolar.com.au)

BY ANDY STEWART

outcome (although getting the panels 'signed off' by the power company – Ausnet Services – has been a massive pain in the arse).

The best thing about Standard Solar is that they're national, they've been around a long time and don't look to be disappearing like a mirage 30 days after installation like so many already have.

The system is up and running now and currently providing about 21kw hours of power to the studio's phase per day. (There are two phases here; one for the house, one for the studio.) Even though they're installed on the house, the panels hook into the studio's phase via a 5kw inverter, feeding it directly with in excess of 4,450w of power (in the middle of the day), and then either selling the excess back to the grid, or drawing extra power from it, depending on the usage. After-hours, when the sun goes down, the studio reverts back to drawing from the grid until such time as I can afford a lithium-ion battery backup system, which won't be any time soon I suspect since it's a 10 grand purchase.

Today I've been mixing solidly all day, and measured the studio's power consumption at about 8.3 amps on average, or 1992W, without the reverse cycle air-conditioning on. When the air-con's running the consumption jumps to about 11.3 amps (2712W).

Without being able to crunch the numbers too accurately just yet, the studio will basically be running off the panels from now on as far as I can tell, give or take. It's a nice feeling to know that the sun is finally running the show... maybe the The Mill should change its name to Sun Studios, but I think that name's been taken.

#### THE LOW-DOWN

One of the downsides of running a commercial recording studio is no doubt the power bill every quarter. It's one of those great hidden costs that home studio owners who eventually migrate into commercial premises (to accommodate that enormous Neve console they've always dreamed of owning) finally confront.

But even when that never happens, everyone with a studio setup draws power. And regardless of the scale, it's good to know what you consume and how you might be able to reduce the cost of your operation.

There's no doubt that power consumption in commercial recording studios has dropped dramatically in recent years with the introduction of LED lighting, the virtual wholesale abandonment of tape machines and large format consoles, and most, if not all, outboard gear. The coke machine has probably gone back in most cases too, while the pinball machine is now an app on your iPhone. The aircon isn't working half as hard as it used to either because there are far fewer analogue devices generating heat nowadays. All in all, the draw from your average studio is a mere fraction of what it once was.

But if, like me, you've still got some hungry beasts in your studio – consoles, tape machines, tube and/or Class-A outboard gear, amps etc – it might pay to turn them off whenever they're not in use, if you don't already. Having a pile of gear sitting there making noise, generating heat, drawing power and ageing all day and half the night only sends the power bill through the roof, and for no real benefit. These days I turn gear on only when I need it – the days of everything being on 24/7 are over.

#### EASY, SIMPLE & EFFECTIVE

It's been an interesting shift in thinking, running off solar power. One thing's for sure, I'm now far more conscious of the power I consume and how I consume it, which is great. Without turning into Captain Scrooge, I've managed to reduce my consumption to under the amount that the panels produce. Whether that continues to be the case when summer hits and the air-con is running all day I'm not sure. There will be more sunlight hours then too so they may continue to cancel one another out. Time will tell.

If you can afford solar panels at your place (and you have roof access or some other way to set them up), it certainly has its advantages. Not only is it a cleaner

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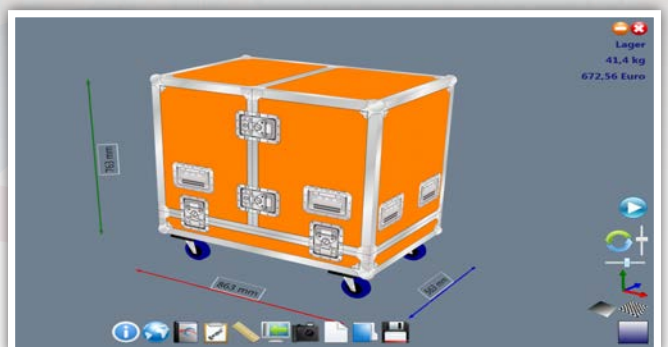
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source of power, it's also like having a part time employee on the roof. Even if you get a system that's not quite large enough to cover your studio's daily consumption, unless you're in it every day or you own a mountain of analogue gear like I do, chances are there will be more power generated by the system than the studio can consume. Eventually that's money in the bank.

For me it was a no-brainer. I have the space, I own the property and my recent power bill was well over a grand. I've calculated that the setup will be paid off in about 18 months after which time the systems will be saving me money every day. In the days of cost minimisation and global warming, I think it's an important step forward for the studio.

But frankly, and more importantly, I don't want my son growing up in a world I helped destroy.

Oh, and by the way, if you get panels, just don't put the inverter too close to the studio if you can avoid it... they buzz incessantly, and not in a nice way.

The Maag 2-band is a high quality no-nonsense, great sounding, well constructed and easy to use mono EQ that's great for everything from tweaking a mic simply and quickly during a tracking session to altering an entire stereo mix (assuming you have two) via its solidly constructed stepped frequency selectors and indented gain pots.

The top-end is a boost-only shelf, with frequencies starting at 2.5kHz and clicking through 5, 10, 15 and 20kHz, before culminating at Maag's well known 40kHz 'air' band. Sonically the 40kHz band sounds pretty special actually, but hearing lots of 40k isn't necessarily what it's all about - although my dog Rupee digs it.

It's influence on lower frequencies is mostly what this seemingly irrelevant band is all about, and more to the point, being able to get high enough above certain frequencies that they don't impact on your sound, like adding air to a vocal for instance, without getting too far down into sibilance territory. Feather light and soft as talcum powder, the 40kHz boost is like adding a touch of diamond dust to the stratospherics of your mix.

The low frequency EQ filter is a boost only bell curve, featuring a narrow or broad Q selector. The frequencies on offer here differ depending on which Q you've selected and these range from what Maag calls 'sub' all the way up 1.4kHz, with nine other possibilities in between. These sound really good, adding great weight and thump where necessary, and because the frequency selector is stepped and repeatable, they're also very cool for stereo mix bus duties as well as tracking and overdubs. Better still, both EQ bands can be switched in and out of circuit, so you only need to use the bands you require. There's also a high quality input gain attenuator at the bottom of the module to help you manage the signal passing through the circuit, which is very handy for those moments when you realise the signal driving into it is just too hot.

These Maag 2-band EQs are pretty simple - some might say too simple to be versatile - but for what they're designed to do they're elegant, fast, phase coherent, and usually offer more than enough control. They may not have a million options to dazzle (or confuse) you with but they're clean, beautifully put together and very smooth sounding.

In a competitive market, less options on the front panel no doubt makes the Maag 2-band EQ a hard sell, but a couple of these in a rack would be a classy addition to any fixed or portable rig - elegant in their simplicity, and sweet sounding. Superb on ribbon mics!

MAAG AUDIO EQ2 500 SERIES 2-BAND EQ MODULE

TOOLBOX review

I'm on a real 500-series module kick at the moment and the latest of these to land on my doorstep has been a pair of Maag Audio EQ2-500 two-band EQ modules.

Price: \$699  
Federal Audio: 0404 921 781  
www.federalaudio.com.au



Andy Stewart owns and operates Sun Studios... correction, The Mill in Victoria; a world class production and mastering facility. He's happy to respond to any pleas for recording, mixing or mastering help... contact him at: andy@themillstudio.com.au or visit www.themillstudio.com.au

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# BOX HILL INTEGRATED TECHNOLOGY HUB COLLABORATIVE EDUCATION

# BOX HILL

Melbourne's Box Hill Institute of TAFE has an impressive record in turning out trade graduates working in fields as diverse as hospitality, live production and mechanical engineering. When given the funding for a new building to train trade-ready workers, they realised that their AV systems had to be representative of what their graduates were about to experience in the workplace. In the end, Box Hill have built a facility that would make any corporate envious. Jason Allen got the inside word

The genesis of the Box Hill Integrated Technology Hub was in a technology tour of the USA undertaken by staff from across the TAFE system. Amongst site visits and system inspections, the fact-finding mission had the pleasure of visiting Extron's factory. Clearly impressed by what they saw, TAFE adopted the 'end-to-end' philosophy that Extron propose, keeping the entire AV signal path, including audio, video and control, under the one brand. In a four-storey building designed for modern collaborative learning, this translated to a huge AV system controlling interactive whiteboards and projectors, student pods with multiple inputs and control paths, displays and digital signage in break-out areas and multimedia playback throughout.

The project was tackled by a team consisting of builders Cockram Constructions, AV/ICT consultant Aurecon, AV integrator Pro AV Solutions and Extron distributor RGB Integration. "The building is used to educate future trade professionals so high levels of workmanship needed to be on display," said Stewart Hill, Project Manager at Cockram Construction. "Box Hill Institute encouraged contractors to innovate and suggest ways to best display this in the project." Maree McDonald, Executive Manager, Strategic Projects at Box Hill Institute, laid out the aim of the project clearly. "The main goal in the design and development of the Integrated Technology Hub was to create an environment to train work-ready graduates in an innovative workplace environment in the key areas of Building Services and Electro-Mechanical technologies. The technology in the

BY JASON ALLEN  
PHOTOGRAPHY: SARAH JACKSON & DIANNA SNAPE



building is designed to provide a greater emphasis on collaborative learning so that students in class can share their work with other students in real-time. This provides an immediacy to the learning and promotes greater discussion and sharing of diverse solutions to a wide range of theoretical and practical problems."

### **WORKING TOGETHER**

Collaborative learning environments (for anyone like this author whose contact with educational institutions ceased in the 90s) are typified by rooms divided into 'pods'; tables that accommodate four to six students, fitted out with multiple monitors, accepting inputs from the student's devices or built-in computers.

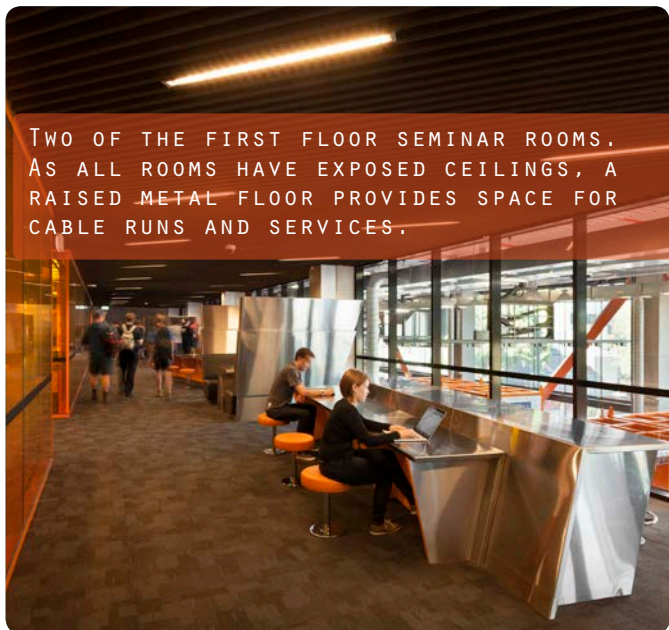
There are usually four to six pods

in a room, and all can have the ability to share student material at their pod, to the whole room via projectors or screens, or have material from the lecturer displayed everywhere. Digital video and distributed audio has to be picked up and handled from each station, and control needs to be accessed by students and teachers alike. Systems need to be simple, robust, self-explanatory and pretty much bomb-proof. But what's the benefit of all of this AV gear to the students and teachers?

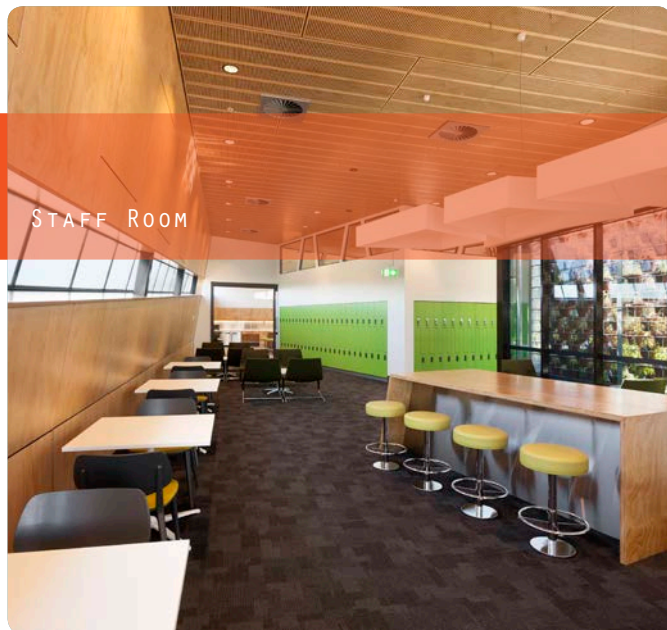
"Students bring a diversity in backgrounds and a wide variety of experience to the classroom situation that can be utilised through collaborative learning approaches," explained Maree McDonald. "The sharing of ideas and the discussion it promotes mimics the experience that students will have in the workplace and thus facilitates the process of producing work-ready graduates. Educators benefit from collaborative learning environments because they provide greater flexibility in learning methods and styles and take into account the pre-existing knowledge and experience of the students.

That way, the educator becomes a facilitator of learning, rather than a person who has been erroneously considered in the past as the 'fountain of all knowledge'."





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STAFF ROOM

**OUT OF THE BOX**

Madhu Pokhrel, ICT and AV consultant at Aurecon, was responsible for the AV design as part of the Box Hill Institute project. The project was unique in its functionality, and required a deep understanding of all aspects so that the proposed AV system complemented the overall project outcome. Aurecon worked closely with the client and project team to create a system that would tick all the boxes for the end users. "This was the first all-digital audio and video signal distribution project for the Box Hill Institute," said Madhu. "It was important to find a balance between technology and robustness in achieving the overall functionality desired by the Client. It was also important to ensure that the proposed system was simple and designed as an end-to-end compatible solution to avoid any digital signal authentication issues. After consulting with user groups, Aurecon proposed a fully digital signal distribution and control solution designed around Extron's product platforms. Extron's integrated 'one-stop-shop' was one of the main reasons Box Hill had confidence in this solution."

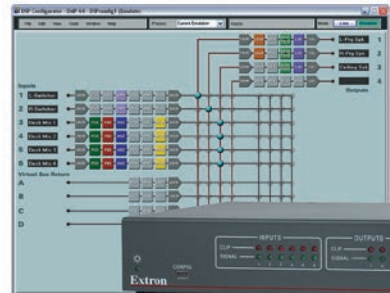
**EXTRON'S XTP RANGE**



At the heart of the system that Aurecon specified were two major new video switchers in the Extron range, the XTP CrossPoint 1600 and XTP CrossPoint 3200. These handled video switching in the major seminar rooms on Level 1, with the 16x16 1600s handling rooms one and four and the 32x32 3200 handling rooms two and three, which can be opened up to form one large teaching space. Amazingly, Aurecon specified both of these units for the project as they had been announced long before they were available in the market. Ben Fabien, Branch Manager Victoria, at Australian Extron distributor RGB Integration, commented that "Aurecon took a leap of faith. I think there's a confidence in Extron because all of their products go through the same quality control and engineering processes. Consultants and customers know that there's not going to be any incompatibility between different products of different generations. The new XTP switchers offered a streamlined digital twisted pair platform backed up by the history of Extron's quality and reliability."

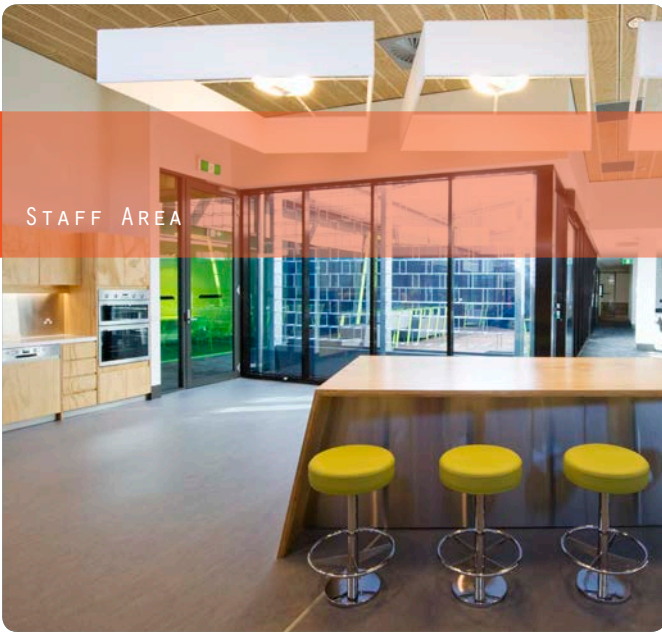


RGB INTEGRATION'S BEN FABIEN  
 Extron Australian Distributor



EXTRON DMP 64 DIGITAL MATRIX PROCESSOR





STAFF AREA



STUDENT PODS AND INTERACTIVE PROJECTION

**WIRING IT UP**

Graeme Overall, Operations Manager Victoria at integrator Pro AV Solutions, was at the coal-face of the installation, but wasn't phased by the inclusion in the specification of product that was as yet unavailable to the Pro AV crew. "The new XTP Series is good product," Graeme conceded. "It's at a more advanced level than what was previously available, particularly for

collaborative spaces, due to the sheer number of inputs available. That being said, there was a lot of work involved in programming them up and getting them working. We got a couple of our techs trained on XTP while the build was happening so they were conversant with the products when they landed. RGB Integration were very hands-on and helpful when it came to training us up and getting everything working smoothly, which was a big advantage."



(Acrylic top StageDex as pictured indent only)



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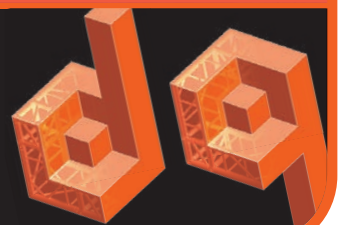
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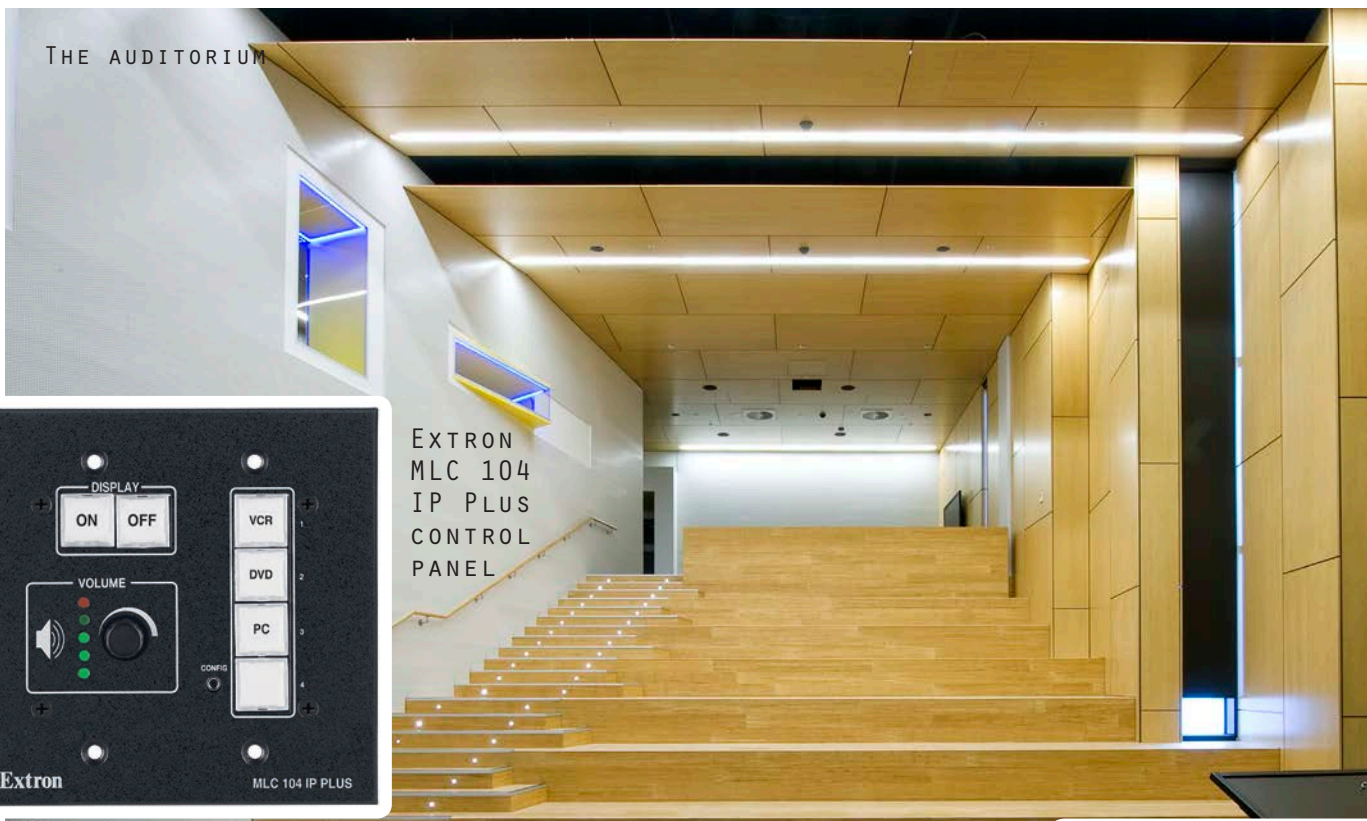
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THE AUDITORIUM



EXTRON  
MLC 104  
IP PLUS  
CONTROL  
PANEL



EXTRON  
TLP 710MV  
TOUCHLINK  
TOUCHSCREEN

the main seminar rooms is fitted with three XTP T USW 103 three-input switchers. These accept HDMI, RGBHV and audio and send them to the main processor via Catx cable. MLC 104 control panels built into the pods enable students to select video inputs and outputs and control volume. These also run on IP, and enable web-based remote control and management. Main room control in the complex spaces was via 10" TLP 1000MV or 7" TLP 710MV TouchLink touchscreens, wall mounted and running on PoE. The exact layout and functionality of the touchscreens was developed by Pro AV in consultation with Box Hill staff.

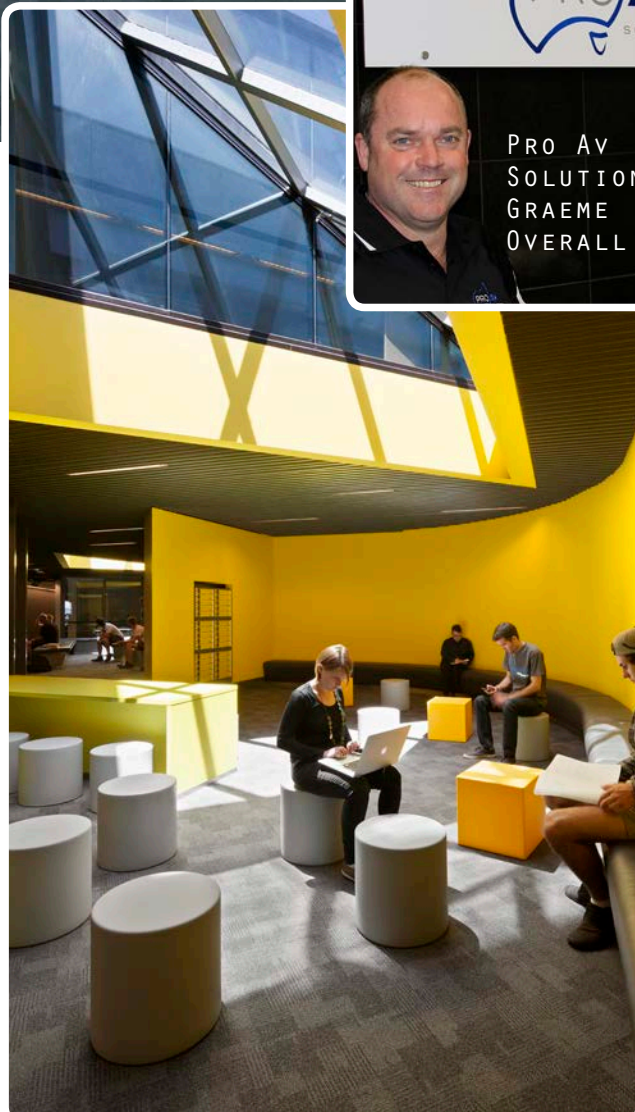
**HANDS ON**

"We got the chance to come up with some touchscreen layouts and workshop that with the end users" said Pro AV's Graeme Overall. "We tapped into the senior staff's vision of what they were trying to achieve and the lecturer's vision of how they wanted the room to operate. Once they both explained what they wanted and needed, we made a couple of changes to our initial designs and everyone was happy. If we didn't have that initial customer engagement, we would certainly have had to go back to make changes. Having good engagement with the right people is invaluable."

Through the smaller rooms, DXP HDMI Series matrix switchers in frame sizes of 4x4 or 8x8 were used for less demanding video setups. Audio was de-embedded



PRO AV  
SOLUTION'S  
GRAEME  
OVERALL





PRACTICAL MECHANICAL LEARNING SPACE WITH WORKBENCHES AND LINO FLOOR, AUGMENTED WITH INTERACTIVE PROJECTION AND SECONDARY DISPLAY

throughout and sent to four six-in, four-out DMP 64 Digital Matrix Processors before running out to a combination of MPA 152 mini power amps, MPA 401-100V amps for 100v line runs and an XPA 2003C-100V which has two channels at 4 ohms and one channel running 100v. 45 pairs of Extron SI 26CT ceiling speakers and three pairs of SI 28 surface mount speakers completed the audio fit-out.

#### **BREAKING OUT**

Outside of the regular teaching rooms, the Technology Hub has several informal breakout spaces in corridors and other void areas. These are fitted with inputs to local screens. When not being used by students for informal collaboration, they run as part of the Cisco digital signage system. "The breakout spaces were designed to allow students to work informally or to use the breakout rooms connected to major classrooms as project rooms," explained Maree McDonald. "The displays throughout the building are programmed to provide building and facility information. There are also various 'Write On' walls marked out with yellow tape that facilitate informal learning."

Since its opening, Extron's end-to-end collaborative solution has proven to be the right fit for Box Hill. "The flexibility of the technology and the equipment in the building is second to none and we believe that we have developed highly creative and innovative learning spaces that will train the students and apprentices of the future," confirmed Maree. "We found Box Hill Institute to be focussed on quality educational outcomes for students and this was reflected in their collaborative and co-operative approach to the project," added Stewart

Hill of Cockram Construction. "The AV system was complex and extensive and Aurecon and Pro AV did a great job collaborating with us and the client to ensure that the client's needs were met."

#### **SIGNING OFF**

"High quality Audio Visual system designs must be complimented by a solid partnership with the installation team to achieve the overall projects goals," said Madhu Pokhrel. "My experience with Pro AV Solutions and RGB Integration were key in delivering this project. Aurecon worked in a collaborative environment with both companies to deliver an AV solution that met our design intent and exceeded the Client's expectations." Graeme Overall of Pro AV Solutions is similarly complementary about Madhu and the team; "Aurecon were always easy to engage with. Through many hours and many meetings, they always had a really collaborative approach."

According to RGB's Ben Fabien, Extron is likely to find itself more and more at home in Australia's education market. "In the US, the majority of the market share is education, so there's been a huge push in recent times to develop collaboration products. The new Extron Sharelink200 wireless collaboration product is a case in point. Collaboration equipment isn't generally the larger ticket items, but it's a huge opportunity for us."



Andy Stewart owns and operates The Mill studio in Victoria; a world class production and mastering facility. He's happy to respond to any pleas for recording, mixing or mastering help... contact him at: andy@themillstudio.com.au or visit www.themillstudio.com.au

# LISTEN HERE

## IGNORE TONAL BALANCE AT YOUR PERIL

For as long as I can remember, there's been a popular expectation amongst independent producers, artists and engineers that the mastering process will 'fix' any tonal problems their mixes might have. But the old adage - "we can fix it in mastering" - is a dangerous crutch to lean on.

Meanwhile, at the other end of the spectrum, highly paid, world renowned mix engineers tend to hold the opposite perspective on mastering: "Whatever you do, don't touch my tone!" they say.

**So what's going on here? Why does one group of engineers look to mastering to cure all its tonal issues, when the other hopes the mastering engineer will do little more than turn it up a bit and put the kettle on?**

In short, because one group of engineers is, by and large, supremely confident about its skills, control rooms and hearing, while the other isn't.

I know this may seem a fairly blunt and simplistic appraisal of the world's studio communities, but despite there being a bit of grey around the edges of this fairly black and white statement, it's true. Home studio mixes tend to require more tonal adjustment in mastering than those emanating from the world's best studios.

The reasons for this are fairly self-evident. For starters world-class rooms tend to be much 'flatter', many of them having been designed by internationally acclaimed acousticians, giving the engineers working in them greater confidence in what they're hearing. Secondly, the engineers working in these rooms tend to be more experienced, and thirdly the rooms are often filled with some of the best studio equipment ever made, and while this is no guarantee of a brilliant outcome, provided you're skilled in your craft, great equipment certainly helps.

### GAME OF TONES

But this is all beside the point...

Tonal balance is what I'm here to talk about this issue, not why one group of engineers is arguably more capable than another.

When it comes to mixing, tonal balance is paramount to a good outcome. It's as vital to any mix as volume levels. Indeed, the two are inextricably linked to the point where, in many respects, they're indistinguishable. Adjust the tone of a sound and its volume is altered simultaneously. Tonal adjustments are but volume changes after all... to one part of a sound rather than all of it.

When you think of tone in this way, that's when you begin to realise how critical it is, and why relying on wholesale tonal changes to your mixes during a mastering session is a risky work practise.

But don't get me wrong; I'm not for a moment advocating becoming that guy or gal who tells the mastering engineer: 'keep your hands off my mixes'. What I am concerned with is impressing upon engineers and studio owners the need for tonal accuracy in their listening environments so that their work becomes more refined. The more refined your mix, the better the mastering outcome. Meanwhile, a mix that significantly misses the mark in this respect can later be exposed as having all manner of balance issues once the tone is 'corrected'.

### TOO BRIGHT, TOO DULL... TOO HARD

This manifests in all kinds of ways. Mixes that arrive at the mastering session sounding inordinately dull, for instance, when opened up with high shelving EQ, can often be exposed as having all manner of imbalances in the volumes of things like cymbals, tambourines, sibilance and guitars.

What seemed like a balanced - albeit dull - final mix back in the recording studio, was in fact one that had been deaf to its high-frequency content. What this ultimately means is that the mastering engineer is now compromised in their decision making. Either the tonal balance they're trying to achieve will result in impossibly harsh and loud cymbals and tambourines -

BY ANDY STEWART

which is unacceptable – or dull vocals and a tonal signature that will leave the mix sounding like it's covered in a blanket – also unacceptable.

So where to from here? A bit of both perhaps: a slightly too harsh top-end but a mix that's still a little dull overall? Hmm... no-one's going to be happy with that outcome.

The same can be said of mixes that present at mastering sounding too midrangy or bass light.

Too much midrange, when corrected, can often sound lifeless and out of whack: the snare now sounding good but the vocal dull, the guitars now sounding clear but the vocal far too grainy, and so on.

Bass-light mixes meanwhile, when corrected with mastering EQ and/or expansion, often dredge up little more than an inarticulate boominess that seems disconnected from the song floating above it. The bass guitar is now sounding bigger but uneven, while the kick drum is still impossibly low and vague. Again, no-one wants their mix sounding like that. More to the point, if anyone had heard their song sounding this way during the mix, presumably they would have done something about it.

In many cases like this, it's usually back to the mixing desk (or possibly the drawing board) to repair the issues that the mastering process has uncovered.

### HONESTY, NOT CONCEALMENT

Like ignorance of the law, ignorance of any tonal problems your mixes – or indeed your room – might have is no defence. Doing something proactive about it is paramount to your mixes becoming the professional products you surely want them to be.

The fundamental ingredient required in analysing your mixes, and potentially the room in which you work, is above all else, honesty. There's little point putting your head in the sand and hoping that the problems will go away or no-one will notice.

Take the time to analyse your work space with commercially released music of various genres, and from different parts of the world. Listen carefully to them as if they were your own mixes and ask yourself questions about them: how is the bass response, does the vocal seem sibilant, is there too much top-end (or not enough), how loud is the vocal and is it pushing forward or set back?

If commercial CDs sound great in your room and the response from the speakers seems fairly even and balanced, and by comparison your mixes seem dull, far too topy, or overly compressed, chances are it's not your room that's problematic but your mixing skills and decision making.

Moreover, it begs the obvious question: how do you calibrate your listening during long mixing sessions? Do you even bother? Unlike room calibration you can't just hit yourself with pink noise during a mixing session... you need to listen to music you're familiar with that's well known for its impeccably balanced tone. Otherwise, tonally speaking, you may find yourself way off course by the end of a long day.

Sure, it's scary to submit to an A/B comparison with a commercial hit single, and your mix may indeed sound crap when played up against it, but this is where the honesty policy kicks in again. There's no point shirking this comparison simply because it has the potential to make you look silly in front of your clients. Better now than later, right? Right now you can do something about your mix... later may be too late!

The idea here is not to make you look foolish or incompetent, on the contrary. Honesty will help you achieve a better outcome, and by exposing your mixes to an A/B shootout regularly, the process gets easier. Your clients will appreciate the fact that you're aiming for a world-class result, and be encouraged by seeing you dissatisfied with anything less.

In the end the only person you can blame for an off-course mixing tone is you. Sure, the room and/or your equipment may be contributing to the problem, but if you're the one steering the ship and you look to blame the wheel for sailing everyone onto the rocks, you're going to look far more foolish than the guy who saw the rocks looming and changed course!

**Good luck.**

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Lawo's new mc<sup>2</sup>36 digital mixer. Three AES67/Ravenna ports ship as standard

# Let's Play Nice

AES67-2013 is an emerging standard in the heady world of Audio over IP, or AoIP as it's known to its friends. Announced

by the Audio Engineering Society in September 2013, we're now seeing the first products to market bearing the 'AES67' label. But what does it mean? Jason Allen looks under the hood of the audio network envisioned by the AES, where everything plugs into everything else...

# AES67

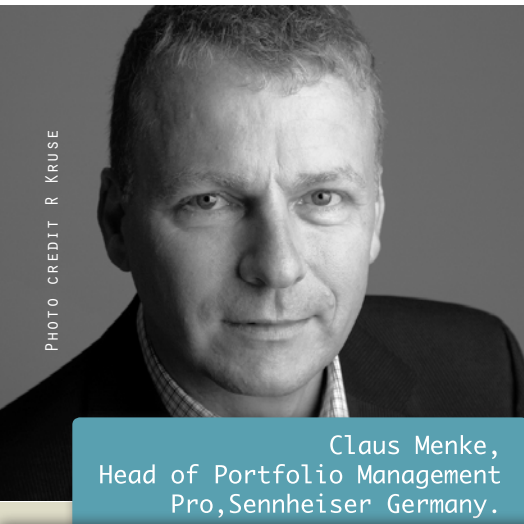
BY JASON ALLEN

I've heard a lot of talk around the industry traps lately about AES67 and I think it's time to set the record straight about what it actually is, what the standard intends and who's going to be implementing it. Put simply, the Audio Engineering Society want any given networked audio product from any given manufacturer to be interoperable with and connectable to any other given product, regardless of the format it's running on. This is a utopian vision in which products running Dante, Ravenna, AVB, Q-Lan, HiQnet, Livewire and all the rest share not only the network, but can freely patch to each other. Much time and money has been put into developing proprietary technology for each differing format, to say nothing of the marketing spend, so is it really in competing manufacturer's interests to make this happen?

The short answer is 'Yes'. Even though the companies selling proprietary solutions can be strikingly competitive (Ravenna, for example, is named for the Italian town where Dante's namesake, 14th century Italian poet Dante Alighieri, is buried), mutual compatibility is almost certain to lead to increased sales for everyone. The theory is that as it becomes easier for designers and engineers to specify and build systems on IP backbones without worrying about one bit of gear not talking to another, or wasting money by converting from one format to another, the more the overall adoption of AoIP will increase. As such all of the major AoIP format players including QSC (Q-Lan), Audinate (Dante), ALC NetworX (Ravenna), Axia (Livewire) and Wheatstone (WheatNet-IP) have all announced their support.

## Laying Down The Law

So what does the standard cover? AES67 lays out, and I quote the publication of the standard itself, "specific recommendations



Claus Menke,  
Head of Portfolio Management  
Pro, Sennheiser Germany.



Aidan Williams,  
Chief Technology Officer,  
Audinate



Cameron O'Neill,  
General Manager Australia,  
Riedel Communications

for interoperability. The standard focuses on defining how existing protocols are used to create an interoperable system." Most importantly, the AES are at pains to point out "No new protocols have been developed to achieve this." And that's something that I notice has been at the heart of a lot of fundamental misunderstandings of what AES67 is all about. Though it can be deployed that way, it's not really a replacement for Dante, or AVB, or anything else. Even though it provides a specification for transport that can stand alone, it's mostly a way to get everything to work together.

As such, the standard defines core requirements related to sync, clocking, transport, encoding, streaming and management. If implemented on an existing network product, as Audinate say they will with a firmware upgrade to Dante, AES67 sees your Dante

gear become compatible with other formats and patchable to and from other devices. It's still Dante, and the Ravenna device you're now connected to is still Ravenna. They've just agreed to a common ground that allows you to interconnect them. Some manufacturers may decide to build a generic AES67 interface into their devices, but it's a lot of effort to go to for not much gain.

Aidan Williams, Chief Technology Officer of Audinate, is clear about their way forward "New standards require quality implementations and Audinate has the track record of delivering quality audio networking implementations - we can and will do that for AES67," he confirmed. "The bottom line is that this isn't 'Dante Vs any new standard'. Dante will evolve to incorporate new standards as they become available and relevant to our customers, who cover a large cross-section of the industry."

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The Riedel Tango TNG-200 and RSP-2318 Smartpanel. Part of Riedel's new networked digital comms platform running on an AES67/AVB backbone



## Working Together

So doesn't this take away any point of difference between competing formats? No – actually, it can now throw them into even sharper relief. Formats like Livewire that have been developed for specific applications have a lot of control capabilities built-in that aren't covered by AES67 or any of its competitors; the ability to tunnel GPIO logic, for example. Similarly, Dante's centralised, one-software-does-all model of Dante Controller patching and administering an entire network is missing from some competitor product.

"Audinate has been offering interoperable networking between manufacturers for some years now," pointed out Aidan Williams, "however not all manufacturers see that as a good thing and stick with their own flavours of networking. Interoperable audio networking potentially breaks up system sales by allowing mixing and matching of different equipment, which the end-user typically sees as in their interest, but it is not necessarily aligned with manufacturer desires. Even networking standards like AVB can be co-opted to suit a system sale; for example, one which involves selling specialised AVB switch infrastructure as part of deal."

Sennheiser, as owners of the both the Sennheiser and Neumann brands, have adopted Dante for Sennheiser wireless microphone products and Ravenna on Neumann digital microphone products. Claus Menke, Head of Portfolio Management Pro at Sennheiser in Germany, spoke with CX about their adoption of network audio and their work towards standardisation. "The Sennheiser Group has worked with the up and coming AoIP standards right from the outset," said Claus. "Sennheiser is looking forward to the consolidation of AoIP into the AES67 standard, as managing and implementing three different network protocols may prove quite an effort. Sennheiser therefore appreciates the efforts of the Ravenna community to already support AES67 and looks forward to Audinate taking the necessary steps within a reasonable period of time."

## Cheaper, Easier, Faster

Cameron O'Neill, General Manager Australia at Riedel Communications, whose new Tango product boasts

both AVB connectivity and AES67 compatibility, is totally behind migration to AoIP and its standardisation; "When you look at something like a broadcast environment, you have video routers, audio routers, intercom systems," he illustrated, "and traditionally that means a lot of patch panels. In the 'network world' all of that is replaced with a bit of software". So while it's definitely cheaper to migrate to AoIP in terms of infrastructure, why is it important to have standard interoperability? "A standard, if crafted properly, will make it so that you don't have to scramble around to connect different systems," Cameron continued. "You just plug everything into a big switch and everything else is done for you. Having a standard is important. Everyone may do their own thing, but a standard acts as a beacon for everyone to move towards."

Audinate's Aidan Williams agrees that standardisation is important, but downplays the short term effects on the market. "AES67 is a helpful standard with a decent chance of deployment because it does not suffer from the switch infrastructure dependencies that hamper AVB. Audinate delivers interoperable audio networking between 150 equipment manufacturers today and so I don't expect the availability of AES67 will appreciably change the level of interoperability available in the market overnight by adding a huge number of new devices which could previously not be connected together. Some non-Dante manufacturers may be able to roll their own audio networking implementation and get basic audio networking functionality between Dante devices and their equipment, but right now, that doesn't appear to represent a huge portion of the market."

## The Driver's Seat

"Integration into existing and upcoming workflows is one of the key drivers for our products," explained Claus Menke. "Working on a unified protocol should be on every manufacturer's to do list. Let's take good ol' MIDI as an example: everybody in the music industry has benefitted a lot from adhering to this standard. It is very important to have one unified standard throughout the industry." Claus also has a similar perspective on the AoIP market's development; "We clearly see this driven by some manufacturers who share their results with

the standardisation committees" he clarified. "While this approach may lead to a lack of support by some other manufacturers, it has a clear advantage in terms of speed. One of the key advantages of Dante is the fact that it receives sufficient support from the industry players to make it move – even if it is proprietary. Other standards have not yet reached the critical mass of support."

Cameron singles out Ravenna backer Lawo, whose new mc<sup>2</sup>36 digital mixing desk ships with three AES67/ Ravenna ports, as a major driver of AES67 adoption in broadcast. "Lawo seems to be the frontrunner in AES67," he surmised. "They made a big splash about it at NAB this year. They were very much in the Ravenna camp but I think that after ESPN's DC2 (Digital Centre 2, the broadcaster's new 9,000 square foot studio facility run on IP) they realised that they need to talk to intercom and video matrices. AES67 is the only standard that is running at (what we call) layer 3; the Transport layer. AVB and CobraNet are still at Layer 2 which makes it hard to retrofit it to an existing network."

### AES-X210 and the Open Control Alliance

The Open Control Alliance is a cooperative industry body that was set up to standardise control and monitoring across audio and media manufacturer's devices over standard Ethernet or WiFi. OCA's members include Audinate, Bosch, d&b audiotechnik, Focusrite, Harman, LOUD and Yamaha. As this article was going to print, the Open Control Alliance were announcing that their AES working project 'AES-X210' was ratified and has become an official AES standard. Focusrite, Bosch and d&b audiotechnik have already built OCA into their products, with the Focusrite RedNet 4, Bosch Audio Processing Switch and the d&b audiotechnik D80 amplifier set-up and demonstrated with a proof-of-concept software tool at the October AES convention in Los Angeles.

Claus Menke is watchful and hopeful that OCA's work will be parlayed into a practical solution for control. "Basically, every manufacturer uses their own protocol to control their devices. A lot of effort and expertise is

currently required on the AV integrator's side to create smoothly running systems with multiple devices from different manufacturers. Currently OCA appears to be doing a good job in promoting their standard but the requirements on the hardware to support OCA are significant. Sennheiser is observing the progress in the development of control network standards very closely."

Aidan Williams is stoic; "AES-X210 could be important, but it is hard to say right now. Many control standards have been developed, but very few (basically none) have been widely implemented. The key measure of AES-X210's success will not be another standards document, but adoption by a good fraction of the important manufacturers."

### Resistance is Useless

No matter what emerges from the OCA, AES67 and AoIP are going to shape any digital audio system from now on. "IP is here to stay," Cameron O'Neill pointed out. "You only have to look at companies like Cisco and developments in videoconferencing to realise that more and more people are heading towards ease of use over audiophile quality. Once they get ease of use and connectivity, then they will start looking at increasing the quality. A standards-based approach is therefore vital, as a standard with an open technical forum is much better placed to try, test and deploy new technology."

"The success of an audio networking technology hinges upon adoption," added Aidan. "Ultimately, the users of AV equipment will drive choices of AV networking technology as they design, deploy and manage networked AV systems. AVB was very hard for users to adopt because of the switch issues. The barriers to adoption are lower for AES67, however end users really want robust audio networking that is easy to use and I'm not sure they're overly concerned about the formats of the packets. End users buy the equipment, and meeting their needs drives manufacturers and technology providers like Audinate. It sounds trite, but the users are in control."



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THE KH310A IS THE LARGEST IN THE NEUMANN NEARFIELD STUDIO MONITOR RANGE, AND I'VE HAD A PAIR OF THEM IN MY STUDIO FOR THE PAST WEEK OR SO. IN A VAST DEVIATION FROM NORMAL I'M JUST GOING TO START WITH AN OPINION. THESE THINGS ARE AWESOME.

# NEUMANN

# KH310A ACTIVE STUDIO MONITORS

## IS IT ME, OR DID IT JUST GET MORE AWESOME IN HERE?



KH310A is a 3 way active design utilizing an 8" LF driver, 3" fabric dome mid driver, and 1" fabric dome tweeter. It has a thing called an MMD Waveguide, the idea of

this being to provide wide horizontal dispersion while keeping vertical coverage relatively narrow to reduce room interaction. The boxes are available in a left or right model, and this is because they sit horizontally. I'm not sure how this would work for a centre speaker, so as far as applications go I'd probably stick to Left/Right or Surround.

BY JIMMY DEN-0UDEN



Individual class AB amplifier modules power each driver, providing 70W continuous output to the HF driver, 70W to the MF, and 150W to LF stage. They could have just pulled the Rolls Royce move and written "adequate" on the power output spec, since it's certainly that (and then some). The free-field frequency response is 34Hz-21kHz +/-3dB. Maximum SPL is provided in the spec in four different ways, but short term output with music at 2.3m is 100dB(C) while maximum long term output with pink noise at the same distance is 94dB(C) – both specs assume a pair of speakers.

The front panel is a single piece and while it looks like plastic, tapping on it with a fingernail reveals none of the associated resonance you'd expect. Around the back of the KH310A, the rear panel ends in two "U" shaped extrusion channels with holes for mounting the speaker. Power input is an IEC with audio input on XLR. An array of slide switches allow you to attenuate low, mid and high frequency response, with an option to boost HF as well.

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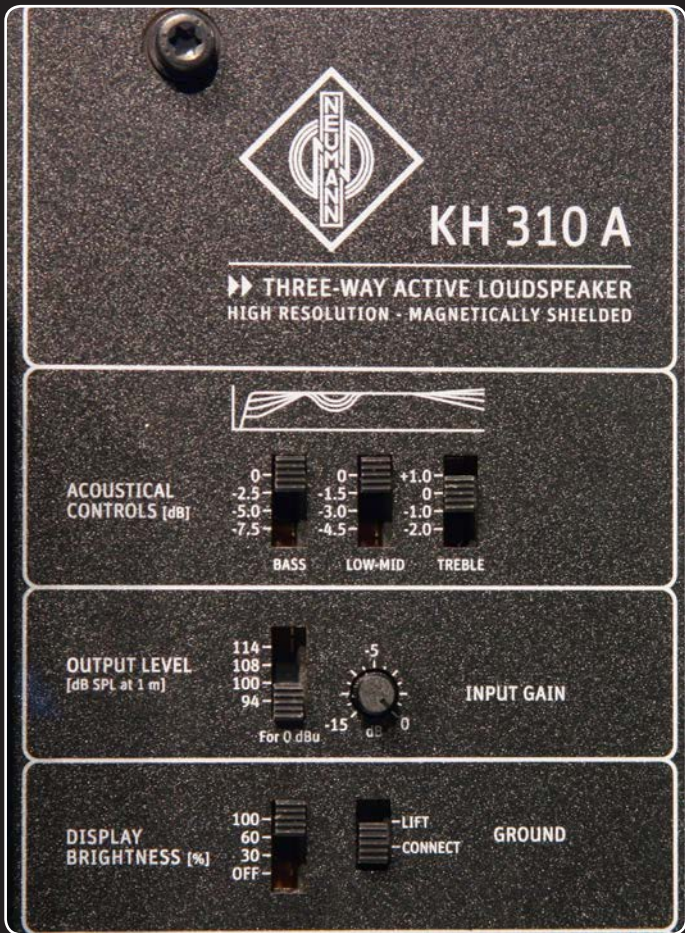
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There's also a 4 position switch to choose your desired output level at 1m, ranging from 94 to 114dB. That's quite a smart thing since it makes you think about how loud you're actually monitoring. There's also a pot to attenuate input level by up to 15dB, and you can change the brightness of the front panel LEDs. Just like on its smaller sibling, the front panel Neumann logo lights up white until you drive the speaker into protect, at which point it turns red. A ground lift switch completes the rear panel controls.

**No loafing**

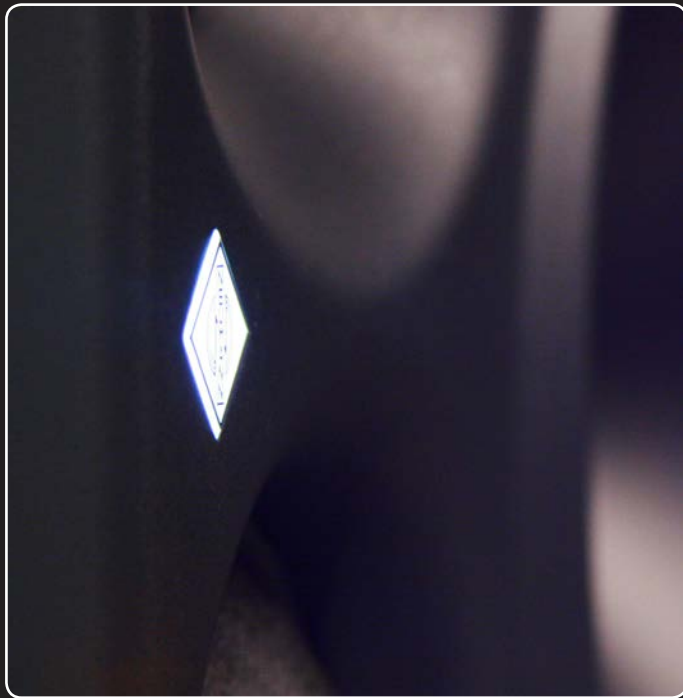
Low end reproduction on the KH310A is resolute, satisfying and entirely certain of itself, while everything north of that is equally well proportioned and controlled. There's literally no weird box resonance at all, and that makes everything sound tighter and more accurate. There's no fluttering port noise, nor in fact any kind of annoying noise at all, nor is there any shortage of SPL.

The simple fact is that these are lovely monitors. I listened over several days to a very wide array of content and picked not only a bunch of lovely little production touches but also some rather shabby production efforts where I expected far better. There's this wonderful sense of openness to the imaging, and an amazingly fast response to transients which gives you detail you just don't normally hear.

Helpfully enough, Neumann includes in the box some pretty good documentation on suitable setup angles and different configuration options. It's like they actually care about end users getting the best from their product, and it's nice.

Neumann is pushing the definition of what constitutes a nearfield monitor with these – the waveguide fits the bill while the rest of it is way overspec'd. They're a bit ridiculous, but that doesn't matter because they're just so damn good. The only vaguely downside here is a simple one – because the waveguide is fixed, so too is the intended orientation. Horizontal takes more real estate on the desk than vertical, which is a pain if you use dual screens as I do. They just fit on my desk, but if they were permanent fixtures I'd definitely consider a wall or ceiling mount option (there are several available).

I think with something like buying studio monitors there are a couple of factors at play, namely subjectivity and the law of diminishing returns. Liking a studio monitor is a pre-requisite for me to even consider buying it, but so is value. You can buy a pretty decent set of monitors for not much money nowadays, and double the spend doesn't necessarily guarantee double the performance. \$6K needs to buy serious awesomeness, and when you spend it on KH310As that's exactly what you get – they're gorgeous.



BRAND: NEUMANN MODEL: KH310A  
RRP: \$2999 PER SPEAKER INCLUDING GST.

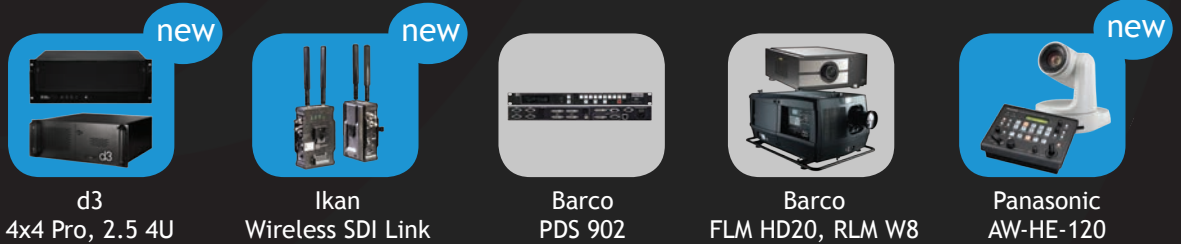
PRODUCT INFO:  
WWW.NEUMANN.COM

DISTRIBUTOR:  
WWW.SENNHEISER.COM.AU

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# HIGH END SYSTEMS

## SHAPESHIFTER C1 & W1

SHAPESHIFTER FROM HIGH END SYSTEMS WOULD HAVE TO BE ABOUT THE WORST WASH LIGHT IN THE WORLD - IT'S FAR TOO TIGHTLY COLLIMATED AND THE LIGHTFIELD GETS ALL PATCHY WHEN YOU ZOOM IT OUT. BUT ALL THAT'S OKAY BECAUSE SHAPESHIFTER IS A BEAM LIGHT.

As beam effect lights go, it's a pretty unique one too. As the description on the website says, Shapeshifter uses "7 independently controlled modules housed in one moving fixture". Now, by "independently controlled" they don't just mean colour. While the central module is fixed, the six modules surrounding it can be individually panned and tilted 36 degrees as well. All up, the fixture uses 126 Cree XPE2 LED engines – the C1 model has 42 each of red, green and blue while in the W1 all the LEDs are white. Putting this in numerical terms, the C1 model is good for 24,000 Lumens and the W1 puts out 27,000. Putting it in "what's that actually mean in the real world?" terms, it's HEAPS bright.

The beam angle is 10 degrees and in my mind this kind of applies to the individual engines or modules rather than the fixture as a whole. If you tilt all the

modules outward simultaneously then the beam from the fixture obviously gets a lot wider than 10 degrees. On the C1 model the colours are externally homogenised – this means you can pick the colour of each engine. Like with probably every beam light ever made, you really need haze or smoke to get the best from the Shapeshifter.

Both the C1 and W1 models include the indigo highlighter function we've seen on several other High End fixtures recently. Rather than forward facing LEDs, the indigo LEDs face backward onto an internal reflector at the back of the head. Sounds complicated, but works nicely to light up the guts of the fixture – it looks very tech. With a lot of exposed moving parts you'd be forgiven for thinking the fixture is delicate, but having seen one treated abnormally harshly it seems to be pretty resilient.

The power supply is universal 100-240V and feeds from a PowerCon connector. No loop through leads me to think it probably pulls a bit of current, but I can't find a



spec to support my theory (nor can I find my meter to test it), so I could be wrong. 3 and 5 pin XLR provides DMX/RDM input and loop through, and the 26.9kg fixture ships in a single head roadcase.

DMX control has a few different modes, and while you can choose to have every parameter available at the console it makes controlling the thing time consuming. The "reduced" mode replicates movement and colour across all the modules, but still provides 150 user macros with speed and crossfade control – more than enough to pull out a show's worth of interesting looks. The macros make different modules do different things, so you get the unique looks without needing to spend hours programming them. Cool. You can use identical fixture profiles to control the C1 and W1 units – changing colours on the C1 sees white LEDs in the corresponding places react accordingly on the W1.

Pan and tilt are surprisingly fast considering the size of the head. Shapeshifter is not what you'd call compact, but with handles on the base and on the yoke it's quite conducive to being handled. Note that there's exactly one way to put it into the case.

Because you can control macro speed it's possible to get some very subtle effects from the Shapeshifter in addition to all the big bold ones. What it's not possible to do is make it sound subtle – there's no ignoring the really loud cooling fans which ramp up and down depending on output. But really if you plan to stick a dozen of these into a quiet theatre show maybe you need to go back to lighting design school since it's plainly the wrong application. Shapeshifter is a light for big venue concerts, and in such applications not only will it work very well, but it's loads of fun to use too. I like it a lot.



BRAND: HIGH END SYSTEMS  
 MODEL: SHAPESHIFTER  
 RRP: SHAPESHIFTER W1 AND C1 ARE THE SAME  
 PRICE - \$10695 EACH INC GST (INC CASE).  
 PRODUCT INFO: WWW.HIGHEND.COM  
 DISTRIBUTOR: WWW.LEXAIR.COM.AU

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# CANON XEED WUX400ST



## WUXGA SHORT THROW PROJECTOR

I REMEMBER SOME 20 YEARS BACK LEARNING TO ALIGN THE CONVERGENCE OF A 3 GUN CRT VIDEO PROJECTOR – THE SETUP AND ALIGNMENT PROCESS TOOK HOURS AND YOU WOULD END UP WITH A NOT-VERY-BRIGHT-OR-WELL-FOCUSSED RENDITION OF AN IMAGE WHICH PROBABLY ARRIVED ON COMPOSITE VIDEO. Oh, AND ALL THAT WAS AFTER YOU GOT THE FIFTY-SOMETHING KILOGRAM PROJECTOR INTO EXACTLY THE RIGHT POSITION.

The WUX400ST is an elegant example of how far we've come with video projection and lens technology. It's a 4000 Lumen unit, so straight off the bat it's very bright for a projector weighing in at just over 6kg. It uses an LCOS reflective display TFT active matrix panel to achieve a native resolution of 1920x1200 – that's a 16:10 aspect ratio in case you wondered. Contrast ratio is 2000:1, and there's an eco mode which allows you to drop the output down to a bit over 3000 Lumens.

Now while 4000 Lumens is plenty bright and 1920x1200 is plenty of pixels, some occasions call for more. The WUX400ST has this covered with easy "stackability",



and perhaps even more clever, an integrated edge blending facility. There are even built-in test patterns to make setup easier.

So far as video inputs go, there's HDMI, digital and analog RGB on a shared DVI port, and analog RGB on D15 which can also take component signals with an adapter cable. Two 3.5mm mini-jacks allow you to route audio to the internal 5W speaker (which like every internal speaker on every projector is best avoided).

As well as video inputs there's a USB port via which you can load PowerPoint (and other format) files and play them directly via the projector. This effectively saves you needing a computer and hence saves you not only the cost but also the ongoing maintenance, software updates and other associated headaches. In what could be considered a bold move Canon had not included any kind of composite video input on the WUX400ST. I don't think this is an oversight or anything, but more a reflection of what a lousy standard composite video is compared to all the options

BY JIMMY DEN-UDEN

developed since. No composite is no big loss to me, but could catch out the lazy AV tech.

I like Canon lenses, and especially the one attached to this projector (even if it doesn't have a zoom). From 1.2m throw distance you can project a 100" image, which is pretty radical when you consider the optics required to do this. More so when you realize that unlike the short-throw lenses of yesterday, this one doesn't require the projector to be centred vertically on the screen. Or even horizontally in fact, thanks to some groovy lens shift capability (0% to +75% vertical and +/- 10% horizontal). Lens shift and focus are all manual operations, reflective of the product being classed as an install device. Electronic keystone and zoom functions are also available, but with optics this good why would you use them?

With the increase in "connected campus" technology and the like, it's little surprise that Canon has integrated support for Crestron RoomView into the WUX400ST. This allows for remote monitoring and control over the projector via the RJ45 ethernet port. Additional control via RS-232 is also available on a D9 port. Again catering to modern demands, the "picture by picture" allows two sources to be displayed adjacent to each other simultaneously.

So there you go – if you only care about composite video then the WUX400ST probably isn't an ideal choice, but if you want short throw projection with great control options, install flexibility and low long-term cost then it's a bit of a winner.



BRAND: CANON  
 MODEL: XEED WUX400ST  
 RRP: \$5699 INC GST  
 PRODUCT INFO:  
[WWW.CANON.COM.AU](http://WWW.CANON.COM.AU)  
 DISTRIBUTOR:  
[WWW.ALLOYS.COM.AU](http://WWW.ALLOYS.COM.AU)  
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[WWW.XITDISTRIBUTION.COM.AU](http://WWW.XITDISTRIBUTION.COM.AU)



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BRAND: CLEAR-COM  
MODEL: HRM-4X & HKB-2X  
RRP INC GST: HRM-4X \$4655.00,  
HKB-2X \$2815.00, S-MOUNT \$775.00  
PRODUCT INFO: [WWW.CLEARCOM.COM](http://WWW.CLEARCOM.COM)  
DISTRIBUTOR: [WWW.JANDS.COM.AU](http://WWW.JANDS.COM.AU)

BY JIMMY DEN-ODEN



Two remote stations are what's new – the HRM-4X and the HKB-2X. Both stations are four channel devices, with the obvious difference being form factor. The HKB-2X is a flush-mount station which can be wall mounted, or installed into an optional S-Mount stand for desktop use. The HRM-4X is a 1RU 19" rack mount device.

Like the rest of the HelixNet range, both the new stations employ bright yellow OLED displays, and all the keys are softly backlit when inactive and bright when active. The display on the HKB-2X can be tilted up and down a little. Both stations include a speaker and facility to connect a stalk mic, so can be used as speaker stations. Alternatively a headset can be used via a 4 pin XLR on the front panel.

While the HRM-4X has four displays (one per channel), the HKB-2X has only half this number. Still, a "Shift" function allows the user to access another two channels on a second page. Each HelixNet master station supports 4 channels, and up to 3 master stations can be joined to provide up to 12 partylines.

The HRM-4X adds a couple of extra features too – the first of this being that it can act as an expansion panel to a master station, effectively giving you access to more partyline channels from one station. It also has a program input and stage announce output on the back, as well as 9 pin D connector with GPIO connectivity. If you're handy with a soldering iron and make up the right cable, you can use it as a radio comms interface, even for a half-duplex system. That's really cool, since the way a normal partyline works kind of precludes using anything other than a full-duplex base. The fact it all fits on one connector makes it tidy too.

I've left perhaps the most noteworthy aspect of both the HRM-4X and HKB-2X 'til last, and that's connectivity. Both panels include powerline connectors, so you can run them off the master station just like belt packs. They also include RJ45 connectivity with PoE. So you can not only deliver comms signals to these panels via standard Ethernet infrastructure, you can even power them remotely from the network. If you prefer to connect via Ethernet but power locally, that's fine too since there's a power supply included with each station.

All up the new stations are good and logical additions to the HelixNet line, and in my eyes open up its market scope beyond theatre to include users like small OB providers. Really the focus of HelixNet has always been to provide a better partyline system without needing to change infrastructure, and the new additions to the range add scope to do this. With the scope Ethernet connectivity offers, I think it will be exciting to see where the platform goes from here.

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Optus has been granted 700MHz early access commercial licences and technical test licences in selected areas by the Australian Communications and Media Authority ahead of Optus' national 4G 700MHz network roll-out from January 2015.

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Commercial pilots and technical trials will take place in multiple locations around Australia from October until 31 December 2014.

Please visit [optus.com.au/700techtrial](http://optus.com.au/700techtrial) to check locations.

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There is a small risk of interference for people using wireless microphones and wireless audio devices that operate in the 703–713MHz or 758–768MHz frequency range in the locations we are operating in. These impacts might be:

- Background noise
- Reduced range of operation
- In rare cases, complete loss of service

Large scale master antenna or distributed TV systems may also experience minor disruptions.

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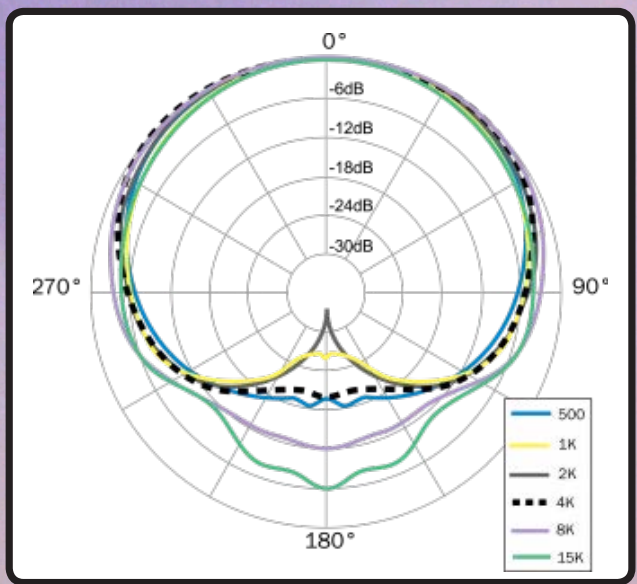
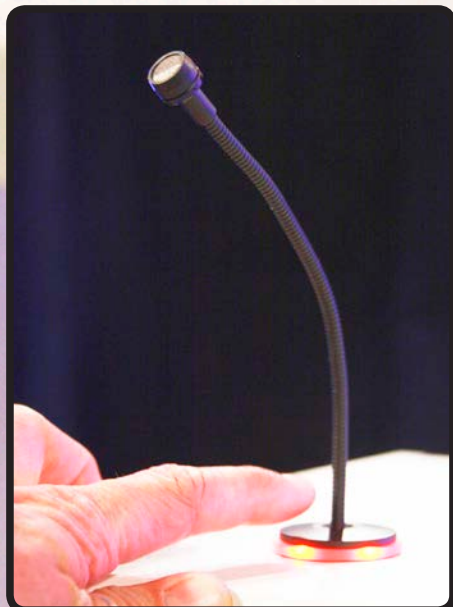
OPTUS19415/QP/4

# EARTHWORKS IM SERIES

BY JIMMY DEN-ouden

## HIGH DEFINITION INSTALLATION MICS

WHILE MANUFACTURER EARTHWORKS IS WIDELY KNOWN FOR THEIR MEASUREMENT MICROPHONES, PERHAPS LESS WELL KNOWN IS THEIR RANGE OF INSTALLATION MICROPHONES. THIS PIECE FOCUSES SPECIFICALLY ON THE IM SERIES GOOSENECK MICROPHONES FOR TABLE OR CEILING INSTALLATION. THE IM SERIES IS ELEGANT. IT'S THE SORT OF MIC YOU MIGHT USE WHEN ADDRESSING THE UN (OR COURTS, PARLIAMENT AND GOVERNMENT IN AUSTRALIA).



BRAND: EARTHWORKS  
 MODEL: IM3, IM6, IM10, IM12  
 (IM12 ON SPECIAL REQUEST)  
 RRP: RANGING FROM \$1199 INC GST  
 FOR THE IM3 TO \$1309 INC GST  
 FOR THE IM10.  
 PRODUCT INFO: [WWW.EARTHWORKSAUDIO.COM](http://WWW.EARTHWORKSAUDIO.COM)  
 DISTRIBUTOR: [WWW.AUDIOBRANDS.COM.AU](http://WWW.AUDIOBRANDS.COM.AU)

Four different gooseneck lengths are available (3, 6, 10 and 12") and colour selection includes black and white, with a silver model in the works. Designed specifically for installation, mounting is pretty simple. Drill a hole into your intended mounting surface, push the base through, and secure the mic with the included washer and locknut. Then plug in an XLR and you're done. The only real difficulty is that you need to get behind the panel to secure the locknut, but this is likely to be the case with most products of this nature. The upside is that this can make it much harder to steal.

For applications where switching is required, the IML series includes a touch-sensitive ring with red/green LED illumination. The logic inputs and outputs on the IML series can be used to trigger events in an audio DSP, or even trigger automated video camera shot recall – anything a logic trigger can control.

The IM series are very much premium grade products, and they're priced accordingly. This is probably not the mic for your local school hall lectern or church, and nor is it claiming to be. So why would you fork over the extra dosh? Well, a few reasons...

Let's start with specs: frequency response is 30Hz to 30kHz +/- 2dB @ 30.5cm. That's very wide range response, and made all the more impressive when you realize it's pretty well totally flat across the pattern, even at high frequencies. 60 degrees off axis looks largely the same as dead-on axis with only very slightly less sensitivity. You can see why they call it "high definition". The specification claims "an impulse rise time of no longer than 25 microseconds, and a total settling time (inc rise time) of no longer than 120 microseconds".

The pattern is cardioid, and quite wide cardioid at that, yet with good rear rejection. Hard to explain, so just look at the polar plot. If you deploy an IM series mic on a lectern or something similar, you'll notice the difference the pattern makes when you have multiple presenters or speakers standing behind it.

The benefits of the wide pattern become even more apparent when using multiple mics. Each mic yields more coverage, so you need fewer of them. The first benefit of this is potentially a reduced scope for phase errors between mics. The second is that you require less cabling and DSP to connect and process inputs. Analogue IO tends to be one of the more expensive parts of most modular DSP systems, so significant savings can be had here, and on the labour costs of running cabling.

If RF interference is like that unwanted guest who shows up at your party to ruin things, the IM series is like the dude standing at the front door refusing entry. The mics have good RF rejection characteristics, and also exhibit minimal handling noise when manipulating the gooseneck. Phantom power is required and it needs to be full +48V phantom power for the mic to perform correctly (not every mixer provides the full voltage). Use a decent console or DSP and you won't have a problem.

Last thing to know? The IM range has a 15 year warranty. If Earthworks are willing put that much faith in their product, then you probably can too.



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**CX NETWORK**

November  
2014

# ROAD ★ SKILLS



Robbie Williams unleashed his devilish charisma upon Australia with his Swings Both Ways tour, a show that was ultimately a million dollar RSL tribute concert to swing & the big bands. It was big, shiny & slick. The songs were familiar, the comedy routine worked & there were plenty of back up dancers



*Editorial by Cat Strom*

*Photography - Troy Constable & Ashley Mar*



# Robbie Williams Swings Both Ways tour

The stage, designed by Stufish and built by Brilliant Stages, was lavish and multi-layered, transforming in appearance from an Art-Deco hotel, to a 20's style club and a luxurious ocean liner, and was surrounded by a massive, curved Austrian drape, all of which set the tone for Williams' sumptuous Swing Era extravaganza and big band sounds. A 1.2m high elliptical catwalk extended 18m from the main stage into the audience to a B-stage.

Like the rest of the show, the lighting was theatrical more akin to a Broadway show than a rock concert. The show was tightly choreographed and so was the lighting, there's no flash and dash here. All of the lighting that hangs from trussing lives in the truss and is transported

that way. In fact the entire production is neatly designed to travel securely and erect swiftly.

"A lot of time was spent getting the looks just right," remarked Keith Duncan, lighting operator on the tour. "There is a very large video element to the back of the stage so there are a lot of tie-ins to make sure the whole visual concept works."

The impressive upstage scenic LED wall was 22.8 metre wide by 10.8 metre high and made up from XL Video's Pixled F-12 product. Either side are portrait orientated side screens for IMAG, which are made up from Radiant MC-7T. Both LED types were housed in XL's custom touring frames.



The lighting was designed by Mark Cuniffe and was pretty much a Martin coup with 79 x MAC Quantum LED Wash, 53 x MAC Auras, 30 x MAC Viper, 24 x MAC Viper Performance, and 4 x Martin MAC Viper Air FX.

The three 'chandeliers', each with three tiers of 'crystals', dominated the set as both scenic elements and lighting tools for back light and visual dressing. Each chandelier fascia is constructed from plastic panels concealing Martin LED LC Strips. These are run generically from the lighting console via DMX as well as a Catalyst media server for visual variety.

As Robbie interacts a lot with the audience there were four audience trusses packed with Quantums and Vipers. The MAC Auras were used to dress the fascia of the set along the front edge of the stage.

"The Quantum LED Washes are a good workhorse LED wash light and are very reliable," commented Keith. "Their zoom is even and smooth plus they have a nice colour rendition. They are primarily used to light the drape and also the audience. We have three flavours of Viper that all work well together brightness wise. Again, reliability has been great. The Viper Performances are used to keylight the dancers and band using the shutters quite heavily to keep the light off the drape when it is down."

Over four hundred Martin 300mm Tripix LED strips run around the edges of the runway and along the front edge of the stage, adding another layer to the visuals "Practicality was very much part of the design process," said Keith. "For example, the stage tiers' fascia have bobbins and keyholes for the lights to slot into so it's very quick to rig and de-rig."

Production manager Steve Ireland has a talent for packaging so all of the dimmers are in carts, as is the video equipment and amplifiers, and the crew reckon Steve's genius shaves them about an hour off load in and also load out.

The show wasn't totally a Martin triumph as there were 51 x Clay Paky Sharpys, 12 x Chroma-Q Colour Force, half a dozen VL3500 FX along with Robert Juliat Victor and Ivanhoe follow spots.

Out front were two full sized grandMA2 with a MA2 light which is used on stage for focusing. Everything uses ArtNet generated FOH and sent down the system distributed to each of the locations via Ethernet, with boxes locally on the trusses and under the stage to distribute the DMX.

The audio, a joint affair between Britannia Row and JPJ Audio, utilized a full complement of L-Acoustics K-Series cabinets, numbers depending on the venue.

"Basically all of the loudspeakers and amps have come out of JPJ Audio with the infrastructure coming from Britannia Row," explained Josh Lloyd, systems engineer. "The crew are all English – it's basically reciprocating the deal we did with JPJ Audio when Pink was touring."

The standard design utilizes K1 with Kara down fill cabinets on the main and side hangs, K2 on the rear hangs, flown sub hangs of K1-SB with a ground sub array of SB28s built into the set. There is a frontfill complement of Kara, Arcs and 108s also built into the set.

FOH audio engineer Simon Hodges comments that the L'Acoustics K-Series has a great broad band throw of all parts of the spectrum.

"With the K-Series you don't miss certain elements, such as the warmth and low-mids as well as the highs and super-highs, at the back of the room like you do with other PA's," he said.

Simon was contracted to the tour due to his experience mixing classical and swing music although he does inhabit both ends of the multicore by occasionally running monitors for rock'n'roll.

"This production is certainly different from a rock show and during rehearsal I was initially mixing it like a jazz show but it soon became apparent that was too safe

and gentle," explained Simon. "Even though it is a swing show, it's set in an arena full of Robbie fans who want a bit of high energy. I would say it's a hybrid between a swing and a rock show; the energy from the bass and the drums is still there despite the fact it is overall, fairly gentle and natural sounding."

Simon wasn't at all perturbed by the fact that Robbie is often front of the PA saying that a carefully chosen microphone capsule, as well as a very experienced artist, is the key.

"Robbie has a Sennheiser SKM 5200 microphone with a 5323J capsule, especially designed for him," added Simon. "It suits Robbie's voice very well and rejects the PA and spill from instruments well. In total we have 10 channels of Sennheiser SKM 5200 series handheld microphones with MD 5235 capsules and 22 channels of 2000 series in-ear monitors."

Just in case, Simon has an inserted parametric on Robbie's vocal group but he reveals that he has hardly had to use it.

On every tour he has done for the past six years, Simon has chosen a DiGiCo SD7 console stating that it sounds great and he naturally connects with the control surface.

"It also has a high channel / bus count which always seem to be required on the productions I work on," he added. "On this tour we have around 200 channels/buses all in. We have a nicely integrated shout system where the techs can all talk to each other, but also that integrates with a talk system with the band. We also talk to stage management and automation from here so there's a lot of routing going on. I think most consoles wouldn't have the capacity to do all of this."

Effects used by Simon include a Bricasti M7 reverb which he declares as amazing, making a massive difference to the sound on this show.

"I have one on brass and one on the main vocal and it's gorgeous," he said. "I also have tc M6000 doing snare, strings, backing vocals and acoustics."

Monitor engineer Pete McGlynn also opted to use a Digico SD7 console, due its' to ability to handle the input count of over 100 channels as well as a multitude of mixes

"Simon and Peter are gain sharing which means the package is very small," explained Josh. "We have two Digico SD Racks as well as a Digico Mini SD Rack with no splits. Considering our channel count and the amount of RF we've got it's a pretty small footprint."


All of the band are on Sennheiser 2000 series In Ear Monitors and apart from a drum shaker and a shaker plate for the bass player, there are no speakers on stage.



PA Perth

The shows large distributed RF system was designed by George Hogan. George provided custom amplifiers and distribution system for the tour to handle the large performance space as well as the challenge of the large video wall behind the stage. The show is utilizing over 70 channels of RF for the band and a vast array of wireless instruments and vocal microphones, which takes careful coordination each day.

"Robbie's In Ears are covered by an antennae flown from the cable bridge which is a system George designed and gives very good coverage," added Josh. "There's an amplifier after the transmitter which helps with providing enough gain for the long cable run on that."



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## 20 Questions with Brad Alcock

**Brad Alcock is one of the directors of BAAC Light, a lighting and projection production company that specialises in lighting design, programming and operation. However he has been busy out on the road for the last seven weeks as the touring LD for Tina Arena's Australian tour which was designed by Bruce Ramus. The tour visited a wide selection of Australian cities and venues with a rig including thirteen Martin MAC Vipers, twelve MAC700, twenty Robe 600, 24 6.25mm Yes LED panels, a Panasonic 20k projector, a Road Hog 4, a Hog full Bear 4, and a stack of analogue gear.**

"I have been fortunate enough to be under Bruce's wing for the past 12 months," commented Brad. "It's so easy to think you know everything about lighting but it's not until you are exposed to an artist such as Bruce, who covers so much more than how many Sharpys and distracting lights can fit onto a truss, that you realise the process of design takes great care and attention to detail."

"Bruce is a very particular about his designs; an element that is fun on the road trying to keep the show as close as possible to the original design even when unexpected hurdles are thrown at you! Bruce is very trusting in his touring LD's and has complete confidence that we will keep that vision."

# TINA ARENA tour



## What are the three best things about leaving the office and going on the road?

Firstly, it has to be working with the performer, in this case Tina and her team of family and friends. Tour life has its own funny and sad stories but also, depending on the tour, an extremely close family feeling, one that I'm happy to say was alive and well on this tour.

Close second and really an extension to above, is the crew as a touring LD's crew will generally change on every job and sometimes this dynamic can be hard to manage. I was very lucky this trip to have a crack team.

This one is not strictly show related and is a little hush-hush but I think, like all touring crew, we become our own travel and accommodation critics. In the case of this team we had a tradition and only after two Pale Ales had been consumed, would this tradition be allowed whereby we gave the accommodation we were in a rating out of ten and a short, always humorous, statement on the accommodation led to some extremely funny observations and experiences.

## 2 And the three worst things?

I think I can cover all 3 things and more in one item - the Tour Bus. Like all crew the time eventually comes that you have to do a few legs in a tour bus and in our case we had Tamworth to Canberra and Canberra to Newcastle. I'm not sure how to describe the tour bus but I'll give it a go ..... F\*#ED!! All expectation of sleep can be dismissed and replaced with a few facts:

1. A person cannot sleep over the axial of a bus going over rough road.
2. Trying to sleep half a meter away from a Generator located under the floor is mind numbing.
3. A bunk two feet high and forgetting the bunk is two feet high will lead to an imprint of Panasonic in your forehead from a roof mounted player.
4. A bunk with no sides a meter in the air and a bus driver with dodgy cornering skills will place you on your arse in the aisle.
5. Going for number 2's on the bus is banned for obvious reason and I can assure you after a few beers going for a leak on a moving bus is a fine example of how many walls can you brace against whilst trying to aim.

## 3 What do you never leave home without when working?

I need to stay up to speed with what is happening at BAAC Light so I always travel with a MacBook Air and Dropbox. For the show I always have backups galore on memory sticks and Dropbox. These days most of the production managers, including ours, keep everything up to date via Master Tour. This App is on our mobiles so basically we have a continuous line of communication to what is happening production wise.

## 4 On this tour, what was the worst thing you came up against?

We really had a golden run equipment wise on tour. I think the only real issue we had was a truck that had its lid ripped open on the Gold Coast and whilst a picture I took made all the rounds, I can't speak highly enough of our driver. Dark loading docks at 0200 in the morning in the rain are not a fun place to get out of for any driver. Our ATS trucks were always on time and in place when we arrived on site.

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In Perth, our first show was about one hour from doors when one of the legs on our 120amp house feed decided to break a little loose and shutdown half my rig as I was trying to finalise things. Thankfully I was on UPS but had a brief WTF moment as my console threw up flags galore as all my DP's shut down. The Perth guys had a sparky onsite ASAP and we managed to have the system up just before doors.

## 5 What was the best thing about this tour?

Like most tours it has to be the people we meet along the journey. My team were just hilarious and always had a good vibe about them even when we were under the pump. They only had a few complaints - catering, beer selection, hotels, travel arrangements, room temperature, number of loaders, how far the stage was from the truck, anything political, anything not political, anyone walking on the side of the road, the audio guys (we love you Guto and Dickie) - in short, they are the reason this industry is fun.

## 6 Which venue was your favourite and why?

I have a little bit of bias here as it's also the venue that's currently fighting for its life in Melbourne - The Palais for which I have always had a soft spot. It has its own vibe that only buildings of its age can give you. Venues with all the bells & whistles can't match this ever and I think this also makes the experience that much better. The Palais Theatre is currently fighting for its existence in Melbourne while the politicians try to work out if it is better to build some more office blocks there but I have no doubt the entire industry will make a lot of noise to see it saved. Please support the old girl at <https://www.facebook.com/iLoveMyPalais>

## 7 Which venue needs a bit of an overhaul in your opinion?

I was actually really happy to see that all the venues were servicing their markets really well. It's very easy to forget these places are doing shows every night and I think it's very easy for a touring crew to pass judgement very fast. My only pet peeve and always has been, is the process of induction for some venues I know. As an industry we have to be aware, but a 30 minute video telling me how to leave a burning building at 0700 after a few back to backs can get a little annoying.

## 8 What would you have changed in the lighting design if it was up to you?

Actually, very little. The process of design is a creative one, it's a connection between multiple minds - in this case Tina, Vince and Bruce over a number of wines and dinners - so I think the design was perfect based on the productions brief and limitations.

## 9 Why do you use a Hog for control?

Holden or Ford. I think anyone who has been doing this for a number of years knows that eventually you stop getting excited about how many flashing lights or how good your console looks. I was lucky enough to be introduced to Hogs back in the mid 90's and have grown with the platform ever since. Like all consoles

it has its good and bad days depending on PEBCAC "problem exists between console and chair". BAAC Light owns a number of Hog 4 consoles so it's a platform I know really well.

## 10 Which lighting product on the tour stood out as the best?

I can't say I really had a favourite as each element had its own job to do and when they all worked together perfectly, we had the best result for the punters. Sorry, I'm just not a gear nut so I have to say the Bunker lights as they added a beautifully simple non-technical element to the show.

## 11 Which recent piece of lighting gear do you view as a game-changer?

I guess it would be networking and the ability for the LD to do all preset updates on stage via tablet.

## 12 Does Tina have any specific lighting requests?

Tina knows we are only interested in making her look as good as possible and to that extent, will only make a request if she feels the need to do so for her audience or a creative reason. She works closely with Bruce at the design stage of the tour.

## 13 Who do you admire in the industry and why?

I don't think this boils down to any one person as I have been so lucky to be around people that have given me the ethos that I work to as an LD. These people are not always in lighting and extend from production managers to audio engineers to television producers to backline guys.

## 14 What is the most outrageous thing you have ever done on tour?

What happens on tour stays on tour. I did an outdoor gig at the Perth Zoo one night and I won't say the job, but will say my systems tech was probably two days out of WAAPA. We would have been no more than 10 mins from starting the show and I was backstage having a yarn with the producer, when that poor kid comes flying across the stage in a mad panic screaming "The dimmer racks are on fire" and proceeded to look stunned at me. I took one look towards his dimmer racks and proceeded to say the only thing that came to mind "Well you better put them out". Well it was funny for me and needless to say that's when you earn your coin trying to get a system back together and still do a show.

## 15 What invention would make your job easier?

A decent output moving head data projector and I mean in the 20k range with a good zoom, decent weight, and a decent size. We all know it's only a matter of time but the first manufacturer to crack that will be on a winner.

## 16 Which band would you most like to light and why?

I'm sure I could mention plenty of names here but I won't as I enjoy a huge variety of music, including Tina's, so I think I have to say any band I feel a connection with would be amazing.

RIGHT: LUKE THEUL AND LACHIE SINCLAIR CAUGHT IN THE LINE-UP SLIDE FOR THE PANASONIC 20K.



BELOW: LUKE THEUL FIXES A SMALL PROBLEM WITH ONE OF THE 48 WAYS IN TAMWORTH.



PIC OF THE TEAM AT WORK UNLOADING THE TRUCK IN ADELAIDE.

**17 Do you have a favourite mantra to get you through the day?**

I think my main one is to just keep it a happy working place. Everybody works so much better when good humour happens.

Another is 'if it was easy everyone would do it'.

**18 What do you think of the Australian touring industry at the moment?**

Our market is always hard for Australian bands to make money in. Touring is so expensive and the distance between cities is great so getting all that gear around is very pricy. But for all the issues, we have incredible diversity in the market and we always have new promoters, bands and ideas to help get the production across the line on budget and make our client some money on the way.



BELOW LEFT: BRAD IN THE BAAC LIGHT VIZ SUITE DOING SOME PRE VIZ WORK. BELOW RIGHT: BRAD AT FOH BEFORE THE SHOW.

**19 If you could have the most perfect light possible, what would it offer?**

It would be able to bend light around corners. Seriously I think as an LD we just like reliability, ease of setup for our crew and a good range of feature on board that meet our expectations.

**20 What did you really want to be when you grew up?**

To be honest I think I have landed really well doing a job I really enjoy. But If I had to answer, I would be an airline pilot or a racing cyclist.



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# alt-J

**Alt-J's real name is Δ, which comes from the Greek letter "delta" and is used as the mathematical symbol for change. However it's pronounced "alt-J" because if you press alt + j on a Mac computer you get the symbol Δ. Now you know.**

Last time the British indie outfit were in Australia, dates sold out in just five minutes. So when Frontier Touring announced just two dates – Sydney's Enmore Theatre and Melbourne's Forum – to promote the band's new album, tickets disappeared fast.

Dubbed by the British press as the "new Radiohead," following in the steps of titans like Coldplay and Muse, Alt-J deliver a hauntingly ethereal sound.

FOH engineer Lance Reynolds happily used the in house PA systems of Nexo in the Enmore and the JBL VerTec rig in the Forum, although his preferred PA would have been an L-Acoustics line array. However he did get to specify his preferred console of an Avid Profile as did monitor engineer Ron Sharpless who used a DiGiCo SD11.

"One of the main reasons that I chose the Avid desk is that I can easily record a multi-track of the show...and just as easily play it back through the desk," commented Lance. "Each day I play the tracks from the previous show through the desk, using that to tune up the system. Occasionally, yesterday's tracks become today's sound check when the band is unavailable to do it for real. It's a great tool, and though many desks now have a similar feature, not all of them get it done as simply as using a laptop with a firewire cable."

For the most part, Lance uses the stock plug-ins on the Profile desk. However, he runs his mix through a combination of two of his favourite pieces of outboard gear; a Klark-Teknik DN370 EQ and a Smart C2 stereo compressor.

"The stock plug-ins work perfectly well for me and if I build a mix using just those, it's really easy for me to walk in anywhere and pull my mix up as everyone has the stock selection," he said. "I don't think that I do anything too special or crazy. It's just reverbs and delays, placing the instruments where they ought to be and making a

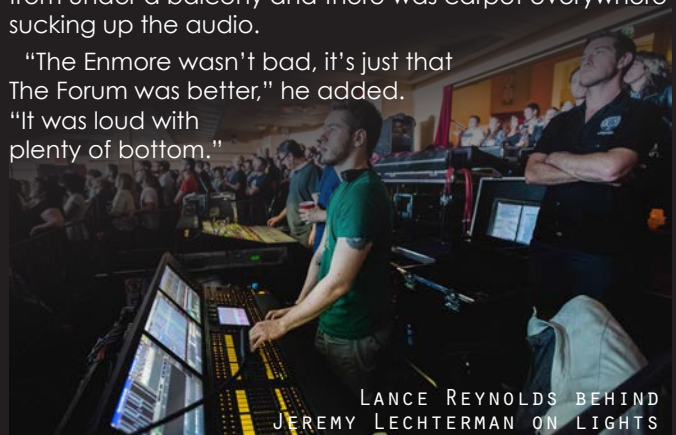
nice, clear sound. The KT and Smart on the stereo buss offer the system a little analog magic".

As well as an expected selection of microphones, such as Shure SM57's on snare drums, Lance likes to use a Shure SM91A with an EV N/D868 on kick drums.

"To me, the 91A sounds better than every previous version of the 91, and I could probably just use that mic alone," added Lance. "As for the N/D868, many people walk in and ask what that microphone is. I've been using it for a long time having put it through a shoot-out years ago. I have also been trying out some of sE Electronics microphones as they have a nice range of condenser microphones. I'm using the e1a on the snare bottom, the e4a on the glockenspiel, and the 4400a as a drum overhead. We're not using actual guitar amps so the microphones of choice for guitar amps are out the window now! We're using Kemper Profiler guitar amps that have direct outs, though I did create some amplifier profiles using a Sennheiser e906 and an sE VR1 ribbon mic."

Lance commented that the band translate better in a large venue as their music suits a big space with a lot of the songs becoming epic. Of the two Australian shows played, he preferred the Melbourne show as he found it sounded clearer which he believes may have something to do with the fact that at The Enmore he had to mix from under a balcony and there was carpet everywhere sucking up the audio.

"The Enmore wasn't bad, it's just that The Forum was better," he added. "It was loud with plenty of bottom."



LANCE REYNOLDS BEHIND  
JEREMY LECHTERMAN ON LIGHTS

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# AUSTRALIAN LAUNCH CLAY PAKY'S SUPERSHARPY, MYTHOS & STORMY

Show Technology held the Australian launch of Clay Paky's SuperSharpy, Mythos and Stormy in Sydney and Melbourne in mid-October. Special guests from Clay Paky were Alberico D'Amato, Head of International Sales, and Giulia Sabeva, Sales Support Engineer, whilst Glyn O'Donoghue also came from MA Lighting.

"It's very humbling to see the who's who of the entertainment lighting industry turn out to see our new products," remarked Mark McInnes, National Sales & Marketing Manager for Show Technology. "We are grateful so many people came to the events especially during what is one of the busiest parts of the year. The support of our customers and our lighting colleagues means everything to us."

"Of course our suppliers are always there to help us. Many thanks to Alberico and Giulia from Clay Paky as well as Glyn from MA Lighting for coming such a long way to be part of these events."

The Sydney event was held at Fox Studios whilst the Melbourne event was held at Dockland's Alumbra venue. Show Technology collected some customer comments on the Mythos, SuperSharpy and Stormy.

## SYDNEY

**Neale Mace, Managing Director, Entertainment Installations:**

"Although we'd seen all these fixtures at Clay Paky earlier in the year, they were very impressive in an actual "show" environment. The Mythos is a great looking, feature packed unit that delivers great output. Amazing zoom that creates beautiful in-air effects. The units wash capability is also a great bonus."

"As for the SuperSharpy, I can't believe they've been able to make something punchier than the original Sharpy - the beam in its smallest diameter looks like a solid shaft."



STUART ANDERSON, JAMES MOORE, ADAM WHITE, PAUL COLLISON AND GIULIA SABEVA

NICK MCFEE & IAN ANDERSON

ALBERICO D'AMATO & EMMANUEL ZIINO

EMMANUEL ZIINO & JEREMY KOCH

MATT TRUNCHEON, PAUL WALTON & EMMANUEL ZIINO

CAROLINE & NEALE MACE WITH ALBERICO D'AMATO

"I've been wanting to see the Stormy on a proper stage and I wasn't disappointed. Brilliant white flash and great strobe colours as well. I also really like that it looks like a "normal" linear strobe with reflector.

All in all, a great range of new products from Clay Paky."

BY CAT STROM



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**Mark Hammer, Lighting Designer, Hammer Lighting**

"Clay Paky seem to have raised the bar to another level with all three fixtures. They seem to be able to get that little bit extra that makes each fixture a mouth-watering addition to any lighting design. And it's not just the effects that the fixtures bring to the table, but that fact that each are quality luminaires as well."

**Paul Collison, Lighting Designer**

"Wow....I had seen a prototype of the Mythos a few months ago and struggled to understand what it actually was. Now having seen a full production version, I'm flabbergasted. One of the first truly multi-functional lights. It's a beam and spot in one, and not just a half-baked version of either. It's brighter than a Sharpy but with the beam definition of a top end profile. I think the Mythos is really going to redefine the roles a lighting fixture has within a lighting design."

"I am really impressed at the industrial design of the Mythos and SuperSharpy. Finally a manufacturer who realises their lights get used in the elements and have designed for water runoff to avoid integral electronics. Whilst far from IP65, these two lights are going to perform well outdoors, and stand a chance of surviving the elements.....and the Stormy, probably the first real LED strobe that might replace an actual strobe without anyone realising its an LED source."

**Paul Walton, Production Manager, Fusion Entertainment**

"The Mythos would have to be hands down the best and most versatile moving head on the market. With its ability to be used as a profile, wash or beam that is 2.5x brighter than the Sharpy, it will definitely have a great return on investment being able to adapt to most types of shows. Clay Paky really are miles ahead of every other manufacturer with all of these new products."

**MELBOURNE**

**Marcus Pugh, Hire and Business Development Manager, Resolution X Pty Ltd**

"Emmanuel and the Show Tech crew always put on a good social gathering. It was good to have LDs from the worlds of rock, theatre, TV, events and exhibition all in the same room and all suitably impressed with Clay Paky's latest offerings."

"Giulia from Clay Paky did some amazing programming especially on the B-Eyes, I don't think I've seen someone really 'go to town' on programming the B-Eyes. It really showed off what they're capable of doing."

"Everyone came along to see the much anticipated SuperSharpy but the Mythos was the surprise hit of the night for me. I saw a couple of designers stroking their chins and considering what else the Stormys could be used for. The Stormy isn't just another LED strobe, Clay Paky have managed to keep the look and charm of a traditional strobe while throwing in a few new functions thanks to the super punchy LEDs."

**Daniel Gosling**

"I thought the evening was wonderful. Great to see some old friends from the industry and make some new ones .... and the lights weren't bad either!"

"I loved the new Mythos. A beautiful fusion between aerialist and beam light. What more could you want and I can see a lot of applications for it. But the white Stormy was the true winner in my opinion - bright, clean, low power - perfect! And at the end of the night turn them on and voila you have a work light."

**Peter Darby, Technical Coordinator for Victorian Opera**

"The Clay Paky Stormy brings the humble strobe into the 21st century and it is extremely bright and punchy with full colour mix."

"The Clay Paky Mythos is a brilliant all-rounder, I imagine that I will be seeing this in many rental houses in the future. If you are not sure what light to spec on a gig the Mythos has you covered all packaged up in a water resistant housing."

"As if the Sharpy wasn't bright enough, with the SuperSharpy Clay Paky now has quadrupled its brightness and now added in features such as CMY colour mixing, CTO filters, an extra gobo wheel and lots more."

**Louie Constantinou, Director, Audio and Lighting Services**

"What more can you say, it's Clay Paky. You expect it to be one of the best in the game and it delivered."

"The Mythos and SuperSharpy deliver vivid colours, are super bright, quick and quiet. I can't wait to get my hands on some for shows."

"It was great to see an LED strobe where you can't actually see the LED's... it's something different to what the rest of the market offers."



GIULIA SABEVA & LOUIE CONSTANTINOU

JACEK - EVENT EQUIPMENT, BRIEN KEYS & SIMON BARRETT, VICTOR - IP EVENT EQUIPMENT



EMMANUEL ZIINO, ANDY GAYLER - AJS PRODUCTIONS, & CHRIS VEEVERS - VJAM

TIM HALL & VINCE HADDAD



SEAN MCKERNAN & GINO LOMBARDI

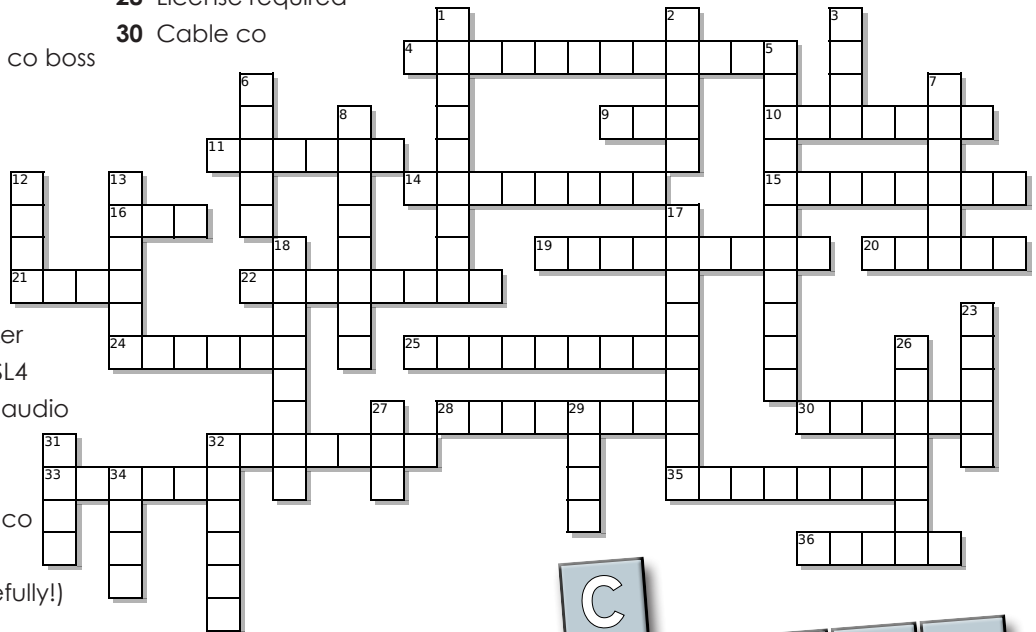
**ACROSS**

- 4 There are four
- 9 Converter
- 10 Bogus hi-fi cable brand
- 11 Old term for light globe
- 14 5500 Kelvin
- 15 Last name of senior sound co boss
- 16 100 hertz is what?
- 19 Joined broadcast
- 20 Lamp manufacturer

**DOWN**

- 1 Brightness
- 2 Amercian gel and LX maker
- 3 First name for maker of MSL4
- 5 Adjustment of variation in audio
- 6 CLS are famous for this
- 7 In theatre, not a flirt
- 8 Mexican rigging and light co
- 12 Not a wardrobe
- 13 Yell out hang the ..... (carefully!)
- 17 Not a crocodile
- 18 Unwanted always in audio
- 23 Partner first name for maker of MSL4
- 26 A town and a bloke here
- 27 Lee 106

- 21 First name of senior sound co boss
- 22 Dutch for Jimmy
- 24 Not a piece of hair
- 25 Bad luck backstage
- 28 License required
- 30 Cable co
- 32 Also known as dB
- 33 Once had a small dog mascot
- 35 It fitted in a Par 64
- 36 Not Con but similar



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# CONTRACTOR COMPLIANCE

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**BIZ TALK**  
with Julius Grafton



A READER CONTACTED ME AT DEADLINE WITH THIS CRACKER TALE. IT SEEMS SOME VENUES ARE NOW OUTSOURCING COMPLIANCE. ENTER THE NEW ERA, WITH SMARTEK. THIS IS FULLY OWNED BY BARRINGTON GROUP AUSTRALIA (BARRINGTONS) AND HAS ITS ROOTS IN A STANDALONE COMPUTER SYSTEM GOING BACK TO THE MID 1990s. ONE OF THE FIRST MAJOR INSTANCES OF ITS USE WAS IN THE SECURITY COVERING CONSTRUCTION OF THE SYDNEY OLYMPIC STADIUM.

**So far so good. CX is all for venues using state of the art technology.**

The sting in the tail, is that the venue concerned have decided, possibly at the suggestion of Barringtons, to push the compliance cost onto the contractors.

The contractor who called me was not happy. "What gets my goat is being expected to PAY MONEY for the privilege of possibly working for someone. I've done site specific OHS training for some of our clients and I respect that. I've done it on my own time, online, and I collect my passport at security, do the work required and return the passport when I leave site. This is a good system to ensure they know who is on site and that I know what I'm doing but it didn't require a cheque book!"

"The other thing I struggle with about this request is a third party business "collecting, managing and analysing unique compliance data" about me. How do I know how this data will be "managed"? Can it be shared with other clients of theirs? Will it be used against me for the issuing of tenders or for any other purpose?"

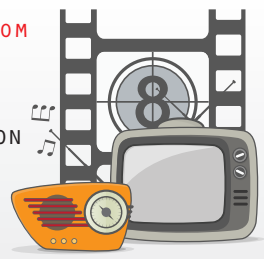
The venue letter required our contractor mate to cough up \$400 AND log in, AND commence the process WITHIN 5 DAYS. The clear inference was that if not done, there would be no more work from said venue.

To be fair to Barringtons, they do discount the fee to \$200 if you are a sole trader but wow - if I were a contracted lighting operator, I wouldn't want to pay \$200 and go through the same hoops as a company.

Allied with this, obtaining an Australian Business Number from the ATO has just become way harder. We applaud this, as sham contracting is where someone who should be hired as a casual is told to get an ABN and write an invoice. It seems those days are over.

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**aceta**

Australian Commercial & Entertainment  
Technologies Association

## 7 benefits in ACETA membership

**As everyone knows, ACETA stands for the Australian Commercial and Entertainment Technologies Association.**

**But when we say ‘stands for’ we just don’t mean the five letters that spell out ACETA but ‘stands for’ the health, wealth and well-being of the entertainment and commercial audio visual industry and all those organisations that are involved with it.**

Over the past three years ACETA has been developed and shaped to benefit the industry by the industry. ACETA has a developed agenda, has been recognised by government and has put some wins on the board on behalf of all the sector.

But how do members actually benefit from being ACETA members?

There are lots of intangible benefits. Things that can only happen because an industry has come together to work for the benefit of all, which can't be done by individual companies. It's hard to sell membership based on those. Those who get it, join. Those who don't get it, don't.

**The activities we've initiated in this area are:**

**1. Accreditation:** Cutting through the confusion, all customers from private citizens to major performing arts venues are now being invited to look for the ACETA logo when they buy or issue tenders. ACETA members comply with a code of ethics and too many corporate buyers have been burned for this not to be an issue for them.

**2. Knock offs:** An ACETA Board member started it, now Julius has taken it over. If you're on Facebook then here's the link <https://www.facebook.com/groups/267723503393017/> to a public group where anyone can post information about knock offs. Julius monitors the page and alerts the authorities

as appropriate. ACETA is now writing to all the safe work authorities in Australia to alert them to this issue. Their problem is that they can only assess an existing workplace. So how do they handle temporary workplaces, such as live performance installations, which can be extremely unsafe due to knock off gear (as well as unsafe practices), but are gone before a WorkSafe inspector even knows about it. We are also writing to all the local councils in Australia to alert them to the problem and requesting they develop a policy to ensure all gear used in their areas meets Australian safety standards.

**3. Wireless audio:** We all know the issue. We all know ACETA, under the AWAG campaign banner, has been working to address it. With the change of government we got some traction, and for the PMSE users (Program Makers and Special Events) we have achieved significant benefits. For the other users we have information materials to use when customers shout at your customers staff and your call centres when they find out their products aren't faulty and they have to buy more gear.

**4. Trade shows:** There are too many. We all know there are too many, but we aren't agreed on which of the shows is best. Our plan was always to work with the existing show owners to create something more relevant and valuable to the industry, but after extensive discussions it's clear that the change the industry needs is not going to happen. In the meantime, we see the industry voting with their booking forms and not attending all shows, or any of them, and downsizing stands. In the meantime, we are embarking on another path. More information in the new year.

**5. Skills gap:** Many members talk about how hard it is to find people with the right skills and experience. ACETA is working with TAFEs and universities to talk with them about what industry needs and has created an e-brochure outlining the career options in our industry.

**6. Manufacturers forum:** There is a surprisingly high amount of manufacturing from boutique to medium scale undertaken by Australian companies or international companies with resources in Australia.

### ACETA Forum kicks off this month

The seventh benefit is the ACETA Forum which kicks off again shortly and is for members only. These will be a series of events held in a variety of places that address industry issues and needs. The first one will be a webinar that is an insider briefing on wireless audio. Hosted by Susan Twartz who has chaired the AWAG campaign from the beginning, it will include the ACMA and others. This will be a heads-up on what the full range of PMSE new arrangements are, and there will be one or two new ones to announce. This information will be available to everyone in the industry eventually, but ACETA members will get it first.

BY FRANK HINTON

The following two webinars will cover HR issues, with an HR professional who you can ask your questions to, and affordable testing and compliance, again with an expert in the field. Early in 2015 we will announce the schedule for the following webinars and some other forum events.

So we've been busy since we last reported on activities. We probably sound like a broken record when we say that many of these activities can't be done individually, and can only be done as an industry. But it's true. Some have said that a rising tide floats all ships, so if we improve business conditions then all will benefit, member or not, so why join? Good point! Of course, if no one joins ACETA then ACETA doesn't exist so there's no rising tide to help anyone, but with the new program of ACETA Forums we are delivering against that comment.

**ACETA membership open to everyone in the industry**

ACETA offer two types of membership so that all businesses involved directly or indirectly with entertainment and commercial audio visual technologies can get involved and be industry players.

**ACETA general membership:**

- A manufacturer or distributor of commercial and/or entertainment technology products

**ACETA associate membership:**

- Re-selling (retailers, dealers) equipment used in live sound, production, broadcast and commercial integrated audio visual systems
- Maintaining and servicing of live sound, production, broadcast, commercial integrated audio visual systems equipment and systems

- Designing or installing live sound, production, broadcast, commercial integrated audio visual systems
- Rent or hire live sound, production, broadcast, commercial integrated audio visual systems
- The education and training of entertainment industry including schools, colleges and universities that provide training
- Entertainment technology media organisations
- Allied industry associations involved in the entertainment industry
- Entertainment technology trade/industry event owners

If you are a CX reader then you are interested and engaged with the industry. Rather than just read about it, be part of it by becoming an ACETA member.

**To apply, download membership form here:**

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**To the industry we invite your response,  
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**Frank Hinton  
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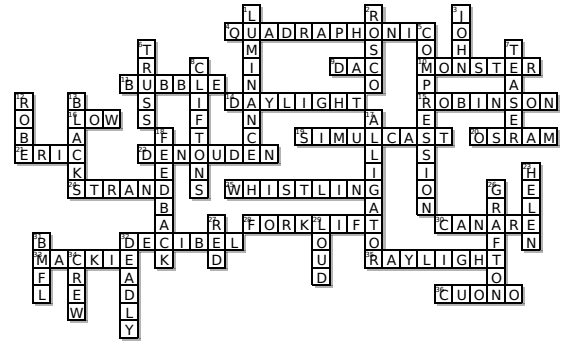
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## Trivia time

FROM ENCYCLOPEDIA BRITANNICA TO ROCKWIZ

---

I LOVE  
MUSIC  
TRIVIA  
NIGHTS.  
THEY ARE  
THE ONE  
TIME  
WHEN THE  
EXCESSES  
OF A MISSPENT YOUTH  
PAY OFF. YEARS SPENT  
SQUIRRELING AWAY USELESS  
INFORMATION ABOUT WHO DID  
WHAT WITH WHOM AND WHEN,  
WHO PLAYED WHAT ON WHICH  
TRACKS, ALL THE SORT OF  
STUFF THAT HAS NO VALUE  
WHATSOEVER APART FROM  
WINNING A QUIZ NIGHT.



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Now, I don't know about you, but one way or another I've been blessed (cursed?) with a head full of trivia. All sorts of unimportant, esoteric and arcane chunks of information seem to be stored away in the innermost recesses of my brain, waiting only for the right trivia quiz question to bring the correct answer leaping to the front.

Personally, I blame my parents. Convinced they were doing the right thing, they bought a complete set of Encyclopedia Britannica when I was young, in the vain hope it would bring out the scholar in me. Not a hope; if there ever was a scholar inside me, all I can say is he's kept himself well hidden in the intervening half century!

To while away the hours in my formative years without TV (although a relative worked at the BBC, he was so poorly paid that he didn't earn enough money to actually buy one and watch it!) I would idly flick through the pages of each weighty volume, subconsciously soaking up little snippets of knowledge, and searching in vain for photographs of topless native women. Ubangi? Ubetcha.

However, as I got older I discovered the world of pop music, being lucky enough to have lived through the 60's and early 70's when so many of the classic tracks were being written, and around which so many music trivia questions are based. Sadly not lucky enough to have bought Microsoft shares early on, but you can't win 'em all!

So, when not devouring encyclopedia volumes I was hanging out at the analog equivalent of Timezone, feeding all my spare pocket money into the jukebox. Consequently, if asked "Who sang the original version of The Lion Sleeps Tonight?" I know instantly that it was The Tokens; and if it's "Who played bass on the Teddy Bears' song To Know Him Is To Love Him?" then I know that it was a very young Phil Spector, who also wrote it. And so on.

I once went to a school trivia night for The Kid's school. For those lucky enough not to have done so, the format is simple. There are, say, eight rounds of ten questions, usually with a theme to each round, you write your answers down and the team next to you marks it. Room for some collusion there, you might think. And you'd probably be right.

Each team has a card they can hold up before a round to give them double points for that round, which can lead to a false sense of security as the scores are displayed during the evening. The team next to mine played their card early, and by the penultimate round the members were ecstatic, cheering and dancing on the table as they were leading my team by nine points. They had forgotten that my team had not played its card yet. On the next round we did, and got 10 out of 10, netting 20 points. Whoa, their team was devastated, extremely poor losers, muttering darkly about cheating and breaking the rules. And from being quite friendly with them before the quiz, none of them have ever spoken to us again! So be warned.

A few years ago, working at a show in the UK, I went along to a Pop Quiz night that was put on by one of the sponsors at a nearby pub.

I was feeling a little worn out after a hard day at the exhibition being nice to people, and told myself I'd only go along for half an hour just to say hello, have a couple of warm beers, and grab a cab back to the hotel. So much for plans. As soon as I walked through the front door I felt right at home. The carpet had that flat, slightly

## α DUNCAN FRY... CONTINUED

adhesive feel that only comes from years of Bundy and cokes (or whatever the UK equivalent was), cigarette ash and chunder being dribbled into it day in, night out.

The quiz had just started when I walked in, and as far as I could see there were no spare seats at any of the tables. I looked around the room and saw a bunch of severely 'tired and emotional' chaps wearing the obligatory pro-audio black t-shirts leaning on the railing overlooking the crowd, and scribbling answers down on a contest form, in between yelling out "Kylie" as the answer to every question.

Just my kind of guys, I thought, as I grabbed a (free) beer and sidled up next to them. They turned out to be a loosely structured team going by the team name of Betty Swollocks. "Who's she?" I asked in all innocence, causing them all to fall about the floor laughing. Hint – think Sweaty ...!

But by crikey did they know their trivia! Including the names of all four Banana Splits (Fleegle, Snorky, Bingo and Drooper, if you're interested).

However, while they were well up to speed on any UK trivia of recent years, they were at a bit of a loss when it came to anything before 1980, since none of them had been born then! So when the question was asked "Whose heart did My Boy Lollipop make go giddyup?" I was right there with the answer – Millicent Small a.k.a. Little Millie – and became an instant team member!

Sadly the old fixaroo was in, and by a stroke of luck the main sponsor's team made a miraculous recovery in the last round coming from 30 points down to win by a short head!

Fast forward 10 years, and I was in the crowd for a RockWiz taping at the Esplanade Hotel, St Kilda, Melbourne. If you've seen an episode you'll know the drill – 12 members on each table battle it out for one of four places on the teams.

By a combination of knowledge and luck (a flip of a coin with Neil from ARX distributors TRC), I wound up on one of the teams. Sadly it was the day after Gene Pitney had passed away. Waiting backstage with the other team members before the show, Brian and Julia asked us "Any Gene Pitney jokes yet? There doesn't seem to be any around?"

THE WINNING SCORE CARD  
AUTOGRAPHED BY JULIA,  
BRIAN, AND RON.  
A RECORD SCORE AT THE  
TIME. WOOHOO!

**\*FOR NON TRIVIA-HEADS,  
GENE PITNEY HAD AN  
ENORMOUS HIT WITH A SONG  
CALLED  
"24 HOURS FROM TULSA"**

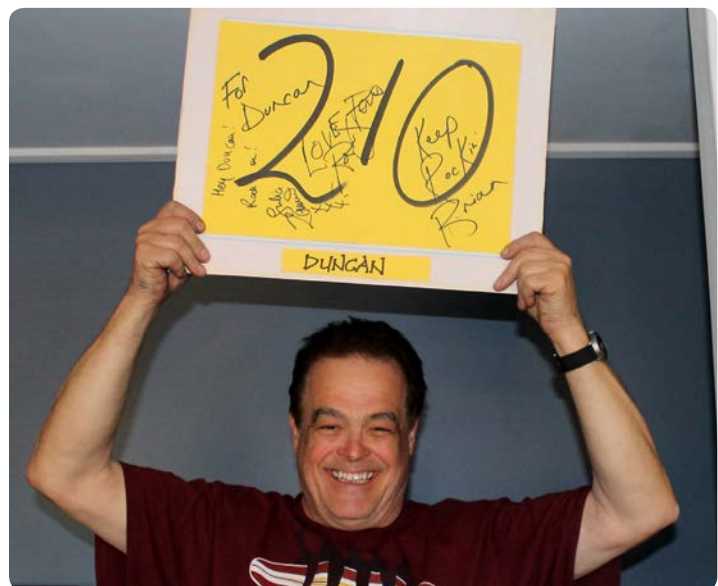
Everyone shook their heads – except for me, because as luck would have it I had been emailed one that very afternoon.

"We-e-ll," I said. "I did hear that the family had a call from the funeral director. He said that it would take about 2 weeks to make the coffin from Pine, but only '24 hours from Balsa'!"\*

Hmm – silence all round apart from muffled sniggers!

Despite that, with the combination of my knowledge of Smoke on the Water, and Ron Peno from Died Pretty's in-depth knowledge of The Sweet, our team managed to win. No prizes for winning, of course, apart from a brief, fleeting moment of fame.

Sigh. All those years squirreling away trivia knowledge and the only tangible prize was grabbing our RockWiz winning scorecard off the floor where it had been thrown away in the rubbish!





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