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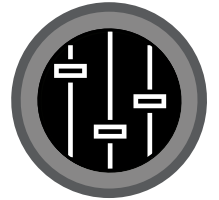
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 Photographer: TROY CONSTABLE



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**MADONNA**

According to crew, Madonna was rarely on time during her whole Rebel Heart world tour. But the 11.15pm start in Brisbane was the worst. Despite the NDA (non disclosure agreement) crew must sign, some are talking. And it appears Ms Ciccone is not pleasant. She hires and fires, often seemingly on a whim. Despite real talent and huge box office appeal, she is one of those performers that makes life on tour difficult at best and a misery at worst.

**Like Prince, or Axl Rose**

Starting any show late is universally unprofessional. Venue staff go on to penalty rates, transport does not mesh, audiences get annoyed, and the crew are worked too late. Trucking and transport arrangements become a nightmare. Plus the performer pays for it. So there is no logic, and also no real reason or excuse.

**JON**

On the other extreme the late Jon English was one of nature's gentlemen. He was such a nice guy to his band, crew and audience, and they rewarded him with unswerving loyalty. He was easy to light, easy to mix, and easy to enjoy.

His bonhomie rubbed off as well, with those around him generally acting better, working better, and playing better. His sudden passing last month was a terrible shock for everyone who had worked with him.

Few performers can reinvent themselves and embrace change as well as he did. His more recent 'Rock Show' tours with young musicians were brilliant, and his overall talent simply shone like a beacon.

*We will all miss you, Jon English.*

**SUCCESS**

Our news item this issue about Richard White's WiseTech floating on the sharemarket marks a turning point we hope. Australians used to get bent out of shape by success, evidenced by the 'tall poppy' syndrome.

But we are seeing some brilliant successes grow out of our entertainment technology industry. A big example is Peter Freedman from Rode Microphones, with 200 staff building product in Sydney. John Gunton steered Dynalight to a big sellout to Philips Lighting a decade ago.

Its nice that we are now respecting and revering success. It's also nice to see success on the world stage happening from Australia, where the innovators have worked against accepted logic and just got on with things.

**OVER UNDER?**

Cable rollers everywhere unite. Can we get rid of over-under cable rolling? Why do we do this? You know the problem, don't you? Throw the cable out from the wrong end and end up with a string of knots. This doesn't happen if the cable is rolled over-over or under-under.

But it seems to be a polarizing subject, which is exactly why I mention it here!

I can feel a survey coming on, to try to get to the knot of the problem, before people start to get untied...

- Julius



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## Devine (Retro) Lights Strand Reborn

**For baby boomers who grew up doing lighting, Strand Electric was the biggest brand. Originally known as SEECOL (Strand Electric and Engineering Company of London) the firm made the A-Z of lighting equipment across most of the last century.**

It was once a 'one stop shop', with lights, effects, dimmers and control desks. Then the suits got involved and it fell into unfamiliar hands. As has happened on numerous occasions, corporate types struggle to appreciate the quirky nature of our industry and scare off the creative specialists. Then the company folds.

Steve Devine is co-founder of Meyer Sound Australia - and possibly the only head of an audio co who is a lighting guy. A retro lighting guy.

"About four years ago I was in London walking through Covent Garden, and saw this big skip. They were throwing Pattern 23 (500w profile spots) and Pattern 123's (500 watt fresnels) in there. The guy said they had all new led fixtures, all this old stuff was going to the scrap merchant. This was happening all over the place - people chucking out what they perceive as rubbish. No one was keeping any of it!"

Steve started buying.

"It wasn't a commercial decision, more emotional. After spending about forty grand I had 8 of everything they ever built since the Pattern 23 in the 1950's. In particular I have a lot of Pattern 252 2,000 watt effects projectors with disks, effects heads and all the lenses."

"I just bought everything I could find, including the newer Preludes and Harmonies. I polished some up, and saw some demand. I started to sell some of them off and rent them out. It was never intended to be profitable but now it is sustaining itself."

The restored Pattern 23's and Pattern 123's are popular with interior decorators. Steve removes the paint and has the underlying cast aluminum polished. He removes the reflector and lamp base, and replaces it with a GY16 lamp which can be tungsten or LED.

It is impossible to re-create the optics without using the original hot 500w lamps which no one would want in their home or business. Instead the result is a quirky retro fitting that emits useful light.

"Now I'm selling off the stuff I don't want and keeping things like the 23's, 123's, and 264's. (Patt 264 was a 1,000 watt bifocal profile with a set of soft shutters, and a set of hard shutters). At Canberra theatre I got 150 Patt 23's for 4 grand. In that package there were 36 Strand colour wheels!"

Back in the day, a colour wheel was a form of colour changer. Strand had a push button controller so you could dial up one of five colours.

"The other good deal was when Channel 7 Perth were moving studios and they wanted to sell the lighting rig. I put in a bullshit offer of 2 grand and got 60 Mole Richardson 2k's."

"Now I have nearly 1,000 lights. You can't find a loudspeaker at Meyer Sound Australia right now for lights!"

"I really got into finding stuff. I dug up the first Strobe and Colour Organ (a three channel sound-to-light device with inbuilt microphone) that Jands ever built. I gave them back to Jands for their museum. That's the fun part of it. Slowly it developed into a business."

"Look, selling a Patt 23 to an old mate is fun and easy, but selling on Ebay to people who have issues is not fun. So I'm going to resist the urge to turn it into a fully fledged business."



[PICTURED]- STEVE DEVINE & HIS LIGHTS



"There's still stuff around, but some people are convinced old Patt 23's are worth \$150 but they are not worth that to me. Some people think they're sitting on a lot of value, but there's little in it because of the cost to restore it. It's the fun of doing it for me!"

"Roger Foley is using some 252 effects projectors at Vivid this year!"

Other once mainstream but now obscure lights in the Devine collection include two Carbon Arc Super Trooper followspots - one of which we showed working at CX Roadshow several years ago.

"I can't find Concept Genie smoke machines anywhere, there is one at the Concept Engineering showroom. There's no others, because they all broke. The heat exchanges were incredibly unreliable."

"I don't have a Patt 93 (1,000 watt followspot) but I do have a Pageant lantern, which is a very old 1,000 watt beamlight. I have some Pattern 774's, which are the worst 1k followspot ever made".

Back to iconic Pattern 23 - there were multiple versions, and countless were made and sold. The 23F had a Fresnel lens (why?) and the 23W had an extra lens for wide throw. The 23S had a square gate with shutters, the 23II was the last version made. The 23N had a long narrow lens.

"I have a Tubular Ripple - a rotating tube effect that might look a bit like ripples of water. I have a bunch of Optikinetics Solar 250m projectors, and a Hanimelex Aquarius effects projector but they were not made by Strand obviously."

## ICTech Rolling with AVT (formerly AMX Aust) & Extron Fourth Roadshow for 2016

AVT (formerly AMX Australia) has confirmed it will exhibit at October's ICTech Roadshow, showcasing its broad, integrated product offering from brands across the Harman professional range, including AMX, AKG, BSS, Crown and JBL Professional. AVT will also participate in the extensive seminar programme, providing hands-on training on its products, as well as insight from its experts on AV and ICT industry trends and issues. AVT joins Extron as the first two major exhibitors announced for the tour, with more to confirm in the coming weeks.

ICTech Roadshow spends one day each in Brisbane, Sydney, Melbourne, Adelaide and Perth, bringing all the latest in converged AV and ICT products and knowledge to the industry in its home towns, enabling more professionals to get the skills and information they need without taking precious time and money away from their business.

"ICTech Roadshow is a great opportunity for us to engage with key representatives of the ICT community in five major cities", said Peter Swanson, Head of Sales and Marketing for AVT. "We appreciate that time is the most valuable commodity for our clients and hope that, together with the other participants, we and ICTech Roadshow will provide people in each city with the chance in their busy schedules to learn about technologies and



[PICTURED] - PETER SWANSON, AVT

solutions that can improve their next project deployment - or finesse their use of existing solutions."

ICTech is the fourth successful roadshow this year conceived and managed by Juliusmedia Group, publishers of CX Network. Launched in 2011, CX Roadshow this year became ENTECH Roadshow, running every February. In May SECTECH delivers again to the security technology market nationally, covering the five major cities in Australia. July will see the first ENTECH NZ Roadshow, touring 20 firms to Auckland, Wellington and Christchurch.

## NZ's new Safety Laws

### Production Industry Transitions

**New Zealand's health and safety record is quite poor in comparison to other developed countries so after the Pike River mine disaster the Government recommended the revision of the 1992 Act.**



Currently 75 people die and 1 in 10 is harmed at work every year. By comparison, Australia has around 190 deaths at work per year, but with much more population the death rate is half that of NZ.

There are 200,000 NZ work-related ACC claims annually. Another 600-900 die from work-related diseases. This costs the country NZ \$3.5 billion annually and negatively impacts workers and their extended families. The Government sees the new Act as one of a number of strategies for tackling New Zealand's poor track record. It aims to reduce workplace fatalities and serious injuries by 25% by 2020.

ETNZ - (Entertainment Technology New Zealand) have for

years provided the industry with a safe practices guide and a rigging guide, both available from the ETNZ website. These documents, developed by industry working groups, identify key risk hazards and make suggestions on how to minimise or eliminate those risks. ETNZ say that they won't be revised solely due to the new Health and Safety at Work Act, rather they are evolving documents which are updated as required through a process of discussion and approval and this embryonic process will continue.

ETNZ reports strong interest amongst its members in light of the demand for the health and safety stream of workshops at their 2015 conference. ENTECH NZ in July will host a keynote seminar on Entertainment Safety, in Auckland, Wellington and Christchurch.



## Former Jands Designer in billion dollar float

From Rock Industries to WiseTech

**In the late 1970's Richard White started building winchup stands in his dad's garage. Soon he hooked up with lighting designer Ray Hawkins (The Angels) to design iconic lights such as the Raylight and the Minibeam.**

**R**ock Industries developed into a major supplier across Australia, selling Par cans, truss, stands, effects lighting and control equipment. By 1979 it was operating from a factory in Chippendale, behind Theatrecraft.

Founder Richard White had an uncanny ability to engineer metalwork and then developed fledgling software skills that attracted the notice of another large manufacturer at the time – Jands Electronics.

In the early 1980's Jands acquired Rock Industries, and Richard White stayed on to develop the first computerized lighting control desk, the Aurora. While the Jands badged 'Rock Industries' equipment sold well, the Aurora hit hurdles relating to the primitive Zilog Z80 8-bit processor.

Jands exited the Aurora and had better success later with the Inspiration. They prevailed to become a global manufacturer of lighting desks, which today are their export flagship.



Meanwhile Richard White developed better software skills and eventually launched WiseTech Global Inc, which supplies freight forwarding software to major firms like DHL. It employs around 150 people at a campus near Sydney Airport.

Now WiseTech is set to float on the Australian share market which could see the firm valued at around \$900 million if the float succeeds.

---

## SynAudCon coming to ANZ Core Principles of Audio course

**Core Principles of Audio is a 2-day course designed by audio education leaders SynAudCon, and taught in Australia and New Zealand by Matt Vance. It is specifically designed for those who need to round out their knowledge of technical audio fundamentals through a live, interactive learning experience.**



[PICTURED] - MATT VANCE

**I**t covers knowledge that is essential for the setup and operation of a sound system - important subjects such as signal flow, component interconnection, grounding, loudspeaker placement, microphone basics and mixer setup are covered. The emphasis is on the practical, using real-world explanations of potentially complex subjects. Matt Vance will teach the SynAudCon - Core Principles of Audio training course.

The seminars are running May 3-4 in Melbourne, May 10-11 in Sydney, and May 17-18 in Auckland.

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

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## ARCA Reunion in May

All Crew Welcome

**The next ARCA Melbourne Reunion will be on Sunday 17th April at Kilda Sports Club, from noon until 11pm.**

**I**t is intended for Australian Road Crew Association members who typically have at least five years experience or are associate members. To attend the reunion, join the association and then book to attend.

The cost to join is \$50, and then it is \$25 on the door.

Come and remember, honour and pay respect to your mates that aren't here with us and give a hug to those that are. Share some love and stories. Leave grudges at the door and laugh about what we can't remember.

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### Clay Paky Spheriscan



Spheriscan is a scanner with a modern twist: its mirror goes on turning endlessly

beyond 360 degrees, which creates an original swirling effect. Its speed may be adjusted as desired and reach a maximum of 280 RPM. The light source is a 1400W OSRAM lamp with a colour temperature of 6000 K, working at 1200W. With an IP rating of IP54, the Spheriscan may also be recessed into the stage floor, with only its transparent head visible. Additional features include 13°-34° high speed zoom, one 6-rotating gobo wheel, one 8-fixed gobo wheel, rotating prism, fast sixteen-blade iris, linear frost filter, CMY system, and 7-colour wheel.

**Australian Distributor:**  
**Show Technology**  
[www.showtech.com.au](http://www.showtech.com.au)  
 or (02) 9748 1122

### ShowPro X-Blinder

The ShowPro X-Blinder is a warm white LED audience blinder with modern design and advanced features to reproduce the look and feel of the classic incandescent effect. Four 100W, 3000K warm white LEDs deliver higher output than traditional 4 x 650W halogen blinders, flicker-free output with selectable PWM frequencies for worry-free video, smooth 16-bit dimming curves that accurately mimic conventional fades and onboard macros to make for easy programming of effects. Individual heads swivel independently in a 24° range.



**Australian Distributor: Show Technology**  
[www.showtech.com.au](http://www.showtech.com.au) or (02) 9748 1122

### HK Audio Lucas Nano 608i

HK Audio's Lucas Nano 608i is the world's first compact PA with an iPad-enabled wireless mixer on board. The mixer includes eight channels, seven reverb programs, EQ and compressor functions, and support for Bluetooth streaming. Weighing just 16.3kg, the Nano 608i includes two satellites with a 4.5" broadband woofer and 1" tweeter, and one 10" subwoofer, allowing it to be used as a mono PA, a 2.1 setup or in Twin Stereo mode. A 460 W amp drives the system to 130dB max SPL, and the free Lucas Nano Remote app for iPad provides access to additional DSP functions.



**Australian Distributor: CMI Music and Audio**  
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**JBL EON208P**

**Australian Distributor: Jands**  
[www.jands.com.au](http://www.jands.com.au) or (02) 9582 0909

The EON208P is an all-in-one portable PA system, complete with an 8-channel mixer and Bluetooth audio. The 8-channel detachable mixer provides input connections via four XLR/1/4" jack combo connectors, two pairs of 1/4" balanced TRS jacks (stereo), one pair of RCA jacks (stereo) and a 3.5mm stereo jack. The loudspeakers are two-way, driven by an 8" woofer and 1" compression driver, powered by 150W of Class D amplification per side. Bluetooth connectivity allows you to stream audio from your mobile device. Net weight is 17.6 kg.



**WolfVision Cynap**

The WolfVision Cynap System is a knowledge sharing solution which enables users to utilise presentation content material of all types, from an almost unlimited range of both digital and physical sources. Cynap features comprehensive 'bring your own device', recording, streaming, and media player functionality, and can play, display, record, and stream all commonly used media simultaneously. Information is easily available, whether stored locally, in the cloud, or on a USB stick. Video inputs and outputs are available through two HDMI and one HDBaseT connection, audio in and out via 3.5mm jack, USB 3 via four rear ports and USB 2 on one front port.

**Australian Distributor: Hills**  
[www.hills.com.au](http://www.hills.com.au) or 1800 720 000

**Ampetronic D Series**

Ampetronic's new D Series Digital Signal Processing networkable Hearing Loop driver range will initially consist of 10 and 14 Amp dual output drivers. At a maximum of 14 amps per loop output the D14-2 driver is the most powerful product currently available and both drivers in the D Series are class "D" products; meaning a 60%+ increase in energy efficiency over existing solutions. Unique multi stage filtering ensures compatibility with other system equipment as well as global EMC regulations. Test tones are built in and the amplifiers can be controlled from any browser device with an internet browser over the network or via a Wi-Fi router.



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**dBTechnologies  
DVA K5**

dBTechnologies has released the new 3 way active line array module DVA K5. Featuring a Class D 500 W RMS Digipro G3 digital amplifier, DVA K5 is capable of reaching up to 129 dB SPL. The new DVA line array module is comprised of two 1.4" drivers, a 6" neodymium midrange and an 8" neodymium woofer. An advanced DSP user interface allows precise system tuning; a double rotary encoder provides a separate tuning for LF correction (coupling) and MF/HF correction (high-angle midrange loss and air absorption compensation due to throw distance). The module's electronics and components are housed in a sturdy polypropylene box, reinforced with an internal anti-vibration metal structure which reduces any resonance, allowing the cabinet to achieve an excellent acoustic response.

**Australian Distributor: National Audio Systems**  
www.nationalaudio.com.au or (03) 8756 2600



**Yamaha  
Tio1608-D & NY64-D**

The Tio1608-D is a Dante-equipped I/O rack with 16 microphone/ line inputs and 8 line outputs. Tio racks feature the same recallable D-PRE microphone preamplifiers as the TF series of digital mixers. In combination with TF series consoles, Tio racks can be connected using up to three units with a fast and easy setup. The NY64-D is a Dante expansion card for TF series consoles. Used in conjunction with the Tio1608-D I/O it becomes possible to create a versatile stage box system with up to 40 inputs and 24 outputs. The Tio1608-D has an Australian RRP of \$1699 inc GST and the NY64-D \$649.99.



**Australian Distributor: Yamaha Music Australia**  
au.yamaha.com or (03) 9693 5111



**Pakedge  
S3-24P**

Pakedge's new S3-24P layer 3 switch is designed for AV applications with rear facing ports, AV aesthetic, and TruStream technology. It comes equipped with dynamic routing protocols for greater isolation and control, making it ideal for campuses and enterprise networks. Multicast can be enabled from the GUI for superior streaming across complex networks - a necessity for quality HDMI over IP functionality. The S3-24P has a power budget of 370watts and has 24 PoE+ ports and four independent 10 gigabit fibre

ports for increased throughput and bandwidth across the network. The hardware on the S3-24P switch will be capable of supporting Audio Video Bridging and Time Sensitive Networking (AVB/TSN), though the standard won't be available immediately, with Pakedge stating that they will release a firmware update to enable the AVB functionality in Q2 2016.

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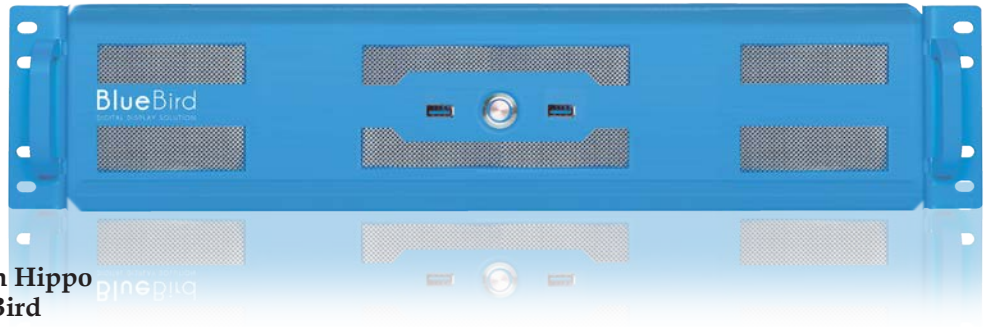
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**Green Hippo  
BlueBird**

The BlueBird digital display solution is a one-box device for displaying and manipulating high-resolution video for the installation and display markets, with the ability to playback media at resolutions of up to 12 MegaPixels whilst supporting high frame-rates. This 2U rackmount unit is a complete media to screen solution, performing tasks usually handled by a series of devices, eliminating the need for video-wall controllers and signal processing equipment, within a custom designed chassis. AViary Video Tools output mapping allows quick positioning and configuration of multiple screens including arbitrary rotation of

individual screens and bezel compensation along with support for third party splitters. The VideoMapper option allows detailed pixel accurate mapping of any area of media to any part of the output canvas.

**Australian Distributor: Lexair Entertainment**  
[info@lexair.com.au](mailto:info@lexair.com.au) or [www.lexair.com.au](http://www.lexair.com.au)

**Osprey Video  
Talon G1**

Osprey's Talon is a small form-factor H.264 video encoder designed to be easy to use, portable, and easily stream both your standard definition and high definition content to broadband and mobile networks in H.264 to RTMP servers. It features a fanless design with a low power consumption of <6W. The wide input voltage range of 9VDC - 17VDC also make it a candidate for battery operated equipment and installations. The Talon features two operating modes - MBR mode allows you to stream one source to three destinations, while LC mode is ideal for lecture capturing as it allows two sources to be streamed to two destinations.



**Australian Distributor: Corsair Solutions**  
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Acoustic Technologies has announced the new SCX28 Monitor/Speaker, dual angle monitor wedge that can also be used as a pole-mount front of house speaker. Constructed of premium birch ply, and finished with AT's proprietary Acousticoate finish, it houses a 15" coaxial speaker with a low frequency power handling of 800 Watts and a high frequency of 160 Watts. The SCX28 can be bi-amped, and a proprietary passive crossover controls the coherent wavefront, and the coaxial horn has a 60 x 40 dispersion. The SCX28 has an Australian RRP of \$3,295 inclusive of GST.

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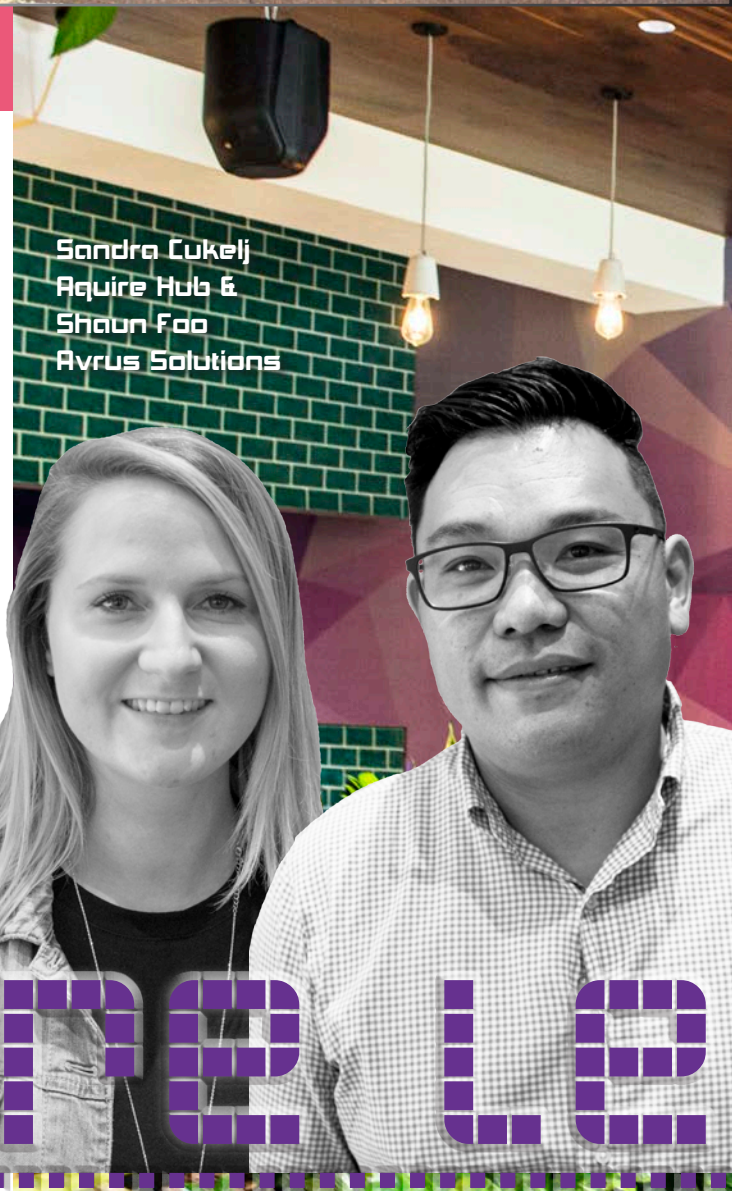


Level One



Digital signage

Online training courses are usually just that, but Acquire Learning have decided it should be more. In Hardware Lane, in the centre of the café culture of Melbourne's CBD, they've built a vibrant, physical manifestation of their philosophy to help students connect with their courses, each other, and business. Jason Allen went back to school...



Sandra Cukelj  
Acquire Hub &  
Shaun Foo  
Avrus Solutions

ACQUIRE LE

**R**etrofitted over three levels into a heritage building, Acquire Learning Hub was the vision of Acquire's Managing Director John

Wall. "We help students find a pathway from education to employment," explained Sandra Cukelj, Venue Manager at Acquire Hub. "The Hub is about helping our online students connect, network, and facilitate together, rather than being isolated studying on their own. We're the first to put something like this forward, and its goal is to make online education more successful."

Acquire Hub seeks to achieve this with a combination of a funky aesthetic (think luxury airline lounge meets Google campus at Starbucks), engaging technology, and presentation and collaboration systems that are flexible and easy to use. Award winning design house Studio Equator provided the look and the artistic direction, while AV integrator Avrus Solutions were contracted to design and construct the AV systems, with design sub-contracted to Pasquale Valpied and the team at Parity Technology Consulting.

Student  
Xperience  
Pod

STUDENT  
XPERIENCE  
POD

Inside Student  
Xperience  
Pod

PHOTO CREDIT - CHRIS DAILEY, HELL STUDIOS

GREATNESS LIES INSIDE  
EVERY ONE OF US

acquire learning Hub

Using AV to Connect

**Ground Floor screens**

**Going Up**

Each of the three levels has a different form and function. The ground floor is all about welcoming and engaging current and prospective students. A bank of large interactive screens are recessed into angled benchtops, providing a comfortable place to sit and search for courses or watch videos. Large screens mounted on the wall display information, and can display live video from other floors when used for events. An LED ticker above them can be updated with current information. Cosy meeting pods let students chat with career counsellors while enjoying barista coffee.

Level One is a combination of more seriously appointed closed meeting spaces, the space-age Student Xperience Pod, computer workstations, and a lounge area. This level is intended for exclusive use by students and staff. The Student Xperience Pod is modelled on the interior of a luxury private jet. It's an intimate space fitted with a screen and an Extron ShareLink 200 wireless collaboration gateway, one of eight in the building, which allows up to four devices to share content. It's not all business on Level One - there's a built-in point for a DJ mixer for when the space is used for events.

**Live to Camera**

Level Two is all about presentations and events. A raised stage, integrated camera, microphones, and a left/right PA from Quest, allows any content to be captured and streamed to the ground floor, and recorded and distributed via an Extron SMP 351 H.264 streaming media processor. An adaptive lighting system can react to movement or sound, or can be changed to suit the branding requirements of an external hirer. Two meeting rooms and a workshop area round out the floor.

"We've installed two recording cameras," said Shaun Foo, Director of Port Melbourne-

**Ground Floor screens**

**Interactive screens**

**Parity Technology Consulting's Pasquale Valpied**



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based integrator Avrus Solutions. "There's the PTZ on Level Two, and one on the Ground Floor. Presentations can be streamed across both levels. It's not only Extron capture, it's a whole Extron backend. We've had great support from Extron and their Victorian State Manager Ben Fabien. We've built Extron systems for other companies and Extron always give us support across the board. They're also willing to make recommendations beyond the Extron product range and help us to make sure everything comes together."



Level Two stage

Extron ShareLink in Student Xperience Pod



Level Two

### Behind The Scenes

Equipment integrated into the video backbone, which is handled by an Extron DTP CrossPoint84 8x4 scaling presentation matrix switcher, includes the massive 98 inch NEC 4K display on the Ground Floor. "The original idea was to have a video wall, but we felt that a single large screen would have a greater impact," expanded Shaun. "The video infrastructure is all 4K ready, but not all of the screens are, so we can easily upgrade them in the future if necessary. The interactive screens are Samsung ranging in size from 32 to 55 inches. We've used BrightSign for digital signage."

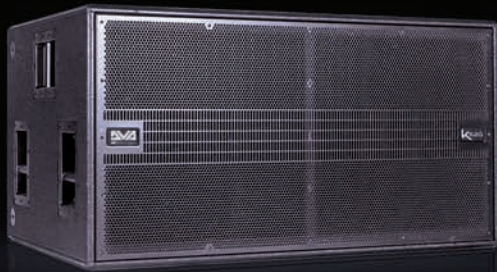
On the audio side, Avrus installed a simple-to-use Sonos system, giving the staff and students the ability to play their own tunes separately on each level, or combine the building into one zone. On each floor, BGM and content is played through multiple RCF MQ 60H speakers hung throughout the space, linked in pairs to form an omni-directional 360° speaker array. Quest amplifiers, wired and wireless Shure mics, and Extron DSP complete the system.

### Win-Win

Management and everyday use of the AV systems has been designed to be as easy as possible for the staff, in order to keep the space dynamic and engaging. "The digital signage content can be updated from the office or remotely," continued Sandra Cukelj. "In the past for a presentation, we take a computer and plug in a cable, but now we just type in an IP address. Even I feel I've become tech savvy. With all the AV capabilities of The Hub, you think it should be difficult to use, but it's not. There are simple control panels, there's no going into extended menus to access something; it's all self-explanatory. Now we've been using the space for a little while, we've identified a few extra things we'd like, and because of how it was designed, it's easy to add things."

In addition to providing a place for students to work and connect, Acquire Learning Hub has engaged local and related businesses, to the benefit of all parties. "We run events ranging from neighbouring companies coming in to use the space for meetings, launch parties for start-ups, showcases, and after-hours events," elaborated Sandra. "We'll always be student focussed, but when we have a great relationship, we always want someone to benefit. We get so many people walking in who want to know who did the design and the interactivity. It's about networking, not just for our students, but also the companies involved."

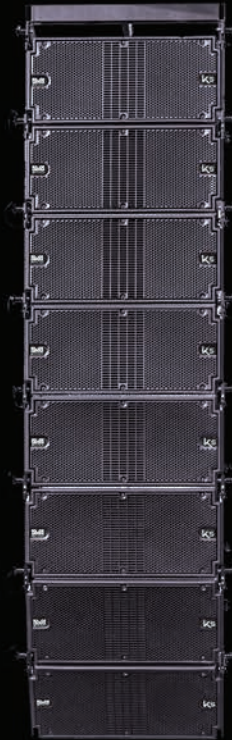
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# THE MILL REPORT



“SHOULD TAKE  
ABOUT 6 HOURS...”

**THIS WAS WHAT I APPARENTLY TOLD MY MATE RICK O’NEIL A FEW YEARS BACK WHEN HE ASKED ME HOW LONG I THOUGHT IT MIGHT TAKE US TO BUILD A REAR-WALL DIFFUSER FOR HIS TURLEROCK MASTERING ROOM IN SYDNEY.**

**IN THE END THE DIFFUSER TOOK THREE WEEKS, ALTHOUGH IN MY DEFENCE THE PLANS CHANGED A FEW TIMES, AND RICK DECIDED TO GO ON HOLIDAY HALFWAY THROUGH THE CONSTRUCTION. BUT CERTAINLY FROM THIS INCIDENT IT BECAME ABUNDANTLY CLEAR THAT I’M NOT VERY GOOD WITH PREDICTING CONSTRUCTION TIME FRAMES.**

BY ANDY STEWART

**S**tudio construction is a tricky enterprise, particularly when it comes to predicting how long a job might take to finish. And by ‘finish’, I mean *really* finish. You know: put trims around windows and doors, paint rooms, lay carpet, install permanent (rather than temporary) lighting, finish off acoustic treatments and audio wiring to and from the various rooms, and so on.

In reality, most studio construction jobs are far more involved in practice than they first seem on paper. And when you’re a building ‘enthusiast’ like me, there’s always an eagerness to start working *in* the room – rather than on it – long before it’s finished. Problem is, the day you start recording is the day work on the studio grinds to a halt.

Maintaining your enthusiasm for a studio construction project – even if it’s your own – gets harder the longer things take. Most of us want to down tools as soon as possible and start mic’ing things up, and resisting this temptation often becomes too much to bear.

In truth, commencing construction on even the most modest of studio structures without first having a reasonable crack at planning the design, construction method, choice of materials and budget, is folly. You don’t want to be like me and find yourself working on your studio eight years from now, but that’s what can happen when you let your naïve enthusiasm take charge.

In my experience – and as cynical as this sounds – the more a project is driven by an initial blast of exuberance, the more likely it is to never be truly completed. Studio construction can be an exhausting, costly, drawn out and difficult undertaking even for a professional. For an ‘enthusiast’ the task is epic.

Andy Stewart owns and operates The Mill in the hills of Bass Coast.  
He's happy to respond to any pleas for recording or mixing help...  
contact him at: [andy@themillstudio.com.au](mailto:andy@themillstudio.com.au)

## PLANNING IS KEY

Your studio construction timeline, budget and plan specifics should be represented by more than just a few scrawls on a napkin. But more often than not that's exactly what people have - virtually no plan. Most studio owners I know who have built commercial or home studios have only had a floorplan sketch. Beyond that they've just winged it. But this is hopelessly inadequate, and only sets you up for a fall or technical stuff-up somewhere down the track.

People who end up working inside their incomplete studio do so for several reasons: either because they have no realistic sense of the time it takes, the effort required or the costs involved. They either run out of time or money (or both), or the energy required to complete the project. Often they then have no choice but to start working in the room to pay the bills.

## THE COSTS

Though it's hard to budget any construction down to the nut and bolt, it's another thing entirely to make no effort in this regard. Without a budget and some costings, things can get way out of hand financially and, needless to say, this can prove fatal to the project. If you're thinking of embarking on a studio build, do yourself a favour and make some detailed drawings. Use these to predict what materials will be required and in what quantities.

Get an Excel Spreadsheet running and put some subheads into it of things like: Timber Framing, Slab Constructions, Floating Floor Underlays, Wall Construction finishes, Power and Lighting fixtures, Tool Purchases, Audio Cabling



and Routing, Paint & Colour Schemes, Acoustic Panels & Materials, Glues and Screws etc.

In the columns you create for these subheads - which might include a list of specific materials, their quantities and pricing - add further columns for things like: Estimated Construction Time, Construction Method, etc. Where possible put numbers in these columns to represent hours or days, and make sure you sum these together at the top of each column. If you're thorough, you may get a rude shock when you add these figures up. The costs and time involved might turn out to be four times greater than what you'd naively predicted over a beer in the pub.

The important thing to understand about all this is that the more information you can gather at the start of the project, and the more detail you can put into the spreadsheet, the better informed you'll be about where this undertaking is likely to take you. Forewarned is forearmed.

A large advertisement for NW Group Complete Event Solutions. The background is a wide-angle shot of a large stadium filled with spectators, likely during a major event. The NW Group logo, a stylized 'NW' inside a circle, is prominently displayed in the center. Below the logo, the text 'NW GROUP' is written in large, bold letters, followed by 'COMPLETE EVENT SOLUTIONS' in smaller letters. At the bottom, there are logos for partner companies: Norwest, Cairellie, Oceania, spuglass, and Phase 1 Audio. The text 'Sydney, Melbourne, Brisbane, Auckland, Wellington, Perth' and the website addresses 'nwgroup.co.nz' and 'nwgroup.com.au' are also included.

## MOTIVATION

This sort of planning also has a huge impact on your ability to stay motivated about the project, because let's face it, if you lose interest the project is most certainly doomed.

A spreadsheet that gives you a timeline figure about *how long things are predicted to take* keeps the home straight in realistic view. In many respects this figure is as important as the total cost. It also allows you to work on specific tasks without dwelling on the big picture so much. Without it, the overall task can become daunting; the end seems nowhere in sight and your energy for the project can suddenly drain away.

Even if the plans or timeline go out of whack, don't let that affect you. Make changes to the spreadsheet that reflect this inaccuracy by documenting the specifics of the added time or costs, and this will – ironically – keep your mind clear about where the project is at. Nothing is more demoralising than a project with no end in sight. An Excel spreadsheet clears this fog away and keeps your chin up during the difficult periods you inevitably face.

For those with concerned partners, the spreadsheet also lays things out in black and white in ways they can more readily understand. Keeping your spouse informed about things like time and costs, rather than having all the plans and costings in your head, can also dispel tensions that might arise around the project. This might seem like a trivial benefit of the spreadsheet, but I assure you it is not.

When your significant other is in the dark about this enormously time consuming undertaking, and your attempts to clarify what's happening involve rabbiting on about how acoustic panels work or why the floor needs to float, you may be on rocky ground. Keeping things clear on a spreadsheet makes everyone's life easier, not just your own.

## PLANS FOR SUCCESS

Recording studios can be everything from fun things to own, to vital infrastructure central to your livelihood. Regardless of their significance to you, don't be fooled into thinking that their construction is a doodle, or that they're cheap to build.

If you're on the verge of such an undertaking, get some plans going and work on their detail. Build a comprehensive spreadsheet alongside it and cram it with as much specific information as you can muster. Do all this and you will be setup for success. Dive in with nothing and you may never finish...

# TOOLBOX REVIEW

**H**ERE AT THE MILL I've been playing with a new *mono* digital 24-bit reverb manufactured by yet another boutique Californian pro audio company – Meris, who design and manufacture in Los Angeles.

The Mercury7 takes up a single space in a 500-series rack, delivering lush, somewhat old-school sounding reverbs (in mono) that can easily be pushed to sonic extremes, particularly when two are linked in stereo.

There's an amazing amount of control on the unit, despite the small, unassuming single 500-series footprint. This is mainly thanks to an 'Alt' button which, when pressed and held, allows every other knob on the unit to perform a secondary function.

This adds things like pre-delay control to the decay time knob, and modulation speed control to the modulation depth control. Other features under the influence of the 'Alt' control are: echo density, vibrato depth, pitch vector mix (which controls the blend between pitch-shifted signals and normal reflections being emitted from the reverb tank), and swell envelope attack time.

Sonically, the Mercury7 is incredibly powerful, particularly in stereo. Two units are linkable via a proprietary cable that joins the two cards together, although in mono it's no slouch either.

Analogue knob twiddling quickly has this unit producing all kinds of mad, lush, pitch shifted or endless reverbs that are perfect for things like ambient productions and film sound effects. You can create everything from a very clean simple mono space for a vocal, to an enormously over-the-top decay for a guitar or piano that thunders and rolls on for the whole evening – time permitting.

But what makes this unit so fantastic is its inspiring immediacy. It allows you to revolutionise dry signals with giant beds of decay that build, swirl and shimmer like the sunset at the drop of a hat. The 'Pitch Vector' control in particular creates all kinds of extraordinary harmonies within the reverb response that act like instruments in themselves.

In mono, I was very quickly impressed by the kind of dark reverberant tank sounds that you might associate with old reggae tracks, the decay on things like vocals sounding particularly amazing under the influence of a bit of astute EQ (which influences the nature of the reverb, not just its output tone).

Dialling in more 'low' control produces more sensitivity and extension to the bottom end. More from dialled in 'high' frequencies sets the unit shimmering on forever, while backing this control knob off cools things down dramatically, producing a far more natural – though still pretty kooky in mono – reverb response.

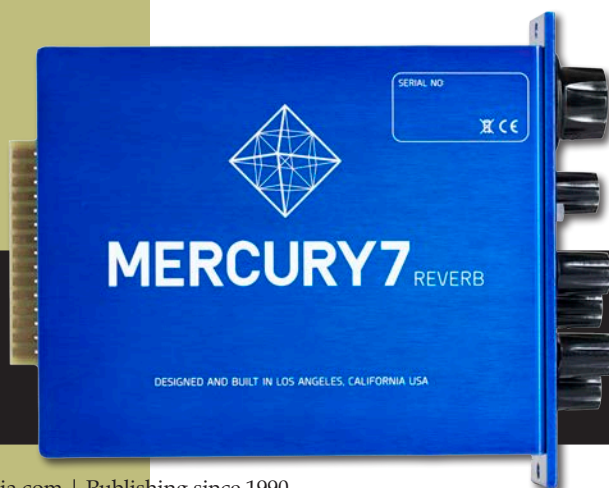
Functionally, the Mercury7 is pretty straightforward to use, although it took me a couple of minutes to realise that an illuminated bypass signal light produces sound; extinguishing this light cuts the reverb. This is backwards logic in my book, and I presume it's a fault with my unit. If they're all like that it's pretty counter intuitive.

There are two unique reverb algorithms onboard the Mercury7: Ultraplate and Cathedra. Both sound amazing, particularly under the influence of the modulation and pitch controls, but it's the combination of all the controls on the unit acting intuitively together that makes the Mercury7 module so very more-ish.

I cannot believe how quickly you can dial up something extraordinary to go with even the plainest of dry signals. The Mercury7 has the fantastic ability to reinvent your sounds for you, allowing you to play with the knobs like the good old days and get you immersed in sounds you probably would never have thought to conjure up in other ways.

I love this unit... so musical, so influential.

**Awesome.**



PRICE: \$805

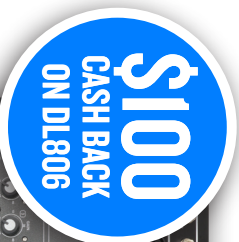
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# RINGWOOD'S REALM



THE RECENT \$665 MILLION DEVELOPMENT OF THE EASTLAND SHOPPING CENTRE IN MELBOURNE'S OUTER-EASTERN SUBURB OF RINGWOOD PRESENTED A HUGE OPPORTUNITY FOR MAROONDAH CITY COUNCIL. WORKING WITH QIC, OWNERS OF EASTLAND, MAROONDAH HAVE CREATED REALM, THE CENTREPIECE OF THE NEW TOWN SQUARE AND HOME TO A LIBRARY, CULTURAL, AND BUSINESS FACILITIES.

JASON ALLEN CHECKED OUT THE TECH...



NDY'S RICHARD BRAND

The brief for the new facility was ambitious. It was to replace the old Ringwood Library and update it with interactive technology, house a Council customer service and information centre, an art gallery and exhibition spaces, flexible learning spaces, a café incorporating reading spaces for its magazine and newspaper collection, an interactive local history display, and, to top it all off, a centre for regional knowledge and innovation incorporating a one-stop-shop business resource hub.



DIGITAL SIGNAGE, BIZHUB



MEETING ROOM

“Realm is a first of its kind library, cultural, knowledge and innovation centre,” said Maroondah’s Mayor, Councillor Natalie Thomas. “Owned by Maroondah City Council, the facility responds to the changing needs of the Maroondah community, and through extensive community consultation, Realm has in essence been designed by the people for the people. Extensive consultation in 2013 with local community members and Maroondah visitors ensured that Maroondah City Council really understood what experiences and resources people wanted at Realm.”

Richard Brand, Associate Director of ICT and Audio Visual at engineering consultancy NDY came on board to help shape the project and determine the technologies that would deliver the outcomes Maroondah had set out. “NDY were the technology consultants for the broader Eastland upgrade,” explained Richard, “which involved deploying a large integrated communications network that all of the building’s systems and tenants were connected to. That

included systems like the air-conditioning, digital signage, and fibre direct to the tenancies for high speed web and phone access. We were later requested to become involved in Realm.”

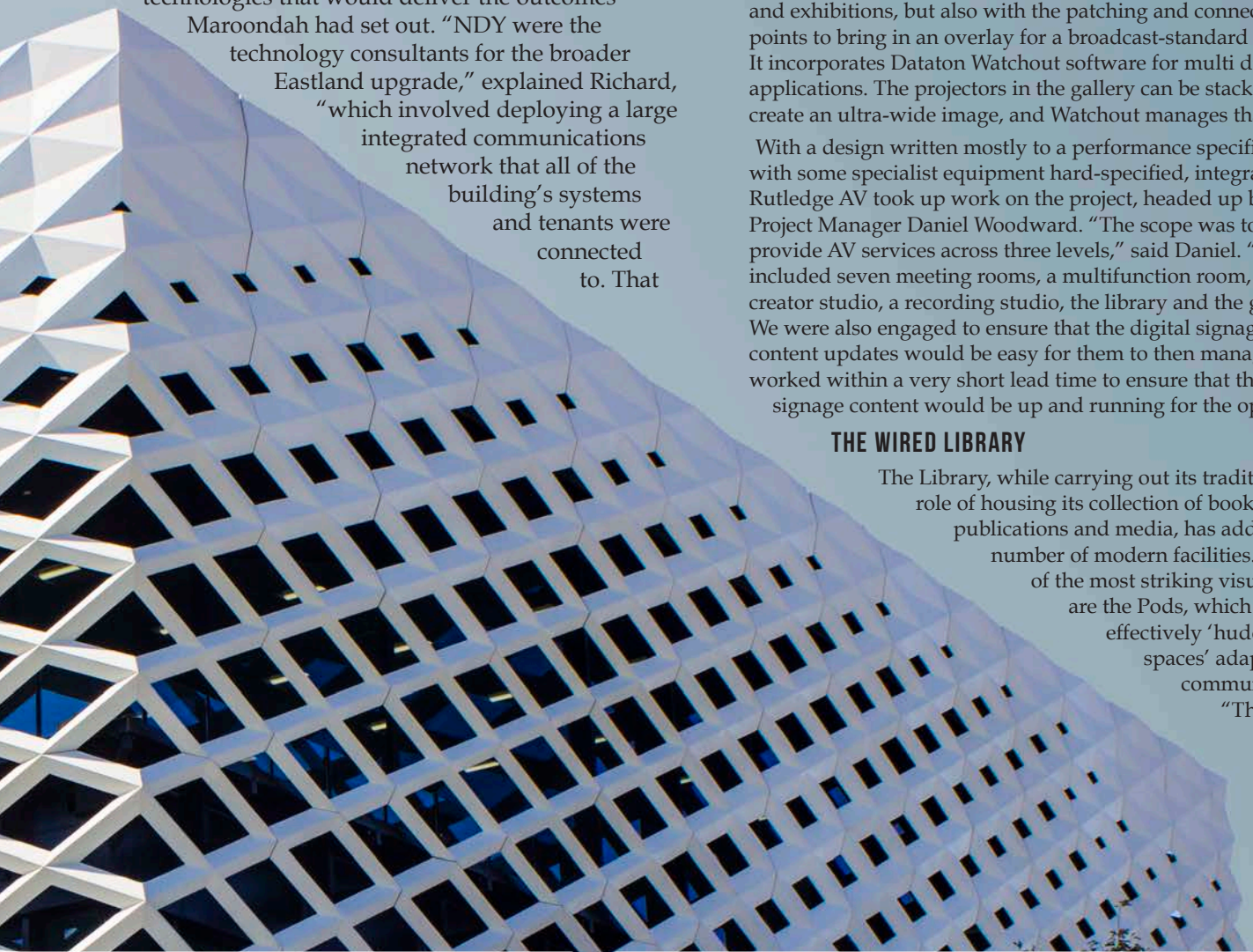
### ON DISPLAY

“We had a number of workshops where we established what would be available to staff and visitors,” continued Richard, “and worked through our options for technologies and how they would best fit. It had to be easy, simple to use, and intuitive for both staff and visitors to collaborate, consume content, activate meeting and conference rooms, and run events.” The council ran a separate forum dedicated to the gallery space, with input from potential exhibitors. “The gallery was more prescriptive,” Richard elaborated. “It’s a flexible space with fixed display devices for events and exhibitions, but also with the patching and connection points to bring in an overlay for a broadcast-standard event. It incorporates Dataton Watchout software for multi display applications. The projectors in the gallery can be stacked to create an ultra-wide image, and Watchout manages that.”

With a design written mostly to a performance specification, with some specialist equipment hard-specified, integrator Rutledge AV took up work on the project, headed up by Project Manager Daniel Woodward. “The scope was to provide AV services across three levels,” said Daniel. “That included seven meeting rooms, a multifunction room, a creator studio, a recording studio, the library and the gallery. We were also engaged to ensure that the digital signage content updates would be easy for them to then manage. We worked within a very short lead time to ensure that the digital signage content would be up and running for the opening.”

### THE WIRED LIBRARY

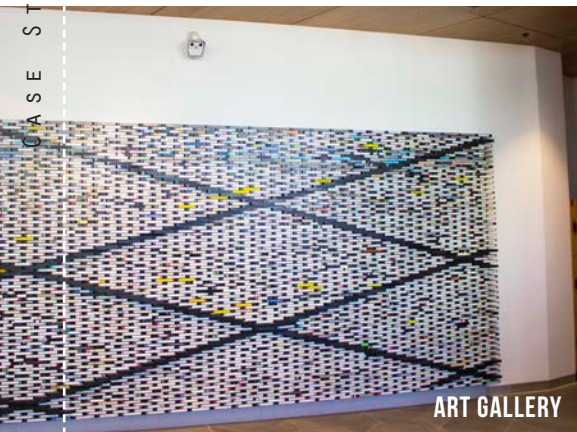
The Library, while carrying out its traditional role of housing its collection of books, publications and media, has added a number of modern facilities. One of the most striking visually are the Pods, which are effectively ‘huddle spaces’ adapted for community use. “The Pods use a



LG INTERACTIVE TABLE



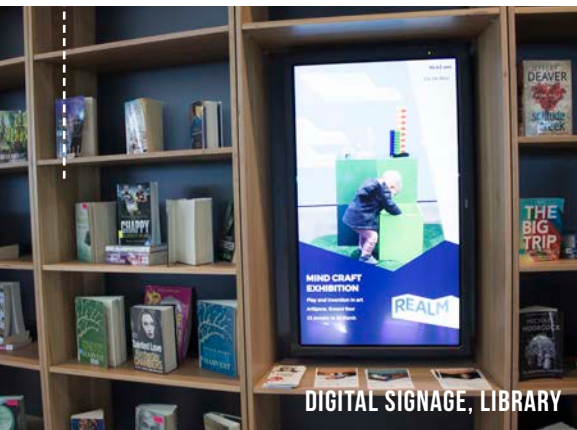
CREATOR SUITE



ART GALLERY



PLAYSTATION ZONE



DIGITAL SIGNAGE, LIBRARY

built-in ScreenBeam Pro wireless collaboration device," continued Richard Brand. "This enables users to stream and collaborate on content from their laptop or phone, and connect to the JBL surround sound system. The system in the Pods was developed in collaboration with the architect. At NDY, we design a lot of huddle spaces for corporate offices. They're really popular now, and a lot of them are VC enabled."

Other examples of innovative technology are cleverly integrated into the fabric of the library itself; an interactive LG screen is subtly mounted into a table identical to its neighbours, running applications and games. The Youth Zone houses three PlayStations, extremely popular after school, and apparently, also with middle-aged men while their partners shop next door. The children's area hosts several clever features, such as an interactive screen for playing with online content mounted at child-height, Sony projector, JBL sound system and extensive video I/O from Extron handled by an IN1608 eight input scaling presentation switcher.

### MANAGING INFORMATION

Digital signage is carefully integrated throughout the library, providing information and way finding without being intrusive. "We facilitated a platform for the staff at Realm to create digital signage content on the network and schedule it," Richard offered. "Some of the screens are interactive, so they can do way-finding as well as interactive content. All of the screens and projectors were specified with a performance specification; we only hard-specified the wireless collaboration devices."

The performance specification included control, for which Rutledge AV proposed and installed a Crestron solution. "All of the spaces are covered by Crestron control," pointed out Daniel Woodward. "This includes 7" Crestron touch screens and Crestron Cameo keypads in the meeting rooms. We've also employed Crestron's XPanel PC-based control. The XPanel software enabled us to make a virtual touch panel interface that can run on any staff member's PC. This has allowed the staff to have control over the gaming area and digital signage."

### COMMUNITY ENGAGEMENT

The meeting rooms integrate Sony projectors, NEC display panels, Sennheiser microphones, BiAmp audio DSP, Australian Monitor amplification and Tannoy ceiling speakers. Extron HDMI transmitters and receivers handle video input, routing back to either a stand-alone IN1608 presentation switcher, or, in the case of rooms that can be combined, an Extron DTP CrossPoint matrix switcher. Next to the meeting rooms, the Creator Suite runs a fleet of Macs with access to Adobe's Creative Suite. IPTV is available throughout the building.

When this author visited on a normal Friday morning, almost every part of the facility was in use, with a mixture of community, creative and business functions. "Even when we were commissioning, it was busy," agreed Richard Brand. "The location, in the Town Square with the link to Ringwood Train Station, is excellent. It just has great community engagement. Maroondah City Council are now looking at opportunities to connect onto the digital signage in Eastland to alert people to events happening at Realm. It's a really impressive space."

Mayor Natalie Thomas, concurs with Richard. "Realm, just four months after opening, is already delivering on its promise to provide a place for the community to interact, meet, share knowledge, learn and inspire and that in itself is very exciting. As a Council, we knew we were creating a facility of significance in Realm, not only for our local community, but for the region as well."



MAROONDAH'S MAYOR,  
COUNCILLOR NATALIE THOMAS

RUTLEDGE AV'S  
DANIEL WOODWARD



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# LISTEN HERE

BY ANDY STEWART

## BALANCE, BALANCE, BALANCE...

It's one of the hardest things to keep perspective on during the mixing process, balance. But what does the word even mean? Does it relate to left and right, tone, dynamic or what? Let's find out shall we?

There are several ways to look at mix balance, but let's start this article by looking at it from a very different perspective:

## HINDSIGHT

**W**hen a song is finished: mastered and sent off into the world, it's often only then that the truly big picture of what took place during the making of that song comes clearly into view.

Before then there have been endless distractions: debates about the tracking, discussions about overdubs, who's gonna do the mixing and where, what the final mix sounds like, should that vocal be up 0.5dB or not, who should master it, and so on...

But then all that suddenly fades away, and you're left with the thing you've been striving towards all along – *the final outcome*.

As scary as this might sound (and setting aside club remixes and the like for a moment), after all that hard work and endless late night phone calls, ultimately there's only one version of events that the world hears.

*One.*

There's something about the finality of this perspective that's confronting to even the most experienced musicians, producers and engineers.

Listening back from the perspective of hindsight can be one of the toughest gigs there is. It can be exhilarating of course; some of the mixes you create sound awesome no doubt. But then there are the times when the "if onlys" gate-crash your party, crushing any hope you might have had of enjoying the limelight you now find yourself in.

The real trick is to learn from this sinking feeling, confronting it head on by asking yourself a couple of simple questions: 'What don't I like about this outcome, and how can I avoid making the mistake I'm hearing next time around?'

Regardless of any other external factors that might have contributed to the unsatisfactory outcome, and without apportioning blame right now, it's good to clarify what went wrong, when and how the problem arose, and why you didn't pick it up until now. It might be a tough thing to dwell on, and you may prefer to just run and hide, but that's not really a solution, is it?

What tends to happen in these demoralising circumstances is that the mix you imagined you've created has somehow been corrupted by a shift of perspective that you either didn't notice during the mix, or predict might happen in the hands of the mastering engineer. No-one's perfect of course, and you can be sure that every great mix engineer that's ever walked the earth has felt like this several times during their career.

But you probably thought the mix was perfect, right? Or at least a thing to be proud of, and now it's gone off the rails, fallen flat, fallen short of expectations... it's extremely frustrating.

One way of learning from the power of hindsight is to listen critically to the way your mix turned out, as opposed to what you *imagined* it was.

### REDRESSING THE MISTAKES

List the discrepancies and problems you've heard. Maybe the kick drum is too low, the vocals too bright, or the guitars too wide. It might be that there are far too many effects now, and in hindsight these should have been pulled back. Whatever the problems are, list them as clearly and critically as you can.

Now, if you can face it, call up the final mix that you sent off to mastering.

Listen to this version with your list of critical issues in front of you. Can you now hear any of these in your mix? Is it suddenly obvious that the mixing had these same problems, or is it true that the mastering has done a number on your precious work? Put a tick next to any of the problems you also hear in this final pre-master, and be dispassionate. Don't try and pull the wool over your own eyes or this exercise will be pointless.

Often what you're hearing under these circumstances is a lack of balance in your mixing that mastering has exposed: things too low, too wet, too loud, too bright and so on. If only you could go back a step and fix these problems before it was too late!

Well, why not?

Although I'm not one for dwelling on past failures too much, there's a chance – particularly in this era of digital upload – of redressing any glaring issues by simply replacing the public version with an updated mix.

## THE DISCUSSION

Provided the mastering engineer did to your song what was ultimately required to make it sound the best it could and compete with other songs in its genre, from there you can work backwards – assuming the mix is recallable – and repair the issues in question.

It might pay to have a polite, productive conversation with the mastering engineer first about what he or she thought were the ‘issues’ that needed addressing, and why the mastering outcome had left you feeling so demoralised.

Use this information to address the anomalies on your initial ‘failure’ list. Prioritise the most critical disappointments first, and work fast. Hindsight is a fragile flower that will wilt quickly, so don’t mess about or stray too far from your planned list of corrections.

Of course, most of the time – though not always – budget, or a lack of willingness on the part of others to step back into the mix furnace can prevent any hope of redress, and if the mix was analogue you may find it exponentially harder to achieve a thorough recall. But from a mix engineer’s perspective it might be worth attempting a ‘fix’ regardless, even if it’s never going to see the light of day. One thing’s for sure, if you can muster the courage to do this, you’ll learn a lot and come out the other side a better engineer.

It’s probably better to work alone in this circumstance too, fixing specific problems rather than allowing the whole box and dice to be up for debate all over again. The time for tolerating the ‘mix by committee’ has long passed. Perhaps that was partially the reason why the mix went slightly pear shaped in the first place. Who knows? Either way, by using hindsight to rebalance your mix, you will develop a keener understanding of what’s involved in making a truly great mix survive right through to the airwaves, YouTube and your mate’s car stereo.

## ONE LAST THOUGHT

One other lesson to learn here is that one of the hardest things to train yourself to manage during the building of a fantastic mix is stamina. Not all mixes come easily or happen quickly, by the sheer quantity of overdubbing, editing or decision making involved in a song.

It may just be that, for some artists or particular songs, your process should include two mastering stages, one that’s ‘in house’, and second that goes public. It may not necessarily even be something you tell your mastering engineer, though of course, you will have to pay them twice!

By creating a ‘finished product’ that pushes your song into places you may not have expected it to go, you get the benefit of hindsight without the public humiliation. Of course, most of the time, there is neither the money nor the stomach for such a drawn out, exhausting double process, but if you can budget for it, it will give you the power of redress, and allow you to polish and correct the mix, bringing it up that last 10%, and making it great.

If you go this extra yard when circumstances permit, you may end up with the best of your career. Good luck!

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# SAFETY LAWS UPDATED IN NZ

ENTERTAINMENT AND EXTREME SPORTS FACE CHANGES

THE NEW HEALTH & SAFETY WORK ACT 2015 CAME INTO EFFECT THIS MONTH (APRIL). THIS IS NZ PARLIAMENT'S RESPONSE TO THE PIKE RIVER MINING DISASTER AND THE LOSS OF 29 LIVES IN 2010.

To support the implementation of the Act there is the stick. There are large fines and prison terms if convicted of contravening the Act. Reckless conduct that exposes a person to risk of death or serious injury faces 5 years in prison or a NZ\$300,000 fine for an individual, double that for an officer and a company will be looking at NZ\$3 million.

And then there is the sweetener, provided largely by ETNZ – (Entertainment Technology New Zealand). ETNZ have for years provided the safe practices guide and rigging guide, both available from the ETNZ website. These documents, developed by industry

working groups, identify key risk hazards and make suggestions on how to minimise or eliminate those risks. ETNZ say that they won't be revised solely due to the new Health and Safety at Work Act, rather they are evolving documents which are updated as required through a process of discussion and approval and this embryonic process will continue.

However, ETNZ is well aware of the interest amongst its members in light of the demand for the health and safety stream of workshops at their 2015 conference. Health and safety is set to be at the core of upcoming events including ENTECH NZ in July.

## HEALTH+SAFETY

### NZ INDUSTRY REACTION

CX Magazine took some of the concerns of industry stalwart Andre Goldsmith, as representative of an SME in the Entertainment Technology Industry, and put them to the experts. Andre Goldsmith is Managing Director of Hang Up Entertainment Services, a South Island production company providing rigging and lighting equipment and services to concerts and tours throughout New Zealand. They operate their own semitrailer and rigid truck fleet and can work with an on-call crew of up to 100 people. Andre himself has thirty years in the industry under his belt and is set to be an assessor when the new NZ industry qualifications and accreditations go live. He understands the importance of health and safety but has reservations about the implications of the new Act on the entertainment industry. He believes that there needs to be a balance between minimising risk whilst ensuring passionate workers can enjoy their job.

### THE PANEL

**BRYCE FLEURY** is the Manager for Sector Engagement at WorkSafe New Zealand. He is part of a team within WorkSafe assisting businesses to get ready for the new legislation. Bryce has worked for WorkSafe since its inception in 2013 and before that he held roles to do with health and safety in the Ministry of Business Innovation and Employment and prior to that the former Department of Labour.

**PHIL SARGENT** is Vice President of ETNZ (Entertainment Technology New Zealand) and part of the committee that is addressing health and safety on behalf of the industry. He has an extensive background in theatre lighting, technology and design. He is currently Product Manager for Philips Selecon.

**CATHY KNOWSLEY** is the Director of HiViz Events Management and provides health and safety advice to the events industry including the New Zealand Festival, Auckland Festival and Toi Whakaari - the NZ Drama School. She audits and reviews a company's health and safety processes and helps companies create health and safety management plans. Cathy still keeps one foot firmly under the sound and lighting desk with regular stints as a technical manager for Indian Ink theatre company. With some foresight she undertook a Diploma in Health and Safety Management in 2012 to complement her years of experience in the industry, making her a rarity in the sector currently – both experienced and qualified.

**Andre:** "Most in our industry have good health & safety practices but are feeling the burden of providing documented proof."

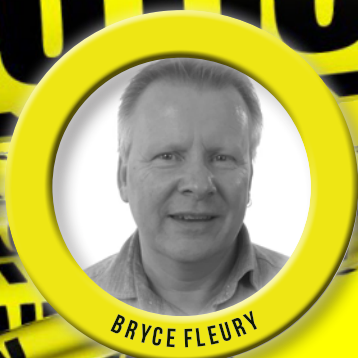
**Bryce:** "Nothing in the Act says that it needs to be a document, although a document is a useful way for everyone to get the same information in larger organisations. We ask that you do whatever is appropriate for your context – if you have three workers and they all know what happens in an evacuation but it hasn't been written down, that's fine. If you've one hundred workers maybe it would be better written down. We definitely want to move people away from paperwork for paperwork's sake. We don't want businesses to waste time producing a document so you can tick a box, but no one ever actually reads the document."

**Cathy:** "Change by its nature creates insecurity. In actual fact if you had good health and





ANDRE GOLDSMITH



BRYCE FLEURY



PHIL SARGENT



CATHY KNOWSLEY

safety practices before the Act, you should be fine. You don't necessarily have to write stuff down. Find a way that works for you – a face to face briefing, a photo of a hazard board."

**Phil:** "Documenting processes in some way is important because in the event of an incident that is what WorkSafe is going to want to see. The ETNZ safety and rigging guidelines offer procedures that can be used as a starting point for developing your own systems that work for you."

**Andre:** "What is happening to help our relatively new industry establish qualifications and accreditation?"

**Phil:** "This is one of ETNZ's core roles. We are not an ITO but we have collated feedback from members and are developing unit standards in conjunction with the New Zealand Qualifications Association."

**Bryce:** "Unit standards are being created for health and safety that will be incorporated into educational programmes."

**Andre:** "There is now a huge emphasis on proving competency even for old buggers like me who have been in the industry for 30 years. I worry that paper will become more important than experience."

**Phil:** "ETNZ values industry-based experience and it is ETNZ's task to define and accredit that knowledge so that when an institution is looking for a service they can compare businesses. Personally I have made myself available for courses such as working at heights just for a refresher. Because you've been doing something for ages, doesn't mean that there isn't something you could do differently."

**Andre:** "There can be significant costs attached to gathering all these pieces of paper, particularly for smaller businesses and freelancers."

**Phil:** "This will be an additional cost, that will need to be passed onto venues and clients, same as freight forwarding"



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or security. The business or freelancer will need to market themselves in such a way that the end-user knows that they are going to be working with a Health and Safety aware partner."

**Andre:** "How do we realistically manage the PCBU (Person Conducting a Business or Undertaking) consultation that is required when we work in such a deadline driven environment with so many different parties?"

**Cathy:** "This comes down to the event management team. At the time of contracting companies, health and safety should be on the table and at every production meeting it should be discussed: what access do you need, what equipment are you using, what tasks are you performing, what are the implications? On the day, you run through any new hazards such as heavy rain and how to minimize the associated risks. Inevitably someone has to lead it and it may be the site manager, the venue etc."

**Phil:** "We see the site induction being an integral part of that process, ensuring the venue, the contractors and the sub-contractors are all on the same page."

**Andre:** "We have done alright for a long time. Will the government continue to let us set our own guidelines?"

**Phil:** "The onus lies with ETNZ. The 1992 legislation demanded that each industry have a code of practice and that was the impetus for the two ETNZ safety guides. WorkSafe still have the view that industry-led is preferable and ETNZ's challenge is to ensure that we maintain our industry's good record on health and safety. One accident could mean that we have that opportunity taken away from us."

**Andre:** "Our industry has an open culture in comparison to the construction industry. We have less 'non-thinkers' and workers do speak up and we listen. But as passionate individuals they also take educated chances because we work in a pressurised environment where things need to get done by curtain up. How can this be addressed?"

**Cathy:** "I agree that as an industry we are open to workers saying that something is too dangerous. I also don't think people take the risks that they used to take but I know the thought patterns that go through a technician's head: 'Shall I worry about getting a longer ladder with the show starting in five minutes?' We need to educate them to make the right choices and that cultural shift has to be management-led."

**Bryce:** "We would like businesses to think of the new legislation as an opportunity to review what you are doing currently to manage health and safety. We encourage companies to talk to their workers who are at the coal face and create procedures and systems that work for them, in your working environment."

**Phil:** "At Philips we have initiated worker consultation and we have already identified issues due to talking to the workforce that may otherwise not have arisen until an incident had taken place. This will be an ongoing process for Philips."

**Andre:** "I have had a number of discussions with community event organisers who are concerned about volunteers being put off due to the time burden and the responsibility for due diligence."

**Cathy:** "I agree. It might already be having an impact in some places for example where councils are asking for more information prior to approving an event. The organisers become overwhelmed and justifiably think this isn't why I volunteered! However the Act does allow for things to be simplified and the council or the volunteers may be reading too much into it."

**Bryce:** "Volunteer Directors can't be prosecuted for a failure to meet due diligence but still have a responsibility to carry it out. But market forces rather than prosecution will weed them out. They will inevitably be named and shamed and struggle to attract future funding and support"

**Andre:** "Community event organisers are already asking for excessive amounts of paperwork to relieve their fears. What would your advice be to them?"

**Cathy:** "Organisers need to be sensible. If you are getting a company to do the rigging, ask to see the health and safety management plan for your event, not for everything the company does. If it is the first time that they have done something, for example put a stage on a roof, specifically ask for paperwork relating to the risk management of that element of the job."

**Andre:** "Community event organisers are turning to 'professional' health and safety managers. What qualifications prove that they are actually professional?"

**Bryce:** "The Government has created a body called Health and Safety Association New Zealand (HASANZ), an umbrella organisation representing workplace health and safety professionals. They will create a register of competent health and safety professionals."

**Cathy:** "They should have credentials such as degrees in Safety Management, membership of or registration with Health and Safety organisations such as the New Zealand Institute of Safety Management. Yet you can't beat experience - you need both."

**Andre:** "Is there an element of jumping the gun - a lot of the necessary frameworks for our industry are not in place, although our industry representatives are being very proactive."

**Bryce:** "Pike River created an immediate need for the government to act. We couldn't wait until everyone felt that they were up to speed. More resources are coming but we will be working with industry groups to develop resources that are relevant to them. Many industries prefer it that way, rather than being dictated to from above."

**Phil:** "In a perfect world everything would be aligned but the legislation was not driven by a desire to make the workplace safer but by a political call to action following Pike River. We are working very hard to develop the new unit standards, and we did get an exemption from a mandatory freeze by the NZQA on the development of new qualifications. In the meantime, we encourage everyone to attend our workshops, log your projects to submit for recognition of prior learning at a later date, and keep an eye on our website or Facebook page."

THE ENTERTAINMENT INDUSTRY WILL BE WATCHING WITH INTEREST AS THE ACT COMES INTO EFFECT AND IS APPLIED TO A UNIQUE ENVIRONMENT WHERE IN ANDRE'S WORDS, "THERE IS NO TOMORROW, THE CURTAIN GOES UP AT EIGHT AND THERE IS A PREVAILING CULTURE OF NEEDS MUST BE MET, WITH EVERY INDIVIDUAL BEING RESPONSIBLE FOR THEMSELVES."

WORKSAFE AND ETNZ'S SEEMINGLY MUTUAL GOAL IS TO MAINTAIN THE INDUSTRY'S TRACK RECORD FOR SUCCESSFUL SELF-REGULATION WHILST SIMULTANEOUSLY NOT KILLING OFF THE PASSION OF PEOPLE WHO OFTEN WORK LONG HOURS IN HIGH PRESSURE ENVIRONMENTS AND SOMETIMES JUST FOR LOVE.

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# Digital Audio Labs Livemix

## Next Gen Personal Monitoring

BY JULIUS GRAFTON



Minnesota is a Midwestern state in the USA. Bob Dylan and the purple pain (Prince) originated there. It is also home to Digital Audio Labs who introduced their first audio interface in the late 80's when digital audio was in its infancy.

The CardD, CardDeluxe, and V8 systems came along and many of these systems are still in use, more than 20 years later in the broadcast and data acquisition industries.

The firm has parleyed their audio and design expertise into other markets, developing OEM amplifier, digital signal processing, and integration solutions for a number of partners.

Livemix is a next-generation personal monitoring system that marshals the latest tricks to make life easier onstage.

As a retired Monitor Engineer, or M.E., I was delighted to see that the nifty stage modules – called a DuoMix, have a big ME control. That is for THEM, the musicians, to mix their own flipping monitors. Man, I never saw that coming while I stood stage left in front of my Soundcraft 200 trying to make the wedges louder.

Livemix requires a 'Central Mixer', which comes with 8 or 16 Ethernet outputs. Then you decide how the audio is coming in – either Dante or analogue. If the former, you buy the Dante card for the Central Mixer, and run your Cat 5 cable from the rest of the Dante universe.

A big fat advantage of Dante, aside from not having to run 24 audio inputs on 24 RTS (6.5mm) cables, is that all the channel names propagate thru the Livemix system. Previous generation personal monitor systems required you to get friendly with your personal label maker, or get jiggy with white tape and sharp pen.

But if you are sans-Dante you can buy the AD24 Analogue Input Rack, which is loaded with 24 jacks and a bunch of D-Sub connectors for direct feed of your audio from whatever stage splitting system you have.

Then you run out your Cat 5, 5E or Cat 6 cable to the CS DuoMix box. As the name implies it is for two musicians to share. Play nicely, muso. User A works on the left side, user B on the right. Whoever has the con(trol) has the touch screen too.

On the DuoMix is a Master Volume knob, a ME control(!), and a rotary Adjust Vol & Pan. You can see 12 channels on the screen, and get to any of the 24 using the backlit numbered buttons on the bottom.

Neat feature: if user B has the control screen, user A can still grab the volume control for the most recently chosen input.

You want accessory channels? They've got a versatile metronome in there. How about an auxiliary input? Run your i-device into the aux jack to share a track with the rest of the band. Intercom lets you talk to them. Ambient mic (there are two) are built in to the unit so you can mix some nearby noise into your monitors. This also mixes in the noise as your fingers hit the screen through the chassis, but that is a small price to pay.

This is where the Livemix starts to have

a personality conflict. It wants to be the sole component in the stage monitoring galaxy. It wants to make the monitor engineer redundant. But it won't, 'cos most performers need a fairly complex mix built for each song so they get a more 'produced' sound in their in-ears. And for that, you need an actual M.E. Or a younger version of me.

The EQ on each channel, is global. Same as dynamics which is a compressor for each channel. Adjust one, you adjust the sound for all DuoMix's.

My only suggestion for the product designer is to lock this out. I don't want Nigel the bass player touching this for anyone, least of all himself. The whole premise of live audio engineering is to keep control over the variable elements, which are of course The Performers.

The individual output from your side of the DuoMix presents as both a 3.5mm headphone socket and as a balanced 6.5mm jack. You could stuff that into a powered wedge nearby if you needed.

As with all personal monitor systems some musicians will connect their headphones or ear things direct to the box, so long as they are stationary and don't mind a cable.

If you need to feed wireless in-ear transmitters or a monitor wedge amp somewhere else, then you need the optional



DA-816 output unit which provides 16 balanced outputs from one rack unit back at one central place. I think you need (or should have) one of these in almost every situation.

The whole Livemix system maxes out at 24 inputs and 32 users on 16 DuoMix boxes. That's a bucket full of monitoring.

Small orchestra with more than 24 channels? No problem, sub mix some stuff on a monitor desk or from some FOH auxiliary groups. Does every muso need every drum channel? No they don't! Especially Nigel the bass player.

With PoE (Power over Ethernet) arriving by magic as soon as you connect the RJ45 to the DuoMix, I wondered if I could break some stuff by maxing out the power supply. So I turned up the headphone amps to 10, and boosted the bass, mid and treble all the way too. Both sides of the DuoMix were thus cranked. Then I turned ON the metronome. It was awesomely loud, if not slightly discombobulated. My ears are still ringing. Don't do this on stage.

There is a footswitch, for stuff like functions, I don't review footswitches, so read the manual?

Another available option is the mic stand holder that connects to the DuoMix, which I may add is very robustly made.

I'd like to be the monitor engineer with most muso's hooked up to these boxes. I'd only be worried about the singers. But wait: singers could use these too. Which threatens to make me redundant, if you could trust a whole set of performers to know what they need. Right.

Good product.



MANUFACTURER:  
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# Meyer Leopard

## Baby Big Line Array

BY JULIUS GRAFTON



Meyer kicked off in 1979 and were never just another loudspeaker co. They amazed everyone with the MSL 10 in 1979 and followed on by making a derivative, the MSL 3 in 1980. The product took off globally.

In 1994 the MSL 4 became the first self powered concert box for Meyer, and the firm went down this pathway with all future releases. Self powered meant better consistency as system engineers and designers had less opportunity for 'adjustments'.

Meyer is one of the very few big audio firms that has remained in the same family ownership for almost 40 years.

Early this year I met with the guys at CMG AV who were the first buyers of the new compact Leopard line array. Naturally they were enthusiastic about their investment, and it was instructive to see why.

Leopard is compact; loaded with dual 9" drivers built by Meyer and one 3" compression driver on a constant directivity horn. Out back is the electronics, as is the case with almost all Meyer product. On that subject, Meyer aficionados love the brand because system engineers CAN'T mess with the settings or change the amplification. That's a Meyer strength – amp and processor on board, no knobs or buttons.

You need to use some subwoofers, and Leopard is best matched to the LFC-900 subwoofer. This will fly with Leopard without different hardware, and is loaded with one dual coil long excursion 18" driver and a DUAL channel amplifier.

The woofer has TWO coils and takes TWO amp channels, and then travels a longer than usual distance. Ergo it performs better than if it were loaded with a regular single coil 18" driver.

Leopard is the junior member of the family that has Leo-M and Lyon product. It can be an underhang or side

array for those. Meyer insist you need to use their MAPP software to design and predict your system within any specific venue. They also say you should use the Galileo Callisto 616 array processor, which provides matrix routing, alignment, and processing for array components.

We ran a set of Leopard as part of our PA Shootout at ENTECH-ON-TOUR in five cities over February. I am not equipped to say how it sounds, as I have retired my critical listening faculty due to ear damage. But plenty of people liked it a lot.

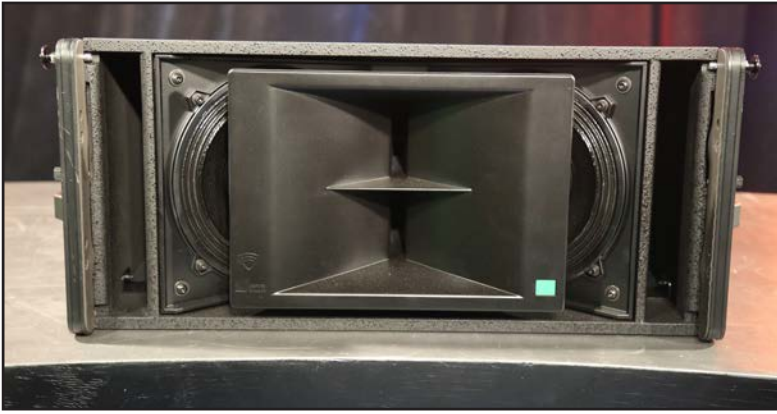
My observation is that less is more; one h/f device in front of a pair of 9" drivers will always have less acoustic complexity than a larger three or four way system.

Power to weight seems to be on the side of Leopard, with CMG reporting over 100dB at a distance of 60m with plenty of fuel left in the tank. Weighing a modest 34kg I reflected that the Australian Monitor AM1600 amps I once built were the same weight as this loudspeaker system with three inbuilt amplifiers!

Meyer do not report wattage, as they point out wattage values don't translate to SPL output. "(That is) really only helpful to end users who believe that specification of a system by watts is somehow related to available SPL, which it is not", Meyer told CX. "It's a bit like talking about the gear ratio of a differential in a car and wondering about top speed, not knowing motor RPM or transmission information."



MANUFACTURER: MEYER SOUND LABORATORIES, INC  
 WEBSITE: WWW.MEYERSOUND.COM  
 PRODUCT: LEOPARD LINE ARRAY ELEMENT  
 DISTRIBUTOR AU AND NZ: MEYER SOUND AUSTRALIA  
 PRICE: NOT SPECIFIED

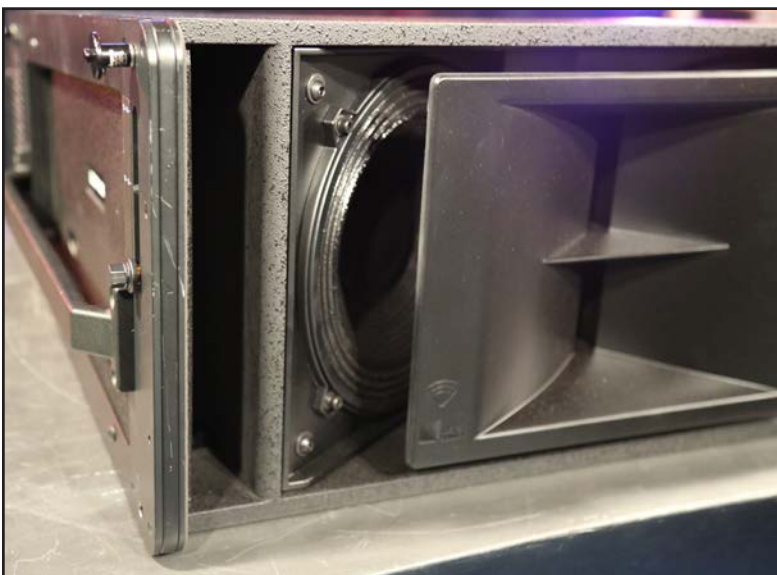


Frankly we agree. No one polices audio specifications and so far as we know no manufacturer has been pinged for making erroneous claims. Which Meyer do not do: they are known as conservative in their technical claims.

Meyer build their product to US military guidelines, which require very low variance across components. They check and match drivers against the criteria and don't sell sub-par product.

The 3 channel amplifier in Leopard is a D class - digital amp. This accounts for the lower system weight. It is also miserly on mains, requiring only 1.5 amps at peak, Meyer says. This makes life easier at the mains power dept.

That's pretty much it. Meyer have shipped 4,000 units worldwide in 4 months, which spells out success to us.

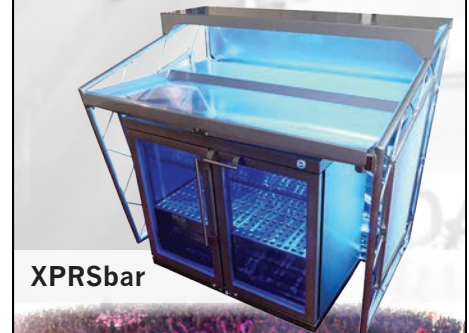


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# Martin Atomic 3000 LED

## Warfare via DMX

BY JULIUS GRAFTON



Martin Professional started in 1978 when the mercurial and sometimes amusing Dane, Peter Johansen figured out his wife's coffee machine could be the basis of a fog machine. It is unclear what she thought about that.

Thus followed an era of expansion through disco effects into DMX that culminated with the Mac 500 and Mac 600 in the later 1990's. These caught the imagination of the law firm that famously got rich working for Vari-Lite in Dallas. Much legal stuff happened.

Next era at Martin saw an industrial conglomerate control the firm, leading to a massive semi-automated factory in upstate Denmark. They then sold to the Harman group, who own AMX, JBL and another dozen audio brands.

The Atomic strobe burst on the scene a dozen years ago, and quickly became mandatory for rock shows everywhere. Prior to that the stroboscopic lamp was often enfeebled, hampered by smaller xenon tubes than the monster that Martin discovered and deployed in the Atomic.

Everyone knows what a strobe does, right? As a naive kid I wandered into an interactive art installation at Watters Gallery in Darlinghurst in 1971, where a little strobe built into a Dolphin torch case was the sole display in a room.

It was a new thing, and people were walking and running in circles with the stop-go jerk motion a real novelty. Someone took their clothes off. But it caught on, and soon every lightshow (mine included) required at least one strobe.

Getting DMX into a monster strobe made Atomic quite the bomb, and it still is. The original unit has an optional colour scroller as well, which many designers still specify.

But the legacy Atomic sucks a lot of power – all that mains inrush to the giant capacitors means you really need to lay on one circuit per Atomic for the legacy DMX Atomic.

Enter the Atomic 3000 LED, which as the name implies, does the business using LEDs. Amazingly Martin have followed the same general form factor and made it almost the same weight and size as its older DMX 3000 brother – 7.8kg.

But it uses way less juice – we saw three units on one circuit at ENTECH Roadshow in February.

The inrush current is specified at 17 amps, but this is purely the maximum startup current for each fixture. On other fixtures with ballasts, this can be up to 10 times the average current of the fixture. Circuit breakers are designed to compensate for inrush current up to 10 times. The current rating for 240 volts is around 3.5 amps average.

New and different to the DMX legacy Atomic, the LED has Aura (secondary LED array illumination) color mixing. It's an eye candy arrangement to take advantage of the reflector face of the unit, and comes from 64 Osram RGB LEDs. Using four channels of the 14 extended DMX channels, you can whistle up Aura colours that emulate LEE colour numbers, and effects, like 'colour wheel'.

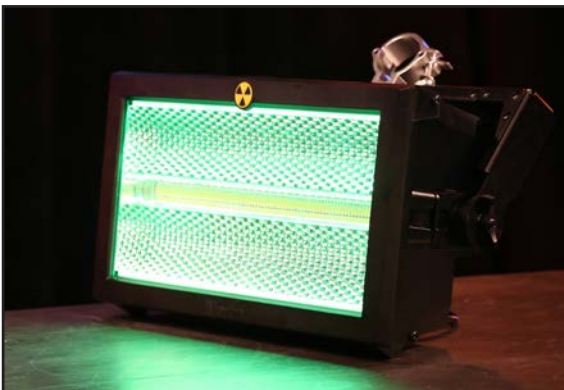
Another pair of extended DMX channels toggle a really long list of effect macros, like 'Police Car', 'Fire', 'Ice' and 'Knight Rider' amongst too many to list.

If you live in a simple world, three channel DMX control will give you basic strobe control, while four channel DMX adds on strobe effects.

The Atomic is a white (5700 degree colour temp) strobe and if you want colour, you add on the scroller. This takes power and signal



MANUFACTURER: MARTIN PROFESSIONAL  
 PRODUCT: ATOMIC 3000 LED  
 WEB: WWW.MARTIN.COM  
 DISTRIBUTOR: AU & NZ SHOW TECHNOLOGY  
 PRICE: \$6,499



from a four pin XLR on the Atomic LED. The legacy Atomic does not have power for the scroller, so an external supply is required.

There are several curves for the strobe, the buzz we hear is that designers like how the Atomic 3000 LED emulates a Xenon strobe which has it's own decay characteristic. A straight flashing light or LED doesn't LOOK the same as a Xenon strobe – but Martin have fixed this in the Atomic.

The light output appears to match the legacy unit, which leaves Atomic 3000 LED at the top of the pack in terms of brute power. We dialed it down by 90% and it was still far too much for our studio and our eyes.

One other significant difference is that the Atomic 3000 LED does not like the sun. Having little lenses over each LED, a dose of direct sunlight can cause damage or wreck the unit. All LED devices with lenses are similarly affected. And all LED devices are shy about bad weather too, so care is required.

Atomic 3000 LED gives designers more to work with.



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# Ayrton MAGICDOT-R

## Cyclops of Beams

BY JULIUS GRAFTON



The clever people at Ayrton in France, led by founder Yvan Péard (who designs everything they make) have developed a unique little beam device called the MAGICDOT-R. This LED moving light shoots a 4.5 degree beam – that's tight, folks.

In the old days, a small beam angle required a long lens tube. Things have changed in optical design – and getting this beam out of LED is awesome. They spent two years developing a single optical collimator, which consolidates the output of an Osram's 60W Ostar RGBW multichip LED. That is the holy grail of optical design – getting that square mirror of light into a smooth circular beam.

The overall mains draw for the device is 130 watts, so you could strap 18 of them on to one 10 amp supply.

Although it has a narrow (no pun) role as a beamlight, it delivers well. It pans and tilts FAST, and will go around twice before the cable says 'stop and go back'. There is no quoted spec for pan and tilt speed, so we just categorize it as FAST.

Colour comes from a 4-color mix (red, green, blue and white) ensuring a high color-rendering index (CRI). It has a virtual colour wheel, with white presets. The electronic dimmer does the business from zero to 100%, and there are various strobe presets.

The 1800 lumens that comes out the end is very respectable. The form factor of the MAGICDOT-R allows you to stack fixtures hard up against each other. The pan and tilt head is wholly contained within the footprint of the unit.

It is just a foot tall in the old measure, and we do like a bit of old measure in our biz. You can take this as 303mm if you are young or pedantic. The fixture is cylindrical, 210mm in diameter (and that is slightly over 8"). The visual balance and industrial design are first rate. It weighs just 5.3kg.

The AYRTON brand was born in 2001 when Aestétique-designs, lighting and technology amateurs & virtuosi got together. AYRTON is specialized in developing intelligent LED light products for Entertainment and Architectural applications.

They are based 18km south of PARIS at Longjumeau which is notable for producing footballers. All product is designed by founder Yvan Péard.





The packaging is also innovative. A dense protective foam shell is supplied inside the carton. The shell can be incorporated into your custom roadcase.

Ayrton designed a special phase-change liquid cooling system using a heat pipe – a sealed system used to cool high end electronic devices. Which is what this is. A small fan operates with virtually no external noise.

It will work in minus 10 degrees or plus 45 degree temperature ranges, better than some other digital lights.

Ayrton have combined excellent industrial design with some fresh thinking, and come up with a product which seems to do everything consistently. A new tool for lighting designers, in an exciting era!



MANUFACTURER: AYRTON  
 PRODUCT: MAGICDOT-R  
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# ROAD

APRIL  
2016



# SKILLS



**Editorial by Cat Strom**

*Simply Red Photography: Troy Constable*

*Spiderbait Photography: Ashley Mar*

*A\$AP Photography: David Youdell*

*A COUPLE OF ISSUES BACK WE REPORTED ON THE AUDIO ISSUES TAME IMPALA FACED AT THEIR SYDNEY OPERA HOUSE FORECOURT GIG. FANS SLAMMED THE SOUND QUALITY OF THE PERFORMANCE, WITH MANY SUGGESTING THE VOLUME WAS SO LOW THAT THEY COULD HAVE PERSONAL CONVERSATIONS MID-SHOW.*

*THE FOLLOWING DAY THE OPERA HOUSE RELEASED A STATEMENT SAYING, "WE WILL BE UNDERTAKING THOROUGH TESTING OF SOUND LEVELS AROUND ALL AREAS OF THE VENUE DURING TONIGHT'S SOUND CHECK AND FOR ALL FUTURE FORECOURT PERFORMANCES."*



LIGHTING ENGINEER  
PRYDERI BASKERVILLE



# SIMPLY RED

FAST FORWARD A FEW WEEKS AND '80S HIT MACHINE SIMPLY RED ARE PLAYING THE FORECOURT WITH MICK HUCKNALL'S POWERFUL VOICE SOARING WITH CLARITY AND PLENTY OF VOLUME ABOVE THE CROWD.

"It sounded exceptionally good," commented Bruce Johnston, Director at JPJ Audio. "There was some controversy with the Tame Impala gig that wasn't necessarily about the sound but more about the volume being achieved. Simply Red played at 92 - 95dB but sounded quite loud

Live Nation, Simply Red's promoters, use a different stage to Tame Impala; a domed enclosed stage as opposed to Tame Impala's open square roofed stage which does not contain the sound so well. Live Nation also implemented the stacking of shipping containers behind the stage to try mitigate the monitor rig sound going back towards the apartment buildings.

"We did approach the Opera House about doing some testing but they said it was too difficult with the noise

restraints of the site and so forth," Bruce said. "So we went about it ourselves. The containers were successful and we also engaged some help from d&b audiotechnik's designers to help us with some array processing design for the d&b PA to see if that might help with a little bit more distribution of the audio. We moved the delay tower to a different spot and also ran a separate little infill PA so if the main system was a little bit quieter, the people at the front didn't suffer as much which is what seemed to happen at Tame Impala."

The main hang at the Opera House comprised of 24 x d&b J8 and 4 x d&b J12 speakers with 6 x d&b Q1 for downfill. Subs were 12 x d&b J-SUB and 6 x d&b J-INFRA with 6 x d&b Q7 for front fill. The delay hang had a couple of d&b J12 and 6 x d&b J8 speakers.





JPI'S BRUCE JOHNSTON, DUNCAN KAYE & DEAN MIZZI



FOH engineer was Chris 'Privet' Hedge who had the luxury of traveling with a Britannia Row provided control and monitor package including a DiGiCo SD10 console and a rack housing a couple of Avalons for Mick Hucknall's voice, a TC6000 and a Maxx Bass across the final mix.

Simply Red did not have a monitor rig using solely in ear systems which would also have helped, however with a bit of design help, a lower PA, a different cardioid sub set, the infill and the containers, it appeared that audio volume problems were solved.

The lighting was designed by Woodroffe Bassett Design with Pryderi Baskerville making it all happen on the road. In terms of design, the show was fairly scaled down at the Opera House compared to the UK tour prior to Christmas but still packed a hefty punch.

"Essentially the stage comprises of two main arches, reminiscent of the tour logo, to try eek out the maximum amount of height in an orbit stage," commented Pryd. "It's sympathetic to the whole structure whilst being all encompassing."

A notable feature of the design were the four curvy towers built by Total Fabrications that are very lightweight and break down extremely quickly. Each tower holds two GLP impression X4's for back lighting the band.

"The idea behind the towers and also the eight white drapes, is that we have something that makes the stage ours when we are doing festivals and such,





rather than a generic black box,” explained Pryd. “The overhead rig may change on a daily basis but these features make it our show, an identity.”

Pryd is a big fan of the impression X4 favouring their light weight, zoom and brightness. Occasionally he substitutes them with Martin MAC Auras, which he also likes. Overhead in the rig were Clay Paky Sharpy Washes particularly handy for this gig’s low trim because of their low form. Martin MAC Vipers were on both trusses as well as the floor whilst Philips Color Kinetics Color Blasts are placed on both trusses.

Control was by two High End Road Hogs IV, freighted with the rest of the control package around the world.

“It means we have consistency and we can do any show anywhere,” said Pryd. “It’s a luxury but it makes our job a lot easier. For these kind of scenarios I really like the way the fixture abstraction model works successfully allowing the ability to change fixtures and retain your programming. The fixture abstraction model looks at real world values not just a DMX map, so when you clone the fixtures you won’t get anything embarrassing like when you hit your strobe palette you’re not going to get the lights re-setting. It knows that strobe is strobe.”

Chameleon Touring Systems supplied the gear and crew for the gig with Pryd singing their praises.

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# SPIDERBAIT



TO CELEBRATE THEIR 25 YEARS TOGETHER AS A BAND, SPIDERBAIT TOOK TO THE ROAD PLAYING OUR MAJOR CITIES. WITH THEM WAS THEIR LONG TERM FOH ENGINEER DYLAN RANSOM-HUGHES DEFTLY DEALING WITH IN HOUSE PA'S AND AN ASSORTMENT OF CONSOLES. THE ONLY GEAR TRAVELING WITH HIM WAS A HANDFUL OF SHURE MICROPHONES.

**FOH ENGINEER**  
**DYLAN RANSOM-HUGHES**



**H**aving toured the country numerous times Dylan knows many venues well, including their limitations, but Sydney's Metro Theatre is his favourite to perform in. "It's a good old rock venue," he said. "It's got the space and has a Nexo Alpha system I know well because I stacked it many years ago! I put it in a position I know works really well. Obviously it would be great if there was a line array in there but improvements happen slowly, they get handed down like old clothes. A d&b audiotechnik system would get me really excited as, like the base response of it, you know what you're going to get. But ultimately it's all about the person who sets them up."



Not surprisingly, Dylan describes the mixing of Spiderbait as loud but also exciting as the band never sound check. A long time ago they tried doing a sound check and found they didn't play so well afterwards so abandoned that idea. They don't rehearse much either - this tour saw rehearsals last about two hours. And that's probably the only two hours in ten years.

"They like to just get up there and start with a slow drum beat gradually getting faster and faster," added Dylan. "That's

basically my sound check! If anything is broken then, then that's the time to fix it. Within five to ten minutes, it's all sounding right and we're good to go."

So it's no surprise that Dylan keeps his mixing fairly simple with only seventeen channels, and that's only because Kram has two kick drums.

"Kram loves his delay," commented Dylan. "I'll give him a stadium sound all of a sudden and then back to dry and country. Their music can change from a country clippety cloppety song into an unexpected loud rock, so I change the effects with the dynamic of the music. It can be short and sharp, and then suddenly big and massive, then totally dry. I'm following his vocal line all of the time and because it is drum / vocal you have to, you can't leave the delay continually on. You have to choose your moments to insert the effects and then

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pull them out again otherwise you get twenty high-hats repeating which may not be a good thing!"

Although a Profile is Dylan preferred console, he isn't fazed by the various models he had to use on this tour.

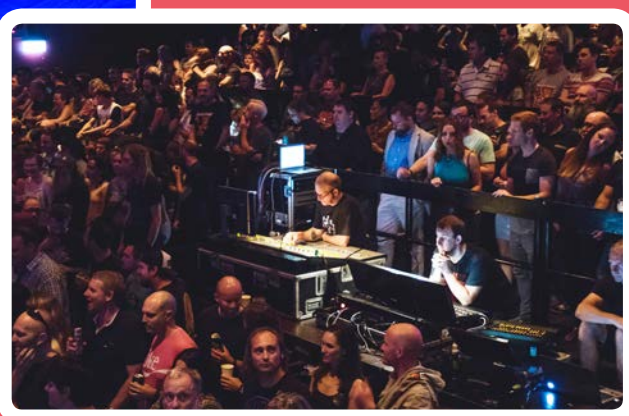
"I find the Profile easy to work around and do such things as turn eight auxiliaries on and off at the same time," he said. "Other consoles may sound better or have better pre-amps, but I find the work flow on them harder. It's more difficult to do dub on them, you can't add or takeaway effects quickly to multiple places. The Midas, DiGiCo or Soundcraft console may sound better but when you've only got a very short time to get it right, you've got to be quick."

Dylan described The Metro gig as great with even a bit of blood and over enthusiastic 35 year olds thinking they were young again. Kram apparently controls over zealous crowds quite well and at one gig said "if you guys don't calm down and let the girls come down to the front, I'm gonna come and kiss you all on the lips". Apparently that did the trick and they started the song again.



The Sydney gig included lights and visuals from Bryce Mace of Entertainment Installations.

Dylan will be spending the next few months mixing for Courtney Barnett through the US, including Coachella, and a string of European summer festivals. Not only does he do Courtney's FOH mix, he also acts as production manager, sometimes tour manager and runs the visuals too.



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# A\$AP ROCKY





## AMERICAN HIP HOP ARTIST A\$AP ROCKY HEADED TO AUSTRALIA IN FEBRUARY FOR A FIVE-DATE TOUR OF THE COUNTRY AS WELL AS APPEARANCES AT THE GOOD LIFE FESTIVALS, WITH MANDYLIGHTS IN CHARGE OF PRODUCTION DESIGN.

*"We were asked to create a whole new production design which will then be shipped back to the US," revealed Richard Neville, director of MandyLights. The main reason for the new design was that the venues varied so much in size - from the large Vector Arena in Auckland down to Eaton Hills pub in Brisbane - and they needed a production that was instantly adaptable to any size stage. Also, most of the gigs were back to back, so the set had to be able to move very quickly."*

**A\$AP** Rocky's people wanted a set that was big and psychedelic, 70's psychedelic as opposed to 60's psychedelic, and so MandyLights set about delivering a suitable concept. Richard and work partner Brad Salt didn't want to use any LED screens, especially for the festival dates that also had to be taken into account.

"We wanted a really clear way to differentiate his set at the festivals where he was back to back with DJ's just using the festival rig," explained Richard. "We needed something that could be set up very quickly and look completely different whilst not using LED screens."

The result was a set comprising twenty-six Lycra 'tube socks' made in-house at MandyLights. The tubes had alloy rings inside of them which enabled them to be stretched out whilst

retaining their shape. The rings also supported ShowPro Quad LED PARs mounted at the top and bottom, inside of each tube.

"Basically the tubes could be internally lit, have UV thrown at them via UV Canons or be used as projection surfaces for the two 26K projectors we had out front of house," said Richard. "Every tube was projection mapped so content could be pushed over all of them."

It was important that the tubes did not look like stock standard inflatables or corporate Lycra shapes which is why they were custom made. They needed to hold their shape but at the same time they could bend, flex around or move in a breeze bringing the stage to life.

Ten tubes form a back wall, four either side mask the DJ risers and the remaining eight are hung from the mid-stage truss.

Originally Richard and Brad experimented with oil projections but with the time frame of load in and rehearsals, they decided oil would not work. However, the idea led to the Lycra tubes idea although the UV paint on the scrims idea was dropped.

"In the end the tubes were the fastest way to change the entire visual look of the stage without flying in screens or hard scenic items," said Richard. "The entire set packs down



in half an hour to one and a half pallets so it can easily be air freighted."

Rocky traveled with his own lighting director Shaheem Litchmore and video designer Drew Best, which was just as well as the show moves very quickly with no set list ever the same. The show is very organic and there is never a set amount of people on stage, and Rocky's operators are best able to follow it.

"His visuals are anything and everything," added Richard. "With the production design, we wanted to give him something that looks cool and psychedelic that they could build on top of when needed."

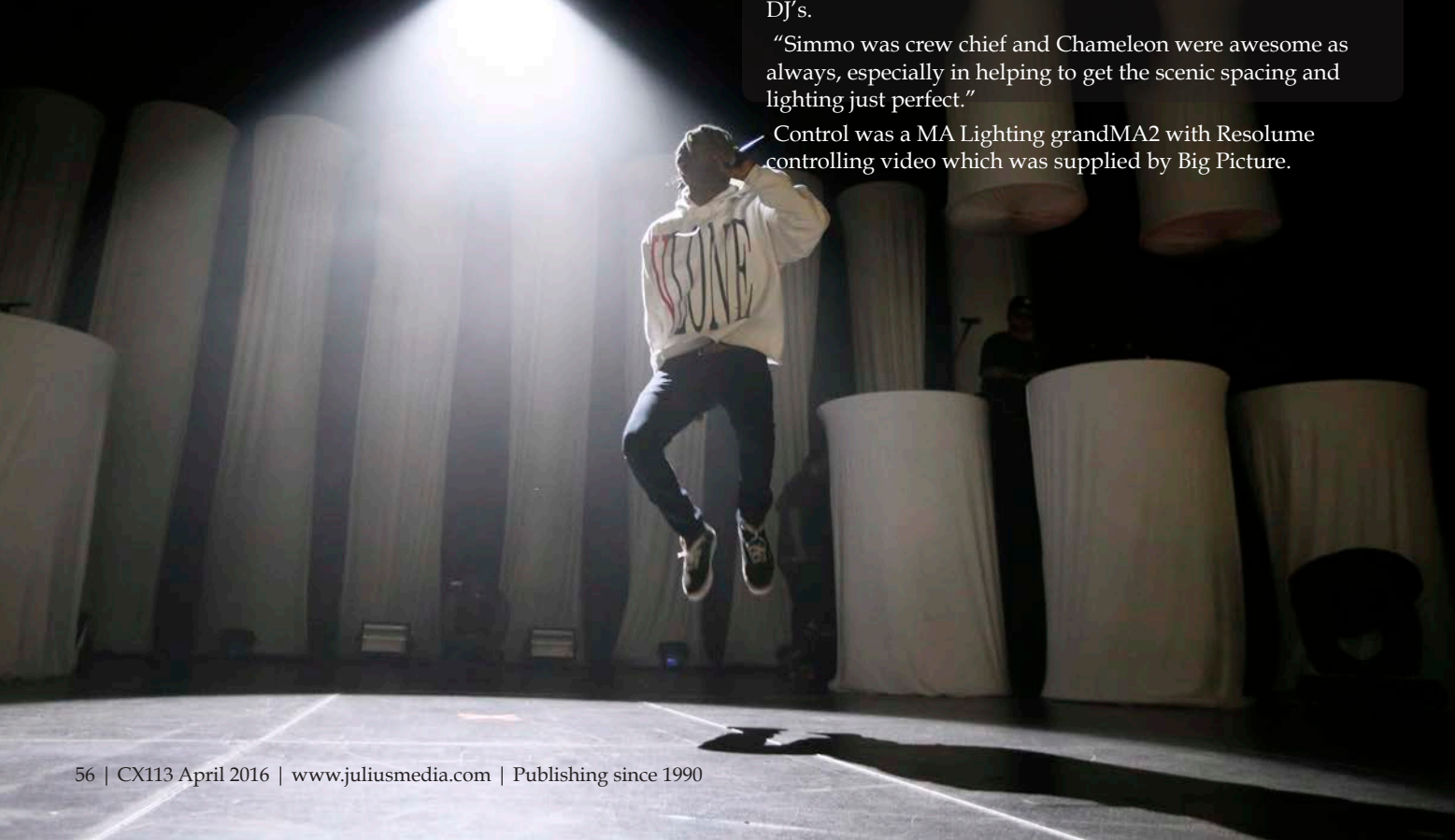
A variety of lighting companies supplied production around the country, mainly Chameleon Touring Systems with sideshows from Frontier Lighting, Creative Lighting and Spotlight NZ.

Mandylights did not include a front truss so as not to compete with the projection, preferring to have two side light towers each comprising six Martin MAC Quantums.

"We wanted to keep the lighting as theatrical as possible," Richard said. "The whole show was side lit with a bit of follow spotting when we needed it. Instead of using blinders, we opted for thirteen Clay Paky RGB white Stormys over the stage so we could use them as strobes too. We had Philips Vari-lite VL3000 Spots in the roof, on the deck and behind the DJ's.

"Simmo was crew chief and Chameleon were awesome as always, especially in helping to get the scenic spacing and lighting just perfect."

Control was a MA Lighting grandMA2 with Resolume controlling video which was supplied by Big Picture.





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# MISHKA GREENE

## LIGHTING TECHNICIAN

**MISHKA GREENE LOVES THE LOADING PART OF HER JOB. SHE SAYS IT'S CHALLENGING WORK THAT KEEPS HER VERY PHYSICALLY FIT. THE HEAVY WORK OF LIFTING AND RIGGING MEANS SHE SAVES LOADS OF MONEY BY NOT HAVING A GYM MEMBERSHIP!**

**M**ishka moved to Australia in 1990 from an industrial mining village called Panguna, in the Solomon Islands. As a teenager Mishka was always interested in installation art and painting and it felt like a natural progression to approach the local community theatres on the Gold Coast and volunteer to paint backdrops, so that she could get in and learn.



Years later, she was in a rural country town doing the same thing but all the while her knowledge was expanding and she found herself becoming more involved with the technical aspects of production. Techs in rural theatres have a broader scope of responsibility which was great for her as it enabled her to learn all the different areas of the theatre. In community theatre particularly the teams are generally smaller and staff have to multitask. As a result of this, Mishka learnt about a broad range of technical subjects but found herself gravitating towards lighting.

In the beginning, it wasn't her intention to become a lighting technician but after having the opportunity to do the work, she found the industry so infectious that it wasn't long before she left everything else behind. When she returned to Brisbane, she immersed herself into the theatre and live music scene and started doing lights in venues like The Zoo for a few years, and eventually moved to The HiFi. To get more experience and work, Mishka also approached and worked for Australian Concert Productions, Ivan J. Simons Productions, and the Queensland Performing Arts Centre.

She has been working in entertainment lighting for 13 years now as a freelance operator in and around Brisbane, building solid experience in areas like theatre, live music, boot camp style rural touring and outback festivals. Mercury Rev, Hermitude, Tricky, The Breeders, Battles, Head Pe and The Kills are amongst the many amazing bands and artists on her resume.

Generally, Mishka says she has been well received as a woman in this work, but there have been some rare moments where she has been made to feel uncomfortable. One tour took her to a rural theatre where she was looked up and down and bluntly told "we don't get women doing this job around here!"

This seemed to set the tone and it wasn't a pleasant day. While there were some confrontational moments Mishka worked hard to achieve a decent working relationship for the night. This tactic seemed to work as they ended up working as a team to achieve a successful show and parted on a fairly friendly handshake. She finds that in general - if you are up to the task and can put in as much as the guys, you are accepted by the greater majority of crew.

Being a freelance contractor Mishka works in a few different venues with different rigs and is very accustomed to working with whatever is at the venue, or hired. She can jump onto a Chamsys, Hog or Grand MA and pull off a great show. The lighting generally involves moving lights, par cans, strobe, haze, blinders and maybe some lasers or extras if she's lucky. Mishka says lighting is not just about flashing lights - that's the easy bit. It's about building the system, making it work, and still having the time to add creative nuances into the rig, programming beautiful and unique scenes into the show.

She builds good relationships with her clients by talking to them to see if they have lighting preferences or constraints. This can include palette preferences, placement of fixtures and also timings of moments in their show. Once she has the understanding of their needs she'll set the rig to take in all features mentioned and create the desired aesthetic. Mishka says operating the show is the fun bit and calls it 'expanding the music visually' by utilising the fixtures via the desk to react to the music and create a mood. She moved to Melbourne about a year ago after she had visited on tour and loved it. She was interested in increasing her opportunities for new work and just trying something new.

Mishka would never leave home without a minimum of 2 shifters, her leatherman and podger spanner. She says that if you're into lighting or rigging you will also become very accustomed to wearing a harness and hard hat. Her iPhone is a constantly used resource providing her with apps for just about everything from gel colours to programming information - reference materials in your hand on the job! She also wears steel cap boots, and hard wearing black drill saying it's a good way to protect yourself in a fairly frenetic and busy industrial environment.

She loves a smaller stage as she finds it allows more creativity and control of the visual. Big stages are exciting, but the small stage is her personal favourite for the intimacy it brings to a smaller audience. She is unimpressed when seeing her favourite band from half a kilometre away for 30 minutes at a huge festival. She has had some amazing feedback from artists, her peers and employers about her work that has made her feel joyful and says it's these things that keep you going and inspire you in an industry where production teams aren't necessarily recognised for their work.

Working with lots of different teams is the kind of environment where Mishka can utilise her resourcefulness, creativity and adaptability. She finds working in a team environment great as being an independent business person, life can get lonely so it's nice to be a part of a group working to achieve the same goal, but then it's sad to leave it once the show is done. The best part is that she has gained a great list of friends all over the world who she intends to visit in her future travels.

There are people Mishka feels lucky to have worked with saying they are very talented individuals who she has learnt a lot from. Some of the standouts are lighting designer Glen Hughes in Brisbane. Mishka finds his designs moving, stunning, rich and beautiful. Also live music design operators such as Chris Eichler from Melbourne and Regan Hammond in Brisbane. Mishka is inspired by their beautiful shows, work ethic and creativity. They are an invaluable, irreplaceable resource and have gone out of their way to ensure they pass on their craft and for this she will always be grateful.

Good advice from her is "when you are finally in a position to be that mentor or team mate, be kind and look out for your sisters out there, because although it is an industry that women can thrive in, it is coming from a male dominated past. There are fewer of us, and as such we should be there to support each other through hard times - of which there are plenty."

Her future plans include exploring new ventures like designing creative environments for private events utilising the skills she has learnt over the years and progressing her current career as a Lighting Technician.

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with Julius Grafton



## One Product Many Risks

This is about a 1.1 billion dollar company that has just one product. Basslink is the submarine cable that joins Victoria and Tasmania to each power grid. It allows feed in either direction after a short transition period.

**B**ecause Tasmania has a lot of hydro electric generation, the state can sell excess power to the mainland. When water runs low (like now as there is a drought) Tasmania buys juice from Victoria.

Basslink can carry 500 megawatts and peak a bit higher for a few hours. The underwater cable runs 290km, which is the second longest run in the world. It is high voltage DC, or HVDC. This means a single conductor is required. The current is converted at each end from AC.

So they laid the cable, built the infrastructure, and turned it all on in 2005. Everything went well, and as is the way with public infrastructure, someone with a big photo on a wall decided to sell it off. Asian interests bought the thing, and started charging users whatever they felt was unfair.

Some Pricing Regulatory Tribunal sets prices in parts of the transmission system to ensure consumers pay as much as they can tolerate. The system works well – most people flip a switch and the lights come on. The beer in the CX fridge is always cold.

Basslink got cocky and started consulting to other potential operators. Their engineer had a neat PowerPoint that boasted about their cable, which also contains a control line and a black fibre link for telecommunications.

Headed 'Marine Risk Mitigation' he details the issues. First you need 'ships of opportunity', or cable repair vessels. Australia has four. You need spare cable. Host regular



PICTURED: ILE DE RE

surveys. He detailed how Basslink communicates with the fishing industry – handy, as most trawler skippers prefer not to energize their ships with half a million watts of high current.

Rhetorical questions about best industry practice included 'Do you have insurance for your cable?' and 'Do you own or contract a repair platform?'

In every case Basslink say they aced the risk assessment. With a score regime of zero for no strategies and ten for a high number of strategies, Basslink rated themselves a healthy 7.00. No doubt this helped raise some funds at some stage, or assisted with the KPI for the CEO's bonus.

But on December 21 last year the cable failed, and Tasmania faced a crisis. The government re-commissioned some gas turbine generators in the Tamar Valley, and opened the valves at more hydro plants. They ordered 20 large diesel generators which are deployed around hotspots. Of the five industries that use 60% of all power, three agreed to scale back and use less.

At presstime the fault has not been found. It is not mechanical – the repair vessel Ile de Re did a full inspection. Basslink were, at presstime, staring at the void and trying to determine what went wrong and most crucially where.

Meanwhile the Tasmanian Government are denying they plan to completely drain at least one lake. Also meanwhile you can bet that the Basslink insurer are carefully re-reading their fine print to attempt to mitigate (reduce) payments to the cable firm.

Whatever the outcome, the costs will be pushed onto consumers to ensure profits are maintained for shareholders. And an engineer is re-doing his PowerPoint.

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**Australian Commercial & Entertainment Technologies Association**

The current landscape along with recent feedback indicates our industry wants, or certainly needs to develop and progress, minus the relentless box-shifting pressure; would a convention assist? This report is devoted to what may be one of the most important initiatives we will ever address, namely a platform to help elevate all participants to another level.

In proposing a national industry convention, several imperatives demand consideration. It should be conducted in a convivial environment with an appropriate work/leisure balance and minimal diversion. This means avoiding a capital city. The program should address personal, corporate and industry development equally, with social activity focussed on 'common denominators'. Most importantly, the entire event must resonate with, and be compelling to 'all' industry participants.

The scheduling for such an event would probably see formalities take place on Saturday and Sunday, with social events on Friday, Saturday and Sunday evening. Based on feedback, content would focus on development in three streams, personal, corporate and industry and a program sample could look something like the following:

**ACETA is your industry body, working to protect and further the interest of everyone who works in our profession.**

Web site: [www.aceta.org.au](http://www.aceta.org.au)  
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BY FRANK HINTON

## A Big Picture Issue – Does Our Industry Need a Convention?

### PERSONAL DEVELOPMENT

- Session 1 The Anatomy of Busy** – Are you effective or busy being busy?
- Session 2 The Anatomy of Public Speaking** – Establishing form and dealing with fear
- Session 3 The Anatomy of an Effective Meeting** – Meeting the needs of all stakeholders

### CORPORATE DEVELOPMENT

- Session 4 Understanding Product Compliance** – Convened and led by ACMA
- Session 5 Export Funding and Finance** – Convened and led by Austrade and Efic
- Session 6 SEOs, FOMO (Fear Of Missing Out) FOLO (Fear Of Living Offline)** – evolving scourges and syndromes that will undermine business and individuals

### INDUSTRY DEVELOPMENT

- Session 7 ACETA Planning Workshops** – small groups will address specific issues, and come together to set the agenda, an all-inclusive industry wide process
- Session 8 ACETA Annual General Meeting** – Including the board and office bearer elections
- Session 9 The State of the Industry** – Keynote address by guest speaker

Now to Social interaction, an informal Friday night welcome reception could be organised, with a more formal Saturday evening dinner (dance). Sunday, formalities could close with a late afternoon wine/food tasting party or some similar casual gathering. Some would stay on and experience the chosen area further, companies may opt to conduct their own corporate event following the Convention taking the opportunity to work *on their business* as opposed to *in their business*.

### EXHIBITORS

As with most industry conventions, for a fee we would make basic space available on the periphery of the event, and whilst not a trade show qualifying exhibitors could be, industry service providers and regulators including, media, trade events, Austrade, Efic and ACMA to name a few.

### THE DOWNSIDE – THERE IS ONLY ONE.....NO INTEREST!

### THE UPSIDES – ARE NUMEROUS AND DIVERSE

- This event is a measurable member benefit - another compelling reason to become one.
- The event is a low cost opportunity for personal development through workshops, and networking.
- This environment facilitates corporate development potential without distractions.

• The concentration of diverse skill provides the optimum forum for realising industry development.

The sheer number of individuals empowered by participation is not possible in any other forum than that which is proposed. Therefore the convention and its format offer the most natural opportunity for ACETA and industry development, including leadership (office bearing), involvement (board membership) and big picture necessities including succession of ideas and program streams.

The convention provides the opportunity for the industry to unify, to develop strength and understanding as the basis of creating opportunity and prosperity.

This convention is about inclusion from a one person business to the largest corporation and every entity in-between. Every individual and company will have the same development opportunity.

With the creation of an established fertile industry setting, some entities may choose to conduct their own private company meeting or conference. The same may be the case for industry sectors.

All associated costs for the convention are tax-deductible.

By its very nature the event facilitates the inclusion of life-partners, engaging them in the industry at its broadest and in a most conducive environment.

Establishing an industry convention may well satisfy the needs of those consistently talking about an industry run or controlled trade show. For some, this by the industry for the industry event may actually be what they want and will certainly take the spotlight off, and neutralise the trade show

narrative. In fact a convention may ultimately provide easier passage into our broad industry event aspirations. One thing is certain; it establishes options.

Establishing core convention components facilitates a base to develop further major elements in due course; examples could be 'The ACETA Awards for Excellence' with results announced at the formal dinner.

The ACETA Convention idea has already drawn the interest and could facilitate associated industries, particularly those with a natural synergy and member crossover, in mounting a concurrent convention and shared resources.

## SUMMARY

Thanks for your attention; it is of utmost importance that you take a moment to provide your input on this initiative. Could you please share this with;

[frank@attaudiocontrols.com](mailto:frank@attaudiocontrols.com)

or

[frank@questaudio.com.au](mailto:frank@questaudio.com.au)

Again, nothing will happen without a consensus one way or the other. Thanks for your time.



All the best  
Frank Hinton  
President ACETA

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# Are you concerned about your mate's mental health?

**FACT: Most Australian tech crew and roadies have attempted or considered suicide<sup>1</sup>!**

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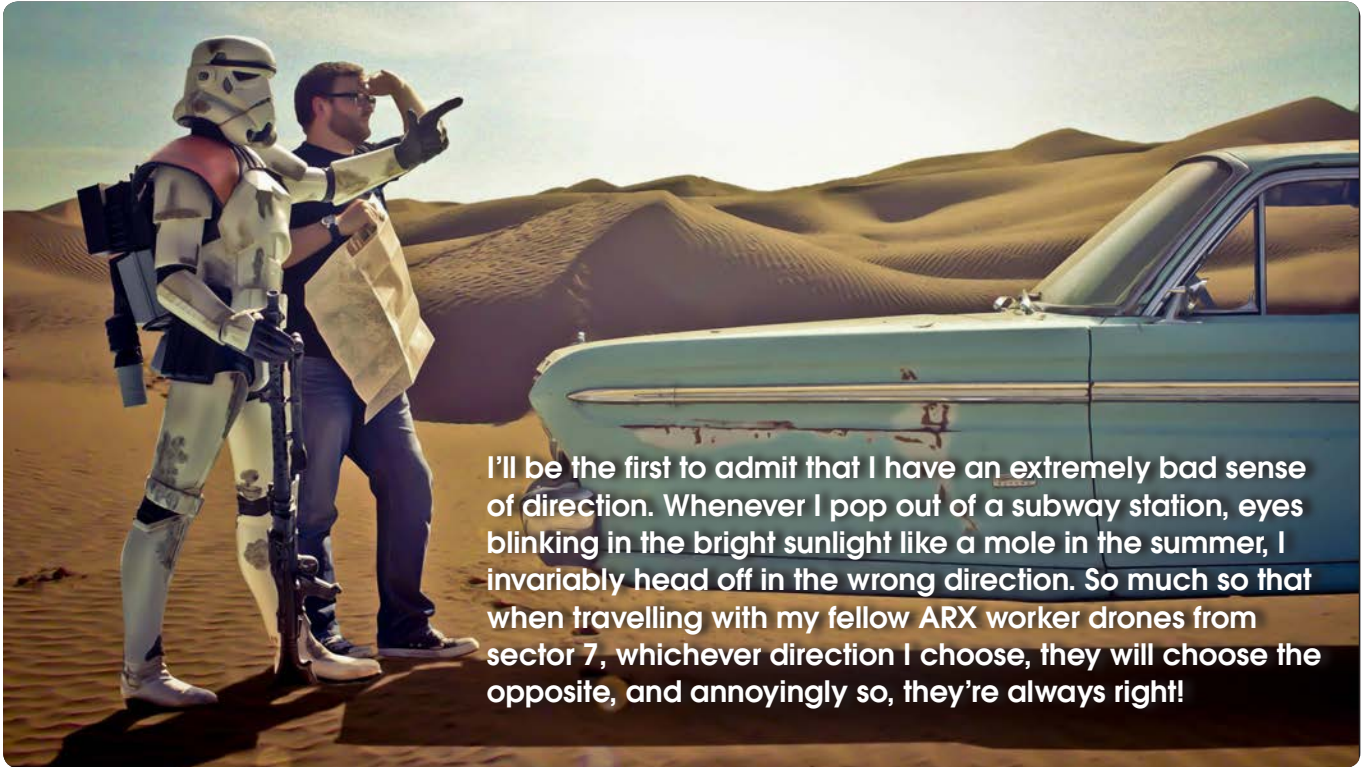
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<sup>1</sup>Passion, Pride, Pitfalls Dec 2014



## Toilet Trouble

Inconvenienced in the Conveniences



**I'll be the first to admit that I have an extremely bad sense of direction. Whenever I pop out of a subway station, eyes blinking in the bright sunlight like a mole in the summer, I invariably head off in the wrong direction. So much so that when travelling with my fellow ARX worker drones from sector 7, whichever direction I choose, they will choose the opposite, and annoyingly so, they're always right!**

**W**hat really gets me disoriented, though, are the toilets in hotels, restaurants, shopping centres and similar. You often have to walk down a corridor with a couple of turns, through a couple of doors until you find the actual toilets. Then, when finished you have to retrace your steps back to civilisation. And that's where my problems begin.

Usually I've been so engrossed in actually finding the toilet in the first place that on the way back I can never remember which way I turned. Was it left or right? A corridor might run in both directions, with not a sign to be seen. Sometimes when working with a band, I've gone off to water the horses and come back to a completely different bar in the same pub, staring vacantly at where the PA ought to be.

Or as happened in Hong Kong once, come back to a different restaurant in a multi food court complex! Hey - where did all my friends go? Have they run off and left me with the bill? (Sometimes they have, but that's another story!) It's hard enough in English, but having to explain in Cantonese sign language that I was 'lost in the toilet and can you tell me where the other restaurant might be?' while the waiters, all of whom probably speak better English than me, roll around on the floor laughing.

But I digress. Usually after the Frankfurt ProLight + Sound exhibition my partner-in-crime Colin and I head off to the UK

to catch up with old friends and rellos. Frankfurt to London is just around the corner in world travel terms, so it does seem churlish not to go visiting them when we're so close.

However this time I was travelling to the UK on my own, since Col had dashed off to family obligations back in Oz that couldn't be avoided.

So I landed in Heathrow airport and queued up while my passport and picture were checked by the Central Scrutinizer. It's always a little disconcerting when the Customs - sorry - Border Security person looks at your picture, sniggers and waves all their mates over to have a look, who then wander off laughing.

But not this time. A cursory glance, a shrug of his shoulders, and then I was through. Seeing the overhead sign for Baggage Collection, I headed off in that direction, and on my way I saw a sign saying Toilets, and a door underneath it.

I should point out here that when travelling, I'm always mindful of Her Majesty's advice, which is (and I'm paraphrasing here) 'One should never miss the chance to splash one's boots if the opportunity presents itself'.

Wise words, and ones which I strive to follow whenever possible. So, as Heathrow is a big, spread-out airport by anyone's estimation, and thinking that it may be sometime before I got the chance to go again, I pushed open the door

and followed a long corridor, which then turned, went through another door, turned again and deposited me in a large toilet/bathroom complex.

After a quick wash and brush up, I retraced my steps and made my way back out of the door and rejoined the path to the baggage collection area. I must have been the only one who had stopped for a leak, because pretty much all of my fellow travellers had gone, and I wandered along the corridor on my own as it twisted and turned.

Jeez it's a long way, I thought to myself, as I walked and walked, and then all of a sudden the corridor opened out into the familiar shapes of people, bags, and carousels.

But not my bags. And all the passengers were wearing turbans or saris, and yet I didn't recall anyone in a turban on my flight.

I found someone who gave the impression of working there, and asked him "Where are the bags from BA123 from Frankfurt?"

"BA123 from Frankfurt? Not here mate."

He made as if to wander off, but I persisted.

"What do you mean, not here? I've just got off the flight. Isn't this the baggage collection area?"

"Yes, but you said you came in on British Airways from Frankfurt. British Airways use Terminal 1. This is Terminal 2"

"But I just followed the signs to Baggage Collection, so it must be Terminal 1, mustn't it?"

"Well, if you say so. And yet here you are in Terminal 2."

And then it dawned on me - the bloody toilets! I must have either come out of the wrong door and joined a totally different path, or come out of the right door but gone in the wrong direction. No wonder it was such a long way, and that there were no other passengers going my way once I came out of the toilets!

He started to move off again, figuring he'd done enough work for the day, but I ran and stopped him.

"So how do I get to Terminal 1 from here?"

"You'll have to go outside and walk right around the airport to get to it. It's quite a long way," he added unhelpfully, taking the opportunity to slip away while I pondered all this.

Still, when the going gets tough, the tough get going and find a short cut.

I went out into the Arrivals area and found a British Airways lady, and explained my situation. She smiled a lot, looked at my ticket and passport, then said "Well, let's see if we can help you out, Mr Fry."

She took me over to a Supervisor and gave her a shorter version of my story, while still keeping the vital 'lost in the toilets' part.

The supervisor smiled a lot at this, too, and said "Looks like I'll have to take you airside myself, Mr Fry. We'll go through the back way to Terminal 1... er, you won't mind being searched, will you?"

I nodded my assent, and she whisked me through a door where a very efficient person with a weapon at his side made me put everything in my pockets on a tray, then expertly patted me down.

"OK, he's clean." he said.

"Let's go then," said the supervisor, and then led me through a maze of corridors at a brisk pace, while I tried to put everything back in my pockets at the same time as keeping up with her.

We eventually came to a locked door with an armed guard outside. He searched me again, then unlocked the door for us.

The supervisor shook my hand and said "I'll leave you here Mr Fry. Thanks for making this such an interesting and eventful day - in a good way!" She smiled and I walked through the door into the Baggage Hall.

The place was deserted, except for my solitary bag going round and round on the conveyor belt, like a hamster on a broken treadmill. I grabbed it and made my way to the exit, a little later than planned.

Cue big TV announcer voice "Coming soon to a late night shopping channel near you - it's the ToiletTracker™ app for your smartphone. For all of us who suffer from the heartbreaking DDD - Dunny Dyslexia Disorder, help is at hand!"

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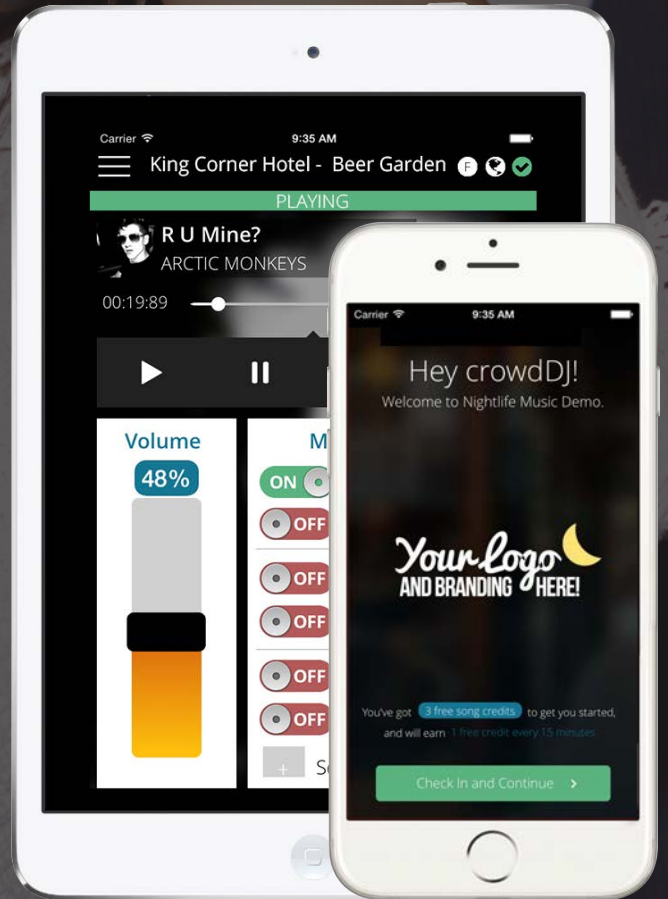
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