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I Saw A Pretty Woman In New York

by Julius Grafton

Like many visitors to New York, CX seeks out new musicals and attempts not to read up on them beforehand. Thus recently we've seen 'Beautiful: The Carole King Musical' which has also had a good run in Australia. Newer is 'Pretty Woman – The Musical', which we caught at the Nederlander Theatre.

Almost 100 years old and with 1,232 seats, the Nederlander last had a real hit with 'Rent', which ran twelve years until 2008. The past decade has seen a cavalcade of flops and modest running shows like 'Million Dollar Quartet' and the self fulfillingly titled, 'Disaster!'

The book for Pretty Woman follows the movie closely including some of the one-liners, like: 'I'll be your beck AND call girl'. I do like that one. The leads are close to the original movie actors too, and the slimebag lawyer is – just like a slimebag lawyer.

If you haven't seen the 1980's movie starring Richard Gere and Julia Roberts, it's about a filthy rich dude who lands in LA to do a deal and decided he needs some rented company. He chooses Roberts who is a wholesome country girl gone slightly bad, and 'saves' her from the rental business. While she saves him from himself, a ruthless moneyed vulture. Cue: live happily on the royalties.

I was impressed at the economy of David Rockwell's scenic design, with streetscapes reduced to iconic outlines, and spectacles banished. It came back to the story, which is quite strong, and added in the device called 'the musical' which is where it struggled like many other 'non jukebox musicals'. Written by none other than Bryan Adams and his collaborator Jim Vallance, you get professionally crafted songs, but you don't go out the door humming any of them.

This line for the female lead Vivian Barks grated: "It's true, I sold my body/ But I never sold my soul/ I've learned I don't need anyone/ It's me who's in control." Yup. It gets worse too.

Lighting design by Kenneth Posner and Philip Rosenberg is professional and unremarkable, but the sound design by John Shivers (assisted by David Patridge) had me reaching for the research as the system was unusually all point source instead of line array. It was very adequate, I must add.

Turns out it is one of several Broadway installations of a KV2 speaker system by Shivers and Patridge who are said to prefer point source due to physical limitations of placing line arrays. They used narrow footprint full range ESR215s at left and right with an SL412 point source speaker system for the centre. Naturally there was a bunch more KV2 doing fills and balconies.

I suspect the KV2 gave them a touch more gain before feedback when some of the leads were working on the covered-over orchestra pit as well. It was a pleasant surprise to see something a little less common work as well as this did.

Verdict: A worthy musical, professionally delivered across all departments.

Hitachi Projectors to be re-branded Maxell

Maxell and Hitachi Japan have announced that the current Hitachi branded projectors will be rebranded as Maxell. In Australia and New Zealand, the projector business will remain under the control of Hitachi Australia, and the company reassured that it would be business as usual, notwithstanding the transition of the branding from Hitachi to Maxell. The transition will see no change in products beyond the logo, nor in representation, warranty conditions, sales channels, repair agents or customer service.

This will be a progressive change starting from November 2018 onwards, and will not apply to Hitachi Australia's range of commercial flat panel displays, which will continue to be manufactured under the Hitachi brand.

Matt Hanna, Deputy General Manager, Hitachi Australia, commented, "Maxell is a brand well known for its strong investment in the development of new technologies in a commercial space. The move will allow Maxell to focus on enhancing its already broad range of business-to-business hardware, which in turn allows Hitachi to focus on key areas of its social innovation business.

"For a number of years, the distinctive imaging and optical technologies of Maxell, seen in the Hitachi projector products, have been trusted and valued by the market. By strengthening the value chain from design, to production and distribution, we can continue to meet the evolving needs of the market. Putting the Maxell brand on projectors is a logical change, as it places us in a better position to further strengthen and expand the business in the future."

The Maxell Group acquired the projector business from Hitachi in July 2013. Since then, the Group has continued the development and production of Hitachi brand projectors and has been selling them worldwide.

The P.A. People ShowMatch Sydney Kings

After almost 25 years Sydney's The P.A. People have returned to their rental roots, purchasing a Bose ShowMatch Delta-Q array loudspeaker system for their Event Communications department.

"We have been looking for the right opportunity and the right product for quite some time," said Chris Dodds, Managing Director of The P.A. People. "I first heard the ShowMatch system two and a half years ago before its release and I was impressed. Since then there has been critical acclaim at the product launch in Australia and some great reviews of the product in use. We felt that the form factor was appropriate and the tonality of the system suited most client's needs, and for a small system it does get loud without losing control. We had used a demo rig on a show earlier in the year, and we recently installed a small system at Riverside Stables. We were again impressed at what we heard."

"A few weeks ago we were asked if we would like to bid for the provision of Audio and Comms supporting the Sydney Kings home games at Qudos Bank Arena, and it seemed like a great opportunity to invest in a speaker system to support our communications system offer." Dodds continued. The ShowMatch system is unique in array technology, in that it combines the best of both traditional line array design with the benefits of a constant curvature system in the near field.

"We rigged the system for the first time on the Monday and then spent a couple of days rehearsing with the system," Dodds explained. "The rig for the Kings in Qudos Bank Arena consists of six arrays, each comprising eight ShowMatch cabinets and a cardioid bass array of three 18" SMS118 sub cabinets. Each pair of main arrays uses a different combination of SM5 (5 degree), SM10 (10 degree) and SM20 (20 degree) cabinets to achieve the appropriate vertical dispersion." Waveguides are available to tailor the horizontal dispersion from 55 to 120 degrees.

"We have then selected 100 degree waveguides for the SM5 and SM10 cabs, and 120 degree guides for the SM20s," commented Anatole Day, system engineer for the initial arena install. "That way, we are able to match the dispersion of each cluster to the requirements of the venue in both vertical and horizontal planes. We also added four SM20 cabs on the lower ring of the gondola to help bring the image down closer to the action for the court side ticket holders."

The P.A. People have opted for an entirely Dante based signal distribution system for the Kings. The system is in and out of the Arena on a regular basis so being able to connect a single cable for signal distribution is great. The system is based on a Yamaha QL console and a pair of RIO1608 boxes to collect and distribute the audio from the system engineering location, the video replay systems, the OB trucks, and the PA itself.

The system for the Sydney Kings is rounded out with a comprehensive Clear-Com Communications system centred around a Delta matrix frame, V-Station matrix panels, Helixnet digital partyline beltpacks and an integrated FreeSpeak II wireless solution. "The Comms system is fantastic," said Matt Byles, Technical Director for Great Big Events. "Having the Freespeak II system fully integrated with the Matrix panels and the partyline provides us with a level of functionality we haven't achieved before at the Kings, and the wireless coverage is fantastic in a venue where many other suppliers have failed."

"It is almost twenty-five years since we left the large-scale Audio market with the sale of our iconic Turbosound TMS-3 rig in 1995, but it is great to be back in the space with a new market leading sound system. We look forward to letting our customers hear what it can deliver for them" Chris Dodds concluded.

Photo Credit: Sam Dodds

Australian Monitor targets pro audio sales with new appointment

Australian Monitor has appointed Mark Condon as National Sales Manager as it looks to strengthen its position in pro audio and commercial AV markets across Australia. Condon brings over 18 years of AV industry experience to the role, across commercial installation and live sound production. He joins Hills after eight years with Yamaha Commercial Audio Australia, most recently in the role of Technical Sales and Support Manager for Northern Australia.

Prior to his role with Yamaha, Condon worked with The P.A. People in project management, system design and sales, and has worked as a freelance audio engineer since 2001, providing live sound and touring solutions for music venues and production companies across the greater Sydney region.

Hills CEO and Managing Director, David Lenz, said Hills continued to advance the Australian Monitor brand, with a significant investment in research and development, and recruitment of staff to accelerate sales growth.

"We're investing in people, processes and product to ensure exceptional outcomes for our customers," Lenz said. "We've completed a refresh of the entire product line with new releases to come, and we have the expertise to support integrators with system design and engineering."

General Manager of Australian Monitor, Euan Brown, said that Condon would work with consultants and dealers to grow awareness and expand the Australian Monitor business within the pro AV sector, strengthening and expanding sales channels and developing strategies to drive growth across the region.

"Mark's experience as an audio engineer and system designer means he understands the needs of the end user and can advise the best solution for the application," Brown said. "His expertise will be an asset as we strengthen Australian Monitor's presence in the commercial installation sector."

Mark Condon

Inside the new East building

Adelaide Convention Centre

TLC rebrands as 'The Lighting Collective'

TLC Global has been experiencing development and continued growth in all avenues of their business, and along with growth has come a need to define who they are and what they stand for. As part of this process TLC Global is proud to announce that it is changing its name to TLC – The Lighting Collective.

The name change reflects the Collective nature of the organisation; from the experienced team of lighting designers, operators and technicians that they are as well as the collection of manufacturers, brands, products and technologies that they distribute and proudly represent.

TLC are proud of the brands that they represent and the collection represents a diverse cross section of cutting edge technology and reliable engineering.

"The new name is a reflection of the company's growth as it has evolved over time," remarks TLC's Managing Director Davey Taylor. "I am very proud of our roots and where we have come from, I have been fortunate enough to be a part of a wonderful journey through many forms of the business and are pleased to see where we now stand. I am lucky to have such an incredible team behind me and am grateful for the role we get to play in our industry together. We are passionate about the entertainment world and enjoy the opportunity to work with creative and like-minded people day in and day out."

Adelaide Convention Centre Selects Riedel Communications MediorNet and Artist

The Adelaide Convention Centre (ACC) has deployed an expansive signal transport and communications backbone powered by Riedel's MediorNet real-time media network and Artist digital matrix intercom system. MediorNet provides integrated, decentralised, and fully redundant signal distribution and processing throughout the Centre's three buildings, with an available capacity of 1,092 Gbps and the ability to route more than 1,000 simultaneous HD-SDI signals.

Situated at the heart of Adelaide's iconic Riverbank precinct, the ACC opened as Australia's first purpose-built convention centre in 1987. The Riedel network is part of a recently completed AU$397 million redevelopment, which included the addition of two new buildings (East and West) and saw the venue emerge as one of the world's most modern, flexible, and technologically-advanced convention centres. Each year, the ACC delivers approximately 700 individual events, welcoming 200,000 delegates and guests.

Riedel MediorNet represents a significant upgrade over the ACC's previous infrastructure, which relied on analogue audio multicores, RGBHV video cabling, and DMX over copper cabling. The decentralised MediorNet backbone affords the ACC the ability to route any type of signal from any point in the venue to any other point or points in the convention centre without requiring staff to reconfigure any cables.

"Previously, running the signal cables to support a client event could take up to two hours. Now we're able to configure the MediorNet components in just a few minutes", said Matthew Stanton, Technology and Venue Operations Manager, Adelaide Convention Centre. "The time savings and reduced labour mean that we can offer more flexible services to our clients and accommodate last-minute requests, such as increases in signal counts. This kind of flexibility simply wasn't possible with our previous infrastructure."

Deployed in a decentralised configuration, the ACC's MediorNet backbone ensures fully redundant distribution of all signals including video, analogue and digital audio, intercom, ArtNet lighting control, AV control system signals, and data for speaker support. Each of the three ACC buildings is outfitted with a MediorNet Modular mainframe paired with a MetroN core router. MetroN provides robust video router functionality with switching delays of <40ms as well as high-speed re-routing. The frame can function within a larger MediorNet installation, interfacing with other MediorNet nodes via fiber.

The ACC also has 23 MediorNet Compact and Compact Pro stageboxes for portable signal distribution at locations such as stage floors, grids, and front-of-house positions. There are also five MediorNet MicroN high-density media distribution network devices for additional signal distribution requirements. One of the MicroN devices is configured as a dedicated multiviewer using the MediorNet MultiViewer App. For robust crew and staff communications, an Artist 128 digital matrix intercom mainframe supports wired and wireless intercom beltpacks, with signals distributed throughout the three buildings by MediorNet. Riedel's Performer Digital Partylines are carried over the MediorNet Compact Pros via native AES3 paths, which are all connected to the Artist matrix via MADI.

"The ACC is a dazzling showcase for everything that sets MediorNet apart from its competition — namely, decentralised signal routing, redundancy of core components, and the flexibility to set up point-to-point or point-to-multipoint configurations on the fly and with minimal effort," said John Bell, Riedel Communications General Manager, Australia. "With the modularity and scalability to grow the system as the Centre's requirements expand, MediorNet is a valuable competitive differentiator as the ACC continues to compete for global convention and event clients."

d&b Soundscape installed in Australia, in stock to buy, as NAS delivers training

NAS Solutions hosted two days of d&b Soundscape training at their Melbourne headquarters, with a who's who of consultants, integrators, and influential sound designers sitting in-depth design and specification training on Tuesday 20 November. Wednesday 21 November saw a more informal demonstration, which CX attended.

NAS's Thomas Kelly presented an expanded version of the demo that ran in August at Integrate, including a new application video featuring Australia's own orchestral mix wizard Tony David Cray, who pointed out that "The Stereo bus as a medium is flawed," an observation that is more than borne out by the clearly superior results delivered by Soundscape. NAS's Max Hedrich and Brad Kivela were on the desk, DAW, and Soundscape interface, with Max tracking Thomas's position in the room to the system via an OSC app on his phone.

This is the first occasion globally that CX knows of that an independent distributor has run training and demonstrated d&b Soundscape without a d&b employee involved, which is a huge vote of confidence in NAS. "d&b audiotechnik are highly supportive of us rolling this technology out locally," said NAS's Managing Director Shane Bailey. "We are really excited to be supporting this system in our territory."

The first d&b Soundscape system in Australia is already operational, with the Sydney Opera House's Joan Sutherland Theatre graced with a 231 loudspeaker solution, including the five main hangs of d&b T-Series. The heart of Soundscape, the DS100 processor, is also now available for purchase, with stock ready to go at NAS.

by Jason Allen

Max Hedrich and Brad Kivela

Shane Bailey

Thomas Kelly

Vale Scott Allan

November 20 I woke up to the news of Scott Allan's passing. Like everyone who I have spoken to in Australia since the news broke, it came as a complete shock and left me speechless. Scott was an inspiration and a mentor to me from a very young age. He was nothing short of an amazing lighting designer and collaborator.

I first met Scott at The Gold Coast Arts Centre which is now known as HOTA (Home of the Arts). Scott was the resident Lighting Designer for The Gold Coast Arts Centre for eight years and the Production Manager for four. During his time at the Gold Coast Arts Centre Scott was overseeing the full operations of the musical theatre programs, touring productions and The Summer School, a Queensland Education in the Arts program. I was a part of the Summer School program that the in-house productions department ran to expose performers and technicians to a professional theatre workplace. The first production I did there with Scott was High School Musical, closely followed by The Boy From Oz and All Shook Up. I'll never forget my first day there or my first time meeting with Scott. Scott sat us all on stage and pulled out his laptop and attempted to explain this crazy industry and what a lighting designer does. Something he said that day got me hooked on lighting. Maybe it was the crazy amount of lighting paperwork he was showing me, or his amazing production photos of the shows he was lighting, or perhaps that he answered all of my one hundred crazy lighting questions.

Scott and I kept in touch over the years and met up when I was in Melbourne or Sydney, on two occasions he took me around the Entech trade show to meet suppliers and other movers and shakers of the Australian industry. He was a huge supporter of what I was trying to do with my career and what was even more amazing is that he was a huge supporter of many other up and coming young lighting designers and technicians, not to mention performers and anyone who had an interest in theatre. Scott had an amazing presence of professionalism, confidence and understanding, and above all cared deeply about young theatre artists and technicians, and found joy and happiness in mentoring them. He contributed as an educator and mentor, presenting workshops and master classes for ALIA, Victorian Opera, Young People's Theatre, TAFE, Catholic Education Victoria, and Hunter School of Performing Arts.

Scott also enjoyed a very successful career as a lighting designer for companies such as Hunter Valley Theatre Company, Sydney Theatre Company, Ensemble Theatre, The Production Company, Manillia Street, Queensland Ballet, Straightjacket Productions, Midsumma, Victorian Opera, Flying Teapot, Opera Hunter, La Mama, Young Dancers Company, Melbourne Opera, and Australian Dance Theatre.

Scott was a professional member of the Association of Lighting Designers (ALD), and was Treasurer of the Australasian Lighting Industry Association (ALIA) for seven years.

Scott had such a genuine passion and joy for this industry. To give you an idea of how much he loved the industry he recently started work as a lighting technician again at his local theatre in Melbourne. When asked the question in his interview, "Why does someone of your calibre want to work here?" He replied "Well, it's fun, and it beats a gym membership".

The Australian stages are darker without you Scott. There are many people who admired what you did, how you did it, how you helped people in this industry and above all how much of a genuine person you were. You will be deeply remembered. The cracked earth gobo just won't be the same.

RIP My Friend.

Mitch.

by Mitchell Fenton
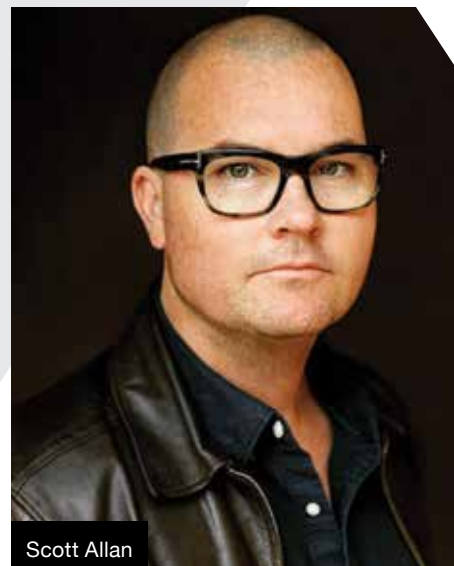
Scott Allan

T1 PROFILE™

T1. The new ONE and only fixture you need for Theatre, Television and Touring.

T1 Profile is full of theatrical subtlety. The new revolutionary MSL™ (Multi-Spectral Light) LED engine provides an output reaching 11.000 lumens with CMY colour control. The DataSwatch™ filters contain a selection of pre-programmed colours via the new generation RCC™ (Robe Colour Calibration) algorithm with a wide ranging 2700K to 8000K CCT control. All this combined with our crisp framing shutter system, variable frosts, specially designed breakup and aerial gobos, gives you total control of your designs in theatre, television and touring. You need only ONE. T1.

Q-SYS NS Series Network Switches

The Q-SYS NS Series offers a range of enterprise-grade, Dell-manufactured network switches that have been pre-configured specially to meet the performance requirements of the Q-SYS Platform, as well as network AV technologies including AES67 and Dante. With a primary focus on Q-SYS audio, video & control (AV&C), these network switches provide an out-of-the-box, plug-and-play solution for Q-SYS integrators building local AV networks.

Australia: TAG
tag.com.au or (02) 9519 0900

New Zealand: NSL
nsl.co.nz or (09) 913 6212

Optoma 4K550

The Optoma 4K550 benefits from 3840x2160 resolution, fast DLP UHD chip switching, and XPR technology, allowing 8.3 million pixels to be displayed on screen. Facilities installing more than one projector can benefit from using the built-in software allowing control of multiple projectors from one central location. The software enables each projector to be remotely monitored, managed and controlled in different rooms from one central computer. Users can manage up to 250 projectors at one time from one central device, altering settings and setting up email alerts for warning messages via the simple to use web browser page.

Australia:
Amber Technology
ambertech.com.au
or 1800 251 367

New Zealand:
Amber Technology
amber.co.nz
or (09) 443 0753

Sennheiser HMD 300 PRO

The new HMD 300 PRO broadcast headset delivers exceptional fit and comfort for long production days. The new series is available in single and dual sided models and features a soft, notched headband that reduces wearing tension on top of the head, as well as newly designed ear pads with a comfort zone that decreases pressure for users who wear glasses. The HMD 300 PRO headsets are also equipped with selectable (on / off) ActiveGard limiter that protects users from excessive sound pressure levels greater than 110dB, as well as a modular cable system to quickly interface with a wide range of professional broadcast equipment.

Australia: Sennheiser en-au.sennheiser.com or 1800 648 628

New Zealand: Sennhesier en-nz.sennheiser.com or (09) 580 0489

NEW GEAR

Robe T1 Profile

The Robe T1 Profile was designed to fulfil the requirements of diverse applications within one comprehensive fixture. The new Multi-Spectral Light LED engine provides an output of 11,000 lumens. With CMY colour control, DataSwatch filters containing a selection of pre-programmed colours via the new generation Robe Colour Calibration algorithm and a wide ranging 2700K to 8000K CCT control, all variations of colour are possible. The precise needs of theatrical dimming are catered to with Robe's 18-bit dimming system. In addition, the high CRI of > 93 provides natural skin tones.

Australia and New Zealand: Jands
jands.com.au
or +61 (0) 2
9582 0909

LIGHTING | AUDIO | VIDEO | STAGING | INTEGRATION

Apart Audio Design

The Design in-ceiling back can loudspeaker from Apart Audio features a sealed back can and bass reflex port, providing controlled audio performance in any ceiling structure. The slim housing design has minimal built-in depth and is tuned to optimise bass and midrange performance while maintaining sonic consistency. Installers change power settings easily between 70/100 volt or 16ohm using the power selector located at the front of the speaker.

Australia: Amber Technology ambertech.com.au or 1800 251 367

New Zealand: Amber Technology amber.co.nz or (09) 443 0753

LD Systems Maui P900

The Maui P900 is a column array speaker system crafted from a solid block of aluminium, fitted with 50 premium grade transducers. Powering the systems is an integrated 1400W RMS Class D amplifier with DynX DSP, producing a continuous SPL of 121dB. The system has line inputs, as well as aptX and AAC coding for HD Bluetooth streaming. A second P900 system can be paired wirelessly for stereo applications.

Australia: AVE avecorp.com.au or (03) 9706 5325

New Zealand: Direct Imports directimports.co.nz or (06) 873 0129

Sonance Landscape Series

The enhanced features on the Sonance Landscape Series include the addition of the Sonance Laminated Core Transformer with an adjustable tap and new larger drivers and woofers, providing outdoor hospitality and venue environments with more power and flexibility for system design and application. With an all-weather design and IP66 rating, the speakers are designed and made with marine grade durable dark brown composite material that won't corrode or flake over time, ensuring the Sonance Landscape Series keeps premium outdoor audio going from season to season.

Australia: Amber Technology ambertech.com.au or 1800 251 367

New Zealand: Amber Technology amber.co.nz or (09) 443 0753

Electro-Voice ZLX

Electro-Voice has announced two new additions to its ZLX series: ZLX-12BT (12-inch 2-way) and ZLX-15BT (15-inch 2-way), both Bluetooth-equipped for audio streaming from any mobile device. Perfect for music playback or accompaniment, the ZLX-12BT and ZLX-15BT also offer easy setup via four presets, sub/top system-match, two-band EQ, five user-programmable presets, visual monitoring of limiter status, input level control and meters, and master volume control to optimize gain structure — all via a single-knob controller with LCD.

Australia: boschcommunications.com.au or 1300 026 724

New Zealand: Musicworks musicworks.co.nz or 0800 687 429

NEW

PreSonus CDL

The CDL active loudspeakers from the PreSonus / Worx Audio team include the CDL12 and CDL18S Subwoofer. CDL provides a flexible system where speakers can be grouped and managed individually or together. The locking Ethernet connection on the CDL12's integrated power amplifier also provides audio networking capability via Dante. The CDL12's hybrid point source/line array design delivers focused sound with consistent SPL coverage both on- or off-axis, making it an excellent choice for mobile and installed applications. Rigging CDL12 enclosures is made easier, thanks to integrated pin-loaded rigging hardware. A dual-angle pole mount is provided, supporting the use of one or two enclosures when pole mounted on a tripod stand, or atop the companion CDL18s subwoofer, allowing the system to adapt to varying audience sizes.

Australia: Link Audio linkaudio.com.au or (03) 8373 4817

New Zealand: Direct Imports directimports.co.nz or (06) 873 0129

Chauvet DJ Freedom H1

The Chauvet DJ Freedom H1 is a compact, wireless, battery-operated LED par light. Powered by a 10W hex-colour (RGBAW+UV) LED and featuring a built-in D-Fi transceiver for complete wireless control and uses. Its magnetic base makes it easy to mount the light to most metal surfaces and its included magnetic gel holder allows for quick swapping of filters and gradients. Freedom H1 has a digital display for easy control and adjustment of all settings. Multiple control options include stand-alone mode, wireless DMX or IR.

Australia: AVE
avecorp.com.au or (03) 9706 5325

New Zealand: M.D.R Sound & Lighting
mdrlighting.co.nz or (06) 355 5073

Chauvet Professional Ovation P-56FC

Ovation P-56FC is a compact, virtually silent par that produces a homogenised, single-source, flat and even field of light with high CRI. The bright unit utilises the same advanced full colour-mixing RGBAL LED system found in the popular Ovation E-910FC ellipsoidal to produce subtle pastels to punchy saturates and nearly any temperature of white. Interchangeable lens plates are included for medium and wide beam angles and the unit accepts standard 7.5" beam shaping accessories. Ideal for theatrical and studio applications, the virtually silent par features extremely smooth 16-bit dimming, as well as RDM and PWM for ease of set-up.

Australia: Showtools
showtools.com.au or (02) 9824 2382

New Zealand: M.D.R Sound & Lighting
mdrlighting.co.nz or (06) 355 5073

GEAR

Claypaky Axcor Profile 400

The Axcor Profile 400 includes a professional framing system, an animation wheel, a CMY + linear CTO system, and a high precision mechanical iris. Its light source is a 300W white LED module designed specifically for this unit. The Axcor Profile 400 comes in a 16,000 lm, 6500 K, CRI=70 model, or alternatively a 12,000 lm, 5600 K CRI=90 model. It is extremely quiet, and has three operating modes, which can be chosen according to needs: Silent, Standard and Auto.

Australia: Show Technology
showtech.com.au or (02) 9748 1122

New Zealand: Show Technology
showtech.com.au/homenz
or (09) 869 3293

Elation Proteus Profile

The Proteus Profile is an IP65 rated LED Profile fixture providing up to 45,000 lumens from its 950W 6,000K LED engine. It includes a comprehensive FX package with 6 rotating and 7 fixed glass gobos, full animation wheel, dual prisms, dual frost and a high-speed Iris. Its indexable framing system provides full blackout shutter cuts for precise beam shape control. With a zoom range from 6 to 50 degrees and a 160mm front lens the Proteus Profile has the power to cut through at even great distances in any outdoor concert or special event.

Elation Proteus Beam

The Proteus Beam is an IP65 rated moving head beam luminaire with the Philips MSD Platinum 14R 80CRI 7,800K lamp producing over 12,000 total lumens. Features include an advanced optical system producing a 2.5° beam aperture, internal thermal cooling system, full CMY colour mixing, 13 dichroic colours including CTB, CTO, and UV, 8 rotating interchangeable metal and 13 static-stamped metal gobos, 5 and 32 facet rotating prisms, frost filter, motorised focus and auto-focus, and a high speed mechanical shutter and strobe.

Australia: Lexair
lexair.com.au or 0477 539 222

New Zealand: Lexair
lexair.nz or (09) 213 7436

Grand Lighting GL30XHP-70

The Grand Lighting GL30XHP-70 is an IP65 rated gobo projector utilising the CREE XHP70 LED capsule in either warm or cool white, and projects bright, sharp, gobo images for permanent outdoor installations. The unit takes a single gobo and has the option to slowly rotate or switch to static using a simple push button. The projector is fanless and totally silent. There is a choice of four fixed lenses from narrow to wide. Supplied with a quality Meanwell driver this Grand Lighting unit comes in black or silver.

Australia: Gobotech
gobotech.com.au (07) 5573 3177

NEW GEAR

Penn Elcom W0098-FM

Penn presents its brand-new Castor Plate series (W0098-FM). 'Wheeling' a flight case typically consists of fitting a board, four plates, 16 screws and 16 nuts –the Penn Castor Plate puts an end to all of that! It offers two practical solutions - with the choice of either a top-down or a bottom-up style which come with bolts or nuts already attached respectively, so the case builder can choose to suit the case design and application. The new Penn Castor Plate is made from Zintec and weighs just 187 grammes. The wheels bolt directly through the flight case panel utilising the Castor Plate's integrated threads, so there is also no need to use T-nuts.

**Australia: Penn Elcom
www.penn-elcom.com or (03) 9335 6455**

**New Zealand: Live Sound Manufacturing
www.livesound.co.nz or (09) 378 0542**

TOA MA-725F

TOA's MA-725F matrix amplifier is an all-in-one solution for multi-channel or multi-zone applications combining a 6 x 4 audio matrix, DSP and 4 channel Class-D amplifier into one chassis. It is equipped with 4 independent line inputs and 2 MIC/LINE priority inputs. Each output has independent DSP preset adjustment with input source matrix selection and produces 4x 250W @ 100V.

TOA MM-700F

The TOA MM-700F is a 6-input and 4-zone output matrix pre-amplifier with easy control of mixing functions and digital processing. Matrix and DSP settings can be made without the need for a computer. The paging function has two-levels of priority: (1) manual activation or (2) automatic (VOX) activation. Enhanced functionality is tailored to both background music and paging applications.

Australia: Australis www.australismusic.com.au or (02) 9698 4444

New Zealand: Australis www.australismusic.co.nz or 0800 321 360

PlusTruss LT Pre Rig

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LDI 2018

by Cat Strom

LDI 2018 celebrated its 30th anniversary with the best-attended October show in its history with over 14,000 registered to attend and over 360 exhibitors. While the core of the show remains entertainment lighting, LDI 2018 showed attendance growth from key segments including audio engineers, video and projection designers, and rigging/staging professionals.

The turnout from Australia was a little sparse compared to previous shows but somehow, after wining and dining with manufacturers, they managed to congregate every night at either The Hard Rock's Circle Bar or Wynn's Parasol bar, depending on which camps you were affiliated with! Rumours of bad behavior were a bit tame this year although one well-known Australian LD did lose a whole day of the tradeshow after a big night at the Circle Bar.

TLC

Sean McKernan and Davey Taylor from the TLC - The Lighting Collective used the show to announce that they will be distributing the LightShark series of affordable consoles from WorkPro. These small consoles are very versatile with an intuitive and easy interface. Avolites' video and lighting control integration system, Synergy, which enables users to connect and configure their Ai media server from the Titan interface, was their main offering for the show. GLP revealed their compact LED moving head impression FR1 which is one of the cutest lights ever. Also new was the impression E350 model, the brother of the impression S350 LED Moving Head, with a 30% brighter LED engine and very narrow iris. Portman weren't launching

anything new but I've included a picture because they are just so darned pretty.

Sean and Davey with LightShark guys
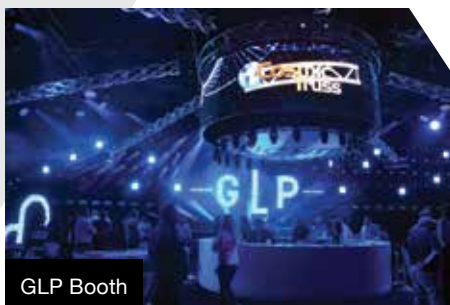
GLP Booth

ULA

ChamSys surprised everyone with their QuickQ range of lighting consoles that bring simplicity and power to the small console market. These consoles are ideal for students, volunteers, or part-time operators, and

comfortable to use even by professionals on small-scale shows. VuePix Infiled highlighted their new Air Carbon Touring series and Deep Black high-definition panels which Cuono was very excited by even though he looks very cool in his photo. Meanwhile over on the SGM stand, the G-7 Spot was getting a pounding from water, mud and just about anything else you could throw at it.

QuickQ consoles

SGM G-7 Spot

Cuono Biviano

LEXAIR

For the first time in ages there was no Alex Mair at the show and the Circle Bar just wasn't the same without him. Elation brought heaps of new product adding to their waterproof Proteus line and showcasing the charmingly named TwinkLED technology. Sounds very Peter Pan. The Artiste Monet generated quite a buzz. High End Systems presented their SolaFrame 3000 and SolaSpot 3000 models but most people were talking about the prototype of the TurboRay, a dynamic effects fixture that is perfect eye candy for multiple applications.

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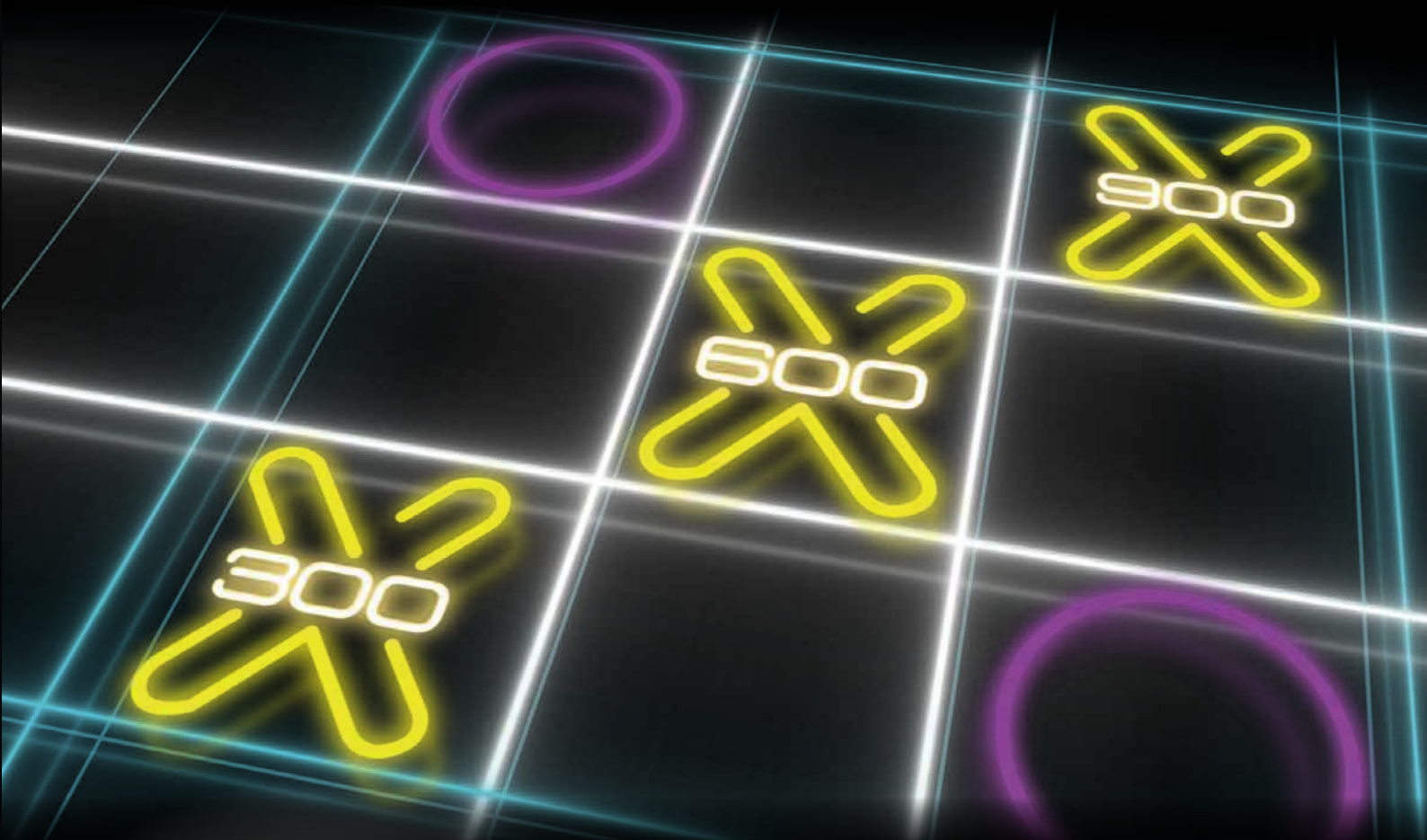
AXCOR
PROFILE 600

THE NEW BENCHMARK ON THE MEDIUM-HIGH MARKET.
In the crowded world of medium-high power lighting units, the Axcor Profile 600 stands out for its high level performance and the superior quality of its light. Its most interesting feature is its great versatility of use. This light can be used for every occasion, making it an indispensable tool that every rental company should have in stock.

Claypaky presents the LED moving head you have been waiting for, featuring everything you need! Axcor 600 Profile is your perfect solution for every occasion.

KEY FEATURES:
- Lumen Output: 19,000 lm
- Power Consumption: 800VA at 230V 50Hz
- Weight: 33 Kg (72.7 lbs)
- Patented Claypaky Framing System
- White LED Engine + CMY

TMB showcased their ProPlex IQ Tester LV Ethernet/DMX tester/analyzer which is the first Ethernet tester designed for entertainment production. The Solaris Flare IP range – the brightest outdoor LED fixtures – has two new additions: The Flare IP HD Dynamic White and HD RGBA fixtures.

Elation Booth

TMB

High End

JANDS

Channeling an Indiana Jones meets Studio 54 vibe, the Robe stand was a sight to behold. Along with the super bright Super Spikie, the T1 Profile LED moving light specifically designed to fulfil the challenging requirements of three very diverse disciplines – theatre, television and touring - in one comprehensive fixture was the main drawcard. Also launched was iParFect, the first in a range of IP rated luminaires. The Vista by Chroma-Q range of consoles were displayed with a new model coming soon.

Robe Booth

Vista

SHOW TECHNOLOGY

The Show Technology team of Emmanuel Ziino, Paul Nicolaou, and Mike Gearin were out on force at the show. There was a lot of gossip as to why Martin by Harman decided not to exhibit on the main floor, preferring a demo room, but whatever the reason, their new mover the MAC Allure Profile was generally well received. Also new was the ELP, a bold entry into the world of ellipsoidal LED fixtures. The announcement of the ClayPaky SHARPY PLUS excited many as this is the first 100% hybrid unit capable of being both a perfect beam moving light and a perfect spotlight. Well, so they say. AV Stumpfl showed their innovative T-32 Shift screen system leg – not as sexy as a flashy moving light but a useful addition to their range. Their upcoming PIXERA media server system also garnered attention. Robert Juliat presented the Dalis Access 863 cyclight designed to give those with smaller budgets the first access to Dalis technology. Ayrton not only had an award-winning booth, they also previewed the new Diablo™S, Diablo™TC, Mistral TC and Mistral S automated fixtures.

Showtech guys and Jonas from Martin

Claypaky

Ayrton Booth

SHOWTOOLS

The Chauvet booth seemed to always be packed. New products were added to the company's popular Maverick, Rogue, Ovation, COLORado and STRIKE lines. Drawing attention at the center of the company's booth was a running water display of the new Maverick Storm 1 Wash, a high output IP65 LED fixture that's especially well-suited for outdoor applications. Another crowd favorite was the large lighting display wall that featured a show by designer Cody James. Commanding attention on that impressive structure were the STRIKE Saber, a bright pixel mapable LED batten-style fixture with amber shift; and the COLORado Solo Batten, an IP65 rated RGBAW linear unit that produces seamless edge-to-edge homogenised colour across its lens with no separations, dimmed lens corners or tiny circles.

Chauvet Booth

Maverkick Storm 1 Wash

Over on the Philips/Signify was the VL10 the latest Vari-Lite BeamWash fixture, the VL10, was shown for the first time at LDI.

PRG/VER: featured the mammoth SuperRay Luminaire which is BIG. As well as being a hybrid fixture that can act as a beam, wash, spot or profile fixture, it can also perform as a followspot as it has an inbuilt camera to tie in with the PRG GroundControl followspot system.

PRG

On the award-winning GLP stand Cosmic Truss revealed twisted truss called DNA designed to bring truss to the forefront of scenic designs, creating a stunning contrast to the traditional box truss.

Cosmic Truss

We asked a few friendly faces at LDI 2018 what they found exciting...

1. Graham Anderson

Lighting Director, Backstreet Boys Larger Than Life Las Vegas Residency

I was pretty excited about the High End Systems Turbo Ray that they are planning on releasing next year. It might just be nostalgia for the VL5 but I'd love to get that fixture into a rig. The PRG SPACEFRAME was really impressive as well and will be a game changer for touring.

Graham Anderson

2. Emmanuelle Gigi Pedron

Lighting Designer, Queens of the Stone Age

I love the Dalis series from Robert Juliat. The Dalis 862 comes in two sizes and is an exceptional footlight. I see a lot of use for it. In the Spots category I'm interested in trying the Mistral and Ghibli from Ayrton and the

Picasso and Da Vinci from Elation. It's hard to see the possibilities of a light at a trade show, nothing better than trying it yourself. In the effects category I'd like to play with Ayrton's MagicBurst and the JDC-1 from GLP. I think they would be brighter than the sun itself if combined!

The drone show by Verity Studio was awesome so was the BlackTrax demonstration. That's the future of lighting design.

Emmanuelle Gigi Pedron

3. Jared Hawke

Managing Director, Frontier Lighting

The Chauvet COLORado Panel Q40 really impressed me – in fact I bought 12! They are extremely punchy, have WDMX built-in, and are lighter, brighter and cheaper than similar products on the market.

Jared Hawke

4. Ray Bond

Managing Director, Control Tech Asia Pty Ltd

Truthfully I thought there was a lack of stunning products or "game changers". Innovation seems to have plateaued. The one thing that was obvious was the improvement in optical quality on most projection equipment with razor sharp images even on cheapish fixtures. I did like the Apollo GoboPro+ LED Outdoor Profile - very small, 75w LED engine and inbuilt rotator.

Ray Bond

5. Clint Dulieu

Technical Designer

There were three products that impressed me the most at LDI. The TMB Proplex IQ Tester as it is a great standalone all-in-one testing tool for modern lighting systems which very much includes networking and IP protocols in 2018. The Ayrton Bora (and their whole line up also) because we are now seeing LED hit its maturity where it's a real replacement for all needs traditionally held onto by discharge fittings, coupled with top rate industrial design and build quality. And AV Stumpfl Pixera servers as, whilst still in development, the new Media Server platform looks extremely promising, powerful, with a very streamlined workflow.

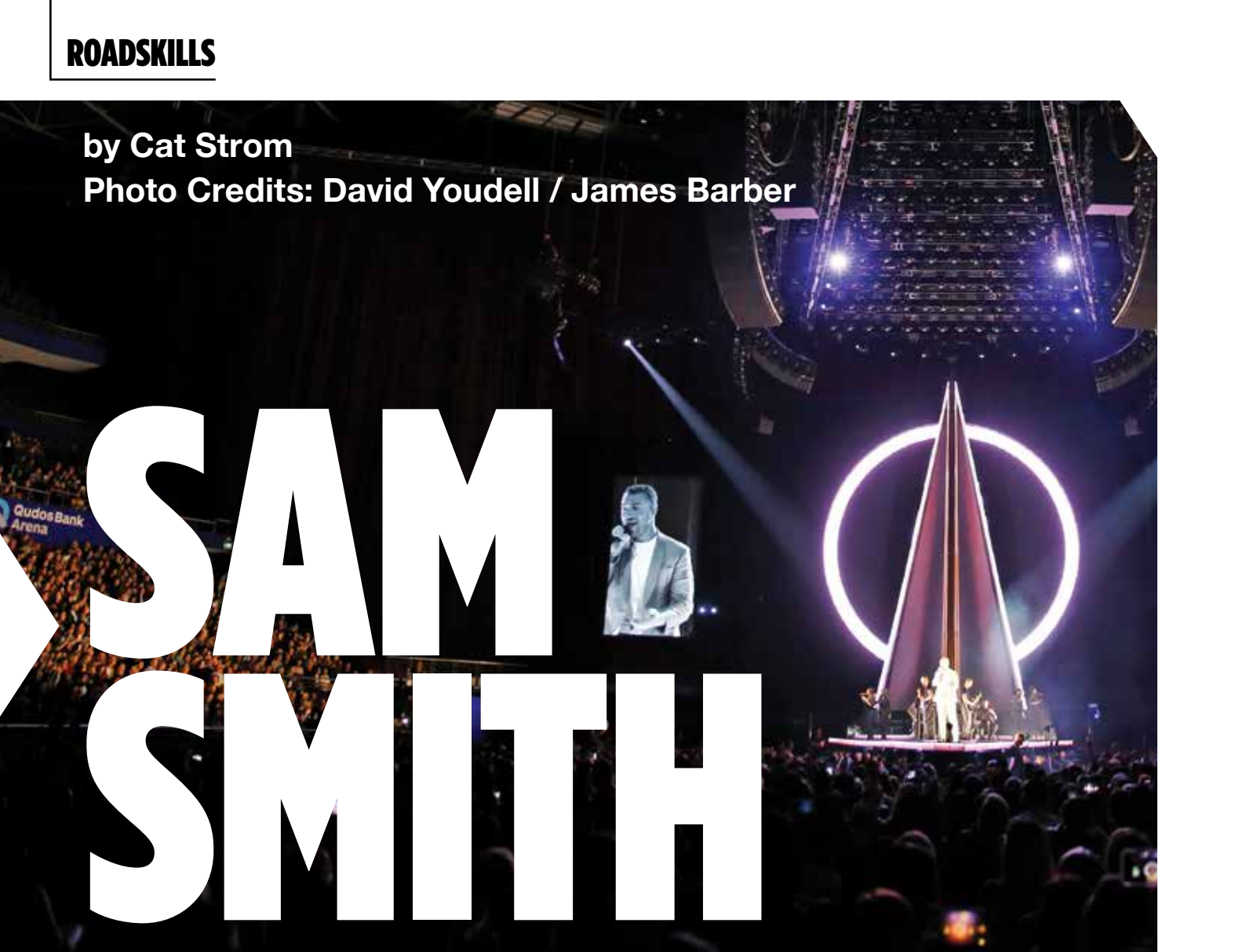Clint Dulieu with AV Stumpfl team

6. Myles Mangino

Lighting Designer, The Pixies

It was exciting to have some time with the new MA3s. Looking forward to taking these out on tour next year and expanding on the depth of programming we were able to achieve with the MA2s. Vectorworks new Vision was an important and well-needed addition for us designers using Previz. I thought GLP's KNV Cube and KNV Arc were one of the most unique and useful new ideas this year. Applications could be anywhere from concert tours to architectural installs. Robe's ground control Robospot was something a lot of designers were waiting for, bridging the gap between PRG's system and the software based systems, and making ground control more widely available. Blacktrax had some impressive innovations that will add new levels of creativity to designers, and inspire entirely new designs. And I thought Enttec's LED Mapping and Pixalator Hardware finally brought the world of LED tape and Dots up to the pro level.

Myles Mangino

by Cat Strom
Photo Credits: David Youdell / James Barber

SAM SMITH

It's not often that the set design for a concert almost steals the show but Sam Smith's The Thrill Of It All was impressively creative.

A long, thin triangular stage thrust its way into the audience allowing intimacy with the artist whilst upstage there was a 15 metre tall shard shape that opened up into pointed wings and a large circular disc upstage measuring nearly 12 metres in diameter. Sections of the stage elevated and descended on various occasions during the night, adding to the theatrical effect.

The design is deceptively simple but each set piece and staging element has several jobs. Creative Producer Lee Lodge, set designer Jason Sherwood and lighting designer Tim Routledge, along with Sam Smith himself, worked closely to ensure an epic result. The stage was built by Brilliant Stages.

The show begins dramatically with Sam appearing seated in a chair via a centre lift and lit with one single spot, and from then on the structure of the stage slowly grows. It starts simply, evolving in the middle of the show to something quite large and towards the end, it mirrors the start with a single spot light again.

"It's quite theatrical and isn't lighting for lighting sake," commented Louisa Smurthwaite, touring lighting director. "It's bold, singular looks for each song which we don't really deviate from."

Sam wanted the stage design to be like a precious gem hence the shard and circle structure which is the main set piece. The set has a gold finish which lights well and the stage is outlined by Robert Juliat Dalis 862 footlights.

"The shard is multi-purpose and can open up as it's on a cantilevered system to reveal an inner shard," said Louisa. "To begin with both shards are projection surfaces but later in the show, these surfaces disappear to reveal inside the shard a circular staircase from where Sam sings Palace."

The circle is like a lightbox lit from behind by TMB Solaris Flares, then there's a ring of 80 TMB Solaris Flare Q+ around the outside. These had Perspex covers which enabled the fixture itself to be seen or not. There were also drapes and Martin Atomic LED Strobes positioned in a way that it becomes a silhouette or negative space.

The overhead rig, which was on a Kinesys system so it could deliver a variety of positions as the show progressed, consisted of nine parallel trusses holding 75 Robe Spiiders. Outlining the edge of the truss were 52 GLP impression X4 Bar 20s and more X4 Bar 20s providing fill from the back.

"We've got Robe BMFLs to light people and Spiiders are more eye candy," said Louisa. "I use five BMFL Blades, two at the front and three at the back, as my followspots in combination with the RoboSpot BaseStation. The one above the shard also becomes part of the rig. I have control of intensity of the spots, run from five faders on the MA2, so all the operators have to do is follow Sam."

The lighting was programmed by Tom Young on an MA Lighting MA2 with 80% of the show timecoded.

All lighting was shipped to Australia by Neg Earth.

The shard reveals a staircase

A ceiling of Robe Spiiders

A unique sound design was required.

In the bowels of the stage was Saul Skoutarides taking care of monitors with a DiGiCo SD7 because its automation is very versatile and useful for a show like this.

"I need the power of the automation to get it done basically," he said. "I use Midas splits in front of the console because I like the sound of them and I'm using them as my actual gain stage; they do the splitting between monitors and FOH but I'm using them for their preamps rather than the ones in the console."

Two TC Electronic M6000s are used for various reverbs with Saul also using reverbs on the console. A Cranesong STC-8 compressor is inserted over Sam's mix for some analogue warmth.

"It's a mastering buss compressor that sounds warm and lovely," explained Saul. "I'm also taking all my vocals AES through a Cedar DNS 8 Live - a digital noise suppressor that helps filter out big, boomy reverbs in arenas. Every day I listen to playback from FOH within the room, put all the mics on stage and basically teach it what the room sounds like. Then I can filter in or out as much of the room as I want in the vocal mics. It's really been my savior on this tour as it's essentially in the round."

Eighteen sends of Sennheiser 2000 Series

IEMs were used, keeping the stage clean. This is a model Saul has been using for the past ten years, even though there are newer models available.

The vocal mics were Sennheiser SKM 5200-II wireless transmitters outfitted with MD 5235 capsules on them. All the band and Saul himself were using JH Roxannes for their moulds.

"There's a lot of communication going on with 28 channels of shout mics, especially as we can't see each other," added Saul.

Capital Sound provided a uniquely configured d&b audiotechnik J-Series PA designed by system tech Liam Halpin. Obviously if the PA was hung in a regular left / right set up, Sam would be in front of the PA all night so Liam spent several weeks coming up with this design.

"When I first saw plans for the stage design I thought *&%$*$@#%!" laughed Liam. "It's not an in-the-round show and it's not a stage with a large thrust. Most of my sound designs are based around the imaging, it's always struck me as very unnatural if you're looking at someone in front of you and you're hearing them either from above you or to the side. Given that Sam was going to spend much of the show at the downstage tip of the stage,

we realised very quickly that a traditional system would not work."

Liam spent a long time using d&b ArrayCalc simulation software to model various options of array hangs to ensure consistent coverage for each audience member. With no subs allowed on the minimalist stage his job was made even more difficult.

"The side hang almost had to follow the line of the stage, to try do anything off-angle down the side of that stage wouldn't really work," said Liam. "So the side hangs became the first hangs locked into place and the sub array built up around that. Then came the challenge of trying to work out how to cover the front row of seats around the triangle. It was all based around trying to compromise between that throw and the imaging which is how we ended up with this design."

The resulting hangs included 80 d&b J8s flown in 4 hangs of 20 cabinets, 32 d&b V8s flown in 2 hangs of 16 cabinets and 24 d&b J-Subs flown in 6 hangs of 4 cabinets. Added to that were 4 d&b J-Infra Subs under the stage and 4 d&b V-Sub, in 2 stacks of 2 cabinets, upstage. 22 d&b T10 cabinets were mounted to stage structure to ensure audience members by the catwalk were well covered. Custom mounts to the side of the

A truly theatrical show
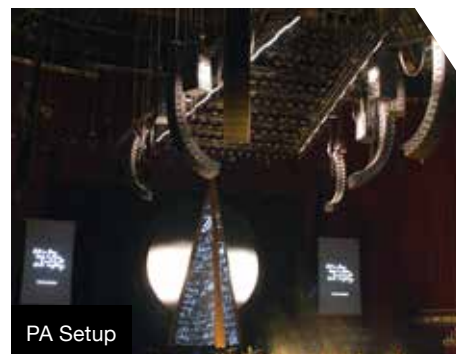
PA Setup

Saul

Jim

Liam

Louisa

stage meant they did not interfere with the Dalis fixtures or clutter the stage.

"The way they are connected gives me lots of control over the delays of individual boxes, although they're not all individual boxes as some are circuits of four, but the groupings were arranged to give me the best possible control," added Liam.

All flown full-range cabinets are driven by d&b D80 amplifiers and array processed. More D80 floor sub amps reside in a bay underneath stage right, upstage of the J-Infra subs. Every amp is connected to a dual, redundant Ethernet network using Dante equipped d&b DS10 network bridges controlled via Open Control Architecture. A Lake processing rack at FOH accommodates signal distribution and house EQ. Using the d&b DS10s, Liam set up the system so the amps could monitor the signal flow via the Dante network.

By the time production rehearsals begun in Lake Como, Liam had the PA designed and only minor tweaking was required.

"We fine-tuned mixes and got everything dialed in," begun Jim Ebdon, FOH Engineer. "I did a mix on a pair of Genelecs in a studio environment, curious how it would translate to the d&B J system and it actually worked

really well. I elected to mix off to one side so I'm really mixing in front of one line. It's almost mono, I knew we were never going to get big stereo spreads so I disciplined myself mixing with very narrow stereo spreads, on the verge of mono."

Jim chose a Solid State Logic SSL 200 to mix on, saying that he really favours the touch screens, which were essential for programming this tour.

"I've been using SSL for about three years now because the mix buss has a characteristic sound to it that I like," he said. "I like that there is a lot of head room in the console and that it's very easy to utilise Waves or Universal Audio products. It's got options for MADI and optical outputs on the back so it's very user friendly. I elected to use the SSL 200 for this tour as all the faders are in line for me and I just prefer the ergonomics of it."

Jim used a Tube-Tech CL 1B compressor on Sam's vocal as well as a Sonnox Oxford Dynamic EQ Plugin on the Universal Audio Platform because when Sam sings louder, his voice can become harsh in the high/mid-range.

"The Sonnox smooths that harshness out whilst keeping the integrity of the vocal

sound," explained Jim. "It's a gorgeous vocal chain and I'm so happy with the way Sam's voice sounds. I also have a Neve 1073 mic preamp at the front of the vocal chain. I use Bricasti M7 reverbs; one for Sam's vocal and one for the drums."

Jim used a Waves' SG Extreme Server V3 with a selection of plugins for the main bus mix along with several Universal Audio plugins via a Soundcraft Realtime rack.

"I love those plugins and everything else on the console," commented Jim. "I want to keep it as natural as possible because it's a great live band with very little enhancements. I didn't want to overdo it."

The only slight challenge that Jim had was with the sub lows, he had to be careful how loud he ran the four J-Infras under the stage as anyone standing on top of them would lose their fillings!

"That's really all the sub low that I have as all the bass is in the air," he added. "So getting the volume right can be tricky as it's not a loud show and I want to be able to hear the J-Infras on the arena floor and lower levels. It's really all about Sam's voice and keeping it natural-sounding."

L-ACOUSTICS' L-ISA DEBUTS IN AUSTRALIA

by Jason Allen

L-Acoustics' L-ISA 'Immersive Hyperreal Sound' technology made its Australian live debut on Saturday November 10 with the Adelaide Symphony Orchestra performing the score to 'Harry Potter and the Prisoner of Azkaban' with the film at the Adelaide Entertainment Centre. Novatech Creative Event Technology provided the extensive L-Acoustics system, which comprised seven hangs of 12 KARA, two hangs of 12 KIVA, and 12 KIVA as in-fill, supplemented by 8 SB28 subwoofers, all powered by L-Acoustics amplifiers.

L-Acoustics staff had flown in especially for the event, and California based L-ISA applications engineer Carlos Mosquera was on hand as L-ISA system tech. L-ISA is still only deployed for live events with an L-Acoustics staff member present, and this will be the case until global certified training has been rolled out to enough engineers. This hasn't slowed L-ISA's use globally; over two million audience members have experienced L-ISA at over 600 events so far.

Sense of Space

CX joined a group of influential live engineers, consultants, and potential customers hosted by Jands and L-Acoustics at a pre-show presentation that demonstrated L-ISA through five SYVA, using an orchestral multitrack to show off its capabilities to create a vivid sound field. Switching between a stereo mix and L-ISA mix was extremely enlightening; the stereo mix sounded like you were listening to an extremely good recording on a very nice PA, while the L-ISA mix almost convinced you there was an orchestra in the room.

L-Acoustics' Tony Szabo, Head of Application - Touring, and Tim McCall, Sales Manager, and Jands' Scott Harrison, Technical Representative - Installed Systems, talked the crowd through L-ISA's principles and practicalities, giving examples from both live shows and install projects around the world. After the presentation and a spot of dinner, we were allowed into the auditorium pre-show to chat to Carlos Mosquera at FOH and ask follow-up questions of Tony, Tim, and Scott. We then took our seats for the show.

Most of us were seated centre, a few metres in front of the FOH mixing position – prime seats. It would have been very interesting to hear the effect off to the side, where we did hear reports that the imaging wasn't quite as strong. However, the experience in centre was consistent with the SYVA demo – it didn't sound like a PA anymore. At no point during the experience did I feel like I was listening to a speaker. The imaging duplicated almost perfectly the large orchestral forces in front of us, including the 70 piece choir. The choir handling was one of L-ISA's niftier tricks – it had been made to sound like it was everywhere and nowhere at the same time. The word 'ethereal' was used more than once in post-show discussions describing the effect.

Tony Szabo

Carlos Mosquera

Mark Hanson

In The Mix

Handling the mix from Novatech's DiGiCo SD10 was visiting engineer Charles Gagnon, who tours as an employee of the producers. While he has mixed 'Azkaban' many times, it was his first night with L-ISA. "It affords me the luxury of doing some things I can't normally do," Charles commented. "It's very beneficent for dialogue, and allows a more refined soundstage because of the source positioning capabilities, creating a multi-dimensional sound." Many engineers have reported that they mix slightly quieter and use less processing on L-ISA systems and we asked Charles if this had been his experience. "I feel like I'm mixing at the same level, but the system is filling the room differently," he observed. "My channel EQ is about the same, but I'm using less overall EQ. I mix on groups a lot for this kind of mix, and depending on how the room is reacting, I might EQ the group, but I'm using less group EQ on this system."

The Pro's Opinions

While many of the assembled audio boffins didn't wish to have their opinions on L-ISA noted in this publication, the legend that is James 'Oysters' Kilpatrick was kind enough to share his impressions. "I thought the orchestral multitrack demo sounded amazing, with a level of mix separation and spatial depth I hadn't heard previously," he offered. "I love image as an engineer, especially on an orchestral show. Listening to the movie with the orchestra, it was bit harder to pick as the dialogue and foley were always very present, but I could still always pick where a single orchestral instrument was at any point in the show from listening to it; you could look at the direction of the source and instantly see the player. It seemed to have a great level of stage depth to it as well."

"The only real disadvantage I see is that the arrays occupy the same real estate as the lighting front truss," James continued. "So they would either have to hang in front of said truss, and that puts them probably four metres further forward than they should be, or they would have to hang on the same beam as the lighting truss, which is problematic.

L-ISA interface

James Kilpatrick

Charles Gagnon

Leko Novakovic

Tim McCall

There would definitely need to be a good rigging plot done with all concerned well in advance. All in all, I think immersive audio is definitely something worth pursuing and I will definitely be wanting to give this a try in the near future."

Mark Hanson of consultancy Hanson

Associates was also happy to share his observations. "I thought L-ISA was terrific, and very effective," he enthused. "Even though I was sitting at the back, I could certainly hear sources appearing to come from where they were. The system was replicating what you'd expect in a recital hall. What the system was trying to do in

some cases was separate the instruments out for effect, which is the opposite of the blending in a concert hall, but the overall effect is different – it produced a nice, wide sound stage that reminded you that you were listening to a live orchestra. It's exciting for us as acoustic engineers when you can see a system emulating what would happen with the acoustics of a room. You can relate to it, and it's not just an effect running in a black box."

Novatech's managing director, Leko Novakovic, got to experience L-ISA for the first time with the rest of the audience. "I loved it! I thought it was very natural," he related. "Everything sounded like it was coming from where it should. The system had a lot of headroom and almost sounded like it was idling; sometimes orchestras can get a bit heavy in the big epic moments and choke the PA, but that didn't happen. Charles pulled a great mix; I was particularly impressed when the choir came in and sounded like it was everywhere."

Leko was proud his gear got to take part in the system's debut. "It was great to be the first in the Southern Hemisphere," he said. "I can see L-ISA working just as well in rock touring, and a lot of other applications, especially fixed installation in theatres. It's not a fad, it's a tool, and while it's not for use on everything, I think it will become the new way we do things."

EQUITANA – BRINGING THE GREAT OUTDOORS INDOORS

by Harry the Hirer's Marcus Pugh

Equitana Australia is Australia's premier equine event, and it celebrated its 20th Anniversary this year in the 8000sqm Grand Pavilion at the Melbourne Showgrounds. Equitana delivers Australia's premier equine gathering culminating in 'The Mane Event' with trick riding, entertainment and world class horsemanship supported by a full scale production.

The Harry the hirer Productions team was engaged to deliver all production requirements for this event, including lighting, rigging, audio, LED screens and control provided from HTH Production's extensive inventory.

The 'big top' design of the pavilion provides very little infrastructure for production rigging. The HTH Productions team were able to work with engineers to develop a bespoke rigging solution, not only to support the 2.5 tonne central four-sided LED screen but also adding lighting trusses along the length of the arena for the first time.

HTH Productions relied on Eurotruss HD44 truss and CM Loadstar hoists to suspend the production elements. The Eurotruss was also used to build a ground supported stage infrastructure which created a proscenium arch, as well as moving drapes and stage lighting positions. The Nivtec stage system was deployed to make a 43m by 4m stage and ramp suitable to support the horse performance as well as judging and control positions.

Main Arena lighting consisted of a mixture of Martin Quantum Wash, Martin Axiom, Martin Quantum Profiles, and Chauvet Maverick MK2s, along with a smattering of profiles and LED flood fixtures. Deployed across the arena truss lines, the Quantum Wash fittings did the heavy lifting when it came to creating a bright and even wash across the 70m by 30m competition area as well as adding colour, movement and eye candy for the evening performances. The framing shutter system and punch of the Maverick MK2s allowed Lighting Designer Cameron McKaige the flexibility to frame the stage lighting, and splash gobos and colours across the arena. While the Martin Axioms and Quantum Profiles provided the all-important beam looks. The curves of the big top's white skin and large open floor space made a spectacular canvas for some of McKaige's signature big lighting looks.

The event calls for a four-sided LED screen floating above the action on the main arena to provide information, statistics and special effects during the show and competitions. Harry the hirer constructed this requirement using its 2.8mm pitch LED screen cabinets, run from the Nova control system, with signal being fed through fibre optic cabling and Thor Multiplex Fibre distribution. Vision control was via HTH Productions Analog Way Ascender 16-4K, allowing instant replays, multilayered display and some really creative outcomes with the Ascenders perspective layer features.

For the audio, Harry the Hirer Productions moved away from the traditional line array with delays, instead opting for a custom designed distributed Nexo system, not dissimilar to a standard catwalk audio rig, firing audio at audiences each side of the arena, except on a scale 10 times larger. Driven by a Digico SD8 and some smaller remote sub-mixers, the room was time aligned and consistency and coverage was on the money with less than 6dB drop across all frequencies. An additional PA system was provided to fill the arena as foldback for both performers and competitors whilst on horseback.

The major challenges for the production of this event were both the Grand Pavilion's lack of infrastructure, and the dust being kicked up from horses whilst on the arena. Dust mixed with technology can often produce undesired outcomes, so Harry the hirer Productions went someway to addressing the dust at front of house control by building a modular acrylic panel system including roof to create a clean area for consoles and technology within the operator position.

Credit must go to the key people: Lighting - Cam McKaige, Audio Design - Richard Whitty, Audio Operation - Tim Pulbrook, Vision Design - Arturs Landsbergs, Vision Operation - Mitch Hudson and Production Management - Ian Kirkwood

Equipment list

Audio

Digico SD8
Allen & Heath Q16
Nexo PS15
Nexo PS10
Nexo LS1200
Nexo Alpha E:B1
Camco D3 Amplifier
Camco Vortex 4

Camco Vortex 6
ULXD Radio Mics
ULXD Digital Antenna Distribution

Lighting & Rigging

Grand MA Lite
Grand MA PC
Grand MA NPU
Maverick MK2
Martin Axiom 440
Martin Quantum Wash

Martin Quantum Profile
LED Honeycomb XO
LED Source 4 Profile
LED Fresnel
RGBW LED Flood
Quad 18
10w LED Flood – stairway lighting
D44 Euro truss

Vision

Analog Way Ascender 16-4K

Analog Way Vertige
Roland V-800
Roland VR-50
2mm cabinet
Panasonic PTZ Remote Camera
Panasonic camera Controller
Black Magic Hyperdeck

Stage

Nivtec Stage Modules

Tottenham Hotspur's new stadium

TAKE IT OUTSIDE

PA in The Great Outdoors

by Benjamin Page
Brand Ambassador - Harman Pro Audio, avt

JBL VLA Compact

Crown DCi

avt's Benjamin Page shares his top seven tips on designing and installing PAs in sports grounds and other outdoor spaces.

1 - Understand the space, and calculate the dispersion and SPL required to cover the area and keep up with a loud crowd. It's one thing to stand in an empty space and guess you'll be fine if you can produce 80dB to 90dB from the PA, and it's definitely another when you have an excited crowd. This is especially important if the main PA is also going to double as the emergency evacuation system, and more and more PA systems are being called to take on that role. That's where STI (Speech Transmission Index) is paramount; most outdoor grounds are complicated, and one loudspeaker design size or type doesn't necessarily fit all.

2 - Survey the elements. Is it a windy space? Is salt air an issue? Is humidity a consideration in regard to a timber loudspeaker cabinet? You might have to look at UV rated plastic or fibreglass products as opposed to weatherised timber. Water is an amazing substance – it will find its way into anything given the chance.

3 - Select loudspeakers with the largest mid / high frequency horn section as possible for the best pattern control and throw over distance. If the space is windy then a fully horn loaded loudspeaker will give the best results. The larger the exit area of the horn, the greater pattern control you have. If you can direct your sound to the right places and keep it off the other surfaces, you will have the best intelligibility outcome. Distance is where the game changes – you get compression in the air, and in a space with a lot of people and hot air rising, the heat can take the intelligibility up with it. The more control and output in the high midrange,

the better. I would always trade off low frequency performance to get a larger horn inside a loudspeaker cabinet in order to get intelligibility over distance.

4 - Select suitable power amplifiers with enough headroom to deal with cable loss and meet the peak power requirements of the loudspeakers. It is more dangerous to use a lower powered amp than a higher powered amp. Rule of thumb: a power amp should be twice the continuous rated power of the loudspeaker to compensate for cable loss and keep control of the loudspeaker at the end of the cable run. This will ensure adequate dynamic range and deliver better sonics and overall clarity. Dynamic range also helps with STI.

5 - Always use the largest gauge speaker cable possible to reduce loss over distance. A cable with 4mm conductors is a good average choice. Be aware that cabling requirements can vary depending on where the cable is located. Requirements relating to fire safety may come into play, especially when the PA is also used for evacuation. You may have to run in metal conduits, away from other cabling.

6 - Consider the programme material and address the equalisation of the system. Will the DSP inside the power amplifier be suitable or will external processing be required? People tend to forget how atmospheric conditions affect sound. I used to find on tours, guest engineers would try to back off the high end during the day at sound check when it was hot and the air was thin, but when the air cooled at night and got denser, it became harder to get the high end to the right

level in the listening area.

It's important to commission a system when the space is empty and then recommission it when it's full, as you will need to make changes in the DSP. Thankfully, with the technology we have today you can build in curves to suit any time of day or weather if you know how the changes affect the system.

I have noticed that some engineers tend to overcompensate with EQ. It should be about 'sounding natural, instead of trying to dial in a big bottom end or mid crunch to cut through. EQ tip: It's what you don't hear that makes the difference… cut first, boost last. For speech it's important that you get that range clean and upfront. If that's right, the rest falls into place. Excessive bass enhancement in the low end of the vocal area makes it difficult to understand the spoken word.

7- Ensure there is an adequate power supply for the power amplifiers and, above all, that there is adequate ventilation and dust control in the power amplifier location. Whenever possible, your amps and control rooms should be on a UPS. Networked audio systems need to have an analogue backup or a secondary independent network backup. The system should be designed to be able to operate from the amp room if necessary. In the event of an evacuation, the fire evacuation warden may take total control of the system. In this scenario, you can use audio switching and processing to help move people by zones. There's a lot of interesting convergence happening now in integration that uses audio and video to control the movement of people around spaces.

Tottenham Hotspur installs new JBL VLA Compact array

English soccer club Tottenham Hotspur recently installed a full JBL sound system in their soon-to-be opened 62,000 capacity stadium in London, relying heavily on the new JBL VLA Compact. The VLA Compact is a new, fully horn loaded line/curved array loudspeaker package designed from the outset to be an all-weather outdoor system. It's an IP55 rated system straight out-of-the-box and uses a fibreglass enclosure design. It has been designed for stadiums and arenas or any other project in need of compact, high-powered line arrays outdoors.

The full range modules with their large patent-pending horn design maintain a very tight coverage pattern over the vocal range and are very efficient, with a sensitivity of over 101db with an input of 1 watt @ 1 metre in passive mode. The full range modules are available in two patterns: 100 degrees and a longer throw 65 degree option.

The VLA-C265 and C2100 have internal passive crossovers, so they are very green when it comes to power amplifier energy requirements. Eight full range modules can be powered by one Crown DCi 4-2400N Drive Core power amplifier.

Tottenham Hotspur audio system overview:

• 156 JBL VLA-C2100 full range line array elements, hung as a curved array

• 54 JBL VLA-C125 bass line array elements, hung behind the curved array in a cardioid pattern arrangement

• 196 JBL AWC82 all-weather loudspeakers

• 3,500 JBL Control Contractor loudspeakers

• 140 Crown DriveCore series Install power amplifiers

by Jenny Barrett
Photo Credits: Steve Dyke

Warming up

Roady for Roadies

Team entries

GIVING SOMETHING BACK TO THE CREW

Roady for Roadies raises $20K

The recent death of Greg Boyed caused many to reflect on the issues of mental health and suicide in their own lives and the wider community, including two stalwarts of the entertainment technology sector. They didn't just talk though, they walked.

Promoter, artist manager and musician, Brent Eccles and ex-roadie, tour manager, label manager and now at the helm of Joint Management, Morgan Donaghue joined forces to organise the 'Roady for Roadies' walk. Morgan recalls, "A conversation about mental health was the catalyst. We both know that touring can take a huge toll on a person and we wanted to raise awareness and money to support roadies and production crew. When you are part of a road crew you can be susceptible to a lot of things – depression, drugs, alcohol, and then there's your normal health issues or financial problems."

The idea of organising a 16km Coast-to-Coast walk across Auckland was a natural 'next step' to walking converts Morgan and Brent, "Last year I'd taken six months off to get fit and lose weight. I wanted to go walking and listen to music again, just for pleasure." He bumped into Brent who was a regular up Mount Eden and a morning walk became a ritual. "There's enough Friday drinks after work, we wanted to do something that would get people out the office and walking and talking."

They approached the New Zealand Music Foundation to administer the funds raised, a charity that provides professional counselling support for Kiwi music people through a tailored online, on the phone and in person well-being service. The charity also supplies emergency assistance to music people who are experiencing illness and hardship. A 2016 industry survey by The NZ Music Foundation of crew and roadies found that 58% reported struggling with the intense pressures of live music work, and 40% also faced issues with bills and finances that impacted on their daily lives.

As would be expected of a promotor and a manager, it took a matter of days for a conversation to become a reality, "We called a few people, went to the radio stations and tour companies and sponsors just came on board." The Tuning Fork, the Auckland venue and eatery next to the Spark Arena, provided free post-walk food and drinks and Coca Cola provided water. Universal Music,

Morgan and Greg

Celebrations and prize giving

Warner Music, Live Nation, and Spark Arena all pitched in.

Within a month of the initial conversation, the day of the walk dawned. Used to arranging events for thousands of people, this 'boutique' affair was meticulously organised, "It was possibly a little overproduced with PAs, tents, health and safety talks, the whole nine yards," laughs Morgan. Fully briefed, over 150 people set off on the 16km walk from Manukau to the Viaduct via One Tree Hill, Mt Eden and Auckland Domain. "It was a great day. Feedback was that it made for some great team bonding, gave people a chance to catch up and talk to friends."

The walk culminated at the Tuning Fork, "where admittedly we did have some Friday beers but at least we had earned them!" Prizes donated by sponsors the likes of JB HiFi were awarded including Best Dressed, Best Team shared by Universal Music and Auckland Stadium and 'Most Puffed at the Top of Mount Eden' which went to Mark from Fat Freddy's Drop.

With over 150 people signed up, plus contributions from people and companies unable to make the walk, almost thirteen thousand dollars had already been raised prior to the event much to Brent and Morgan's amazement, "Then on the day Live Nation topped it up to twenty thousand which was wonderful and just shows the amount of support and appreciation that there is for the roadies and crew."

Wish you'd been there? The ball is now rolling with events in Christchurch and Australia planned, plus a repeat performance in Auckland in the offing.

Soul Stage

CALOUNDRA MUSIC FESTIVAL

by Cat Strom

Every spring, the township of Caloundra celebrates the popular Caloundra Music Festival, a non-profit family-friendly event that includes music performances, cultural programs, environmental awareness, and community events.

Held over four days at King's Beach, the festival started in 2007 and has since become quite refined. Not an inch of this site is wasted with an amazing amount of infrastructure crammed into the space.

Live event specialists QuEvents have the contract to provide all technical production. They do not own any large scale production but find the flexibility of this approach is they can deliver a lot of events and use the supplier and equipment that best suits the gig, rather than feeling they have to use their own gear.

For Caloundra Music Festival QuEvents directly provides stage managers, crew, some small PA, and big screens around site. They then work closely with their preferred suppliers to design and provide the rest. As the event is always held over the October long weekend it is important that there are big screens around the site for the patrons to watch the football finals!

Back in 2007 Quentin Leveridge, Event Manager at QuEvents, was working as an audio operator for one of the PA companies at the initial CMF. Now his company has the contract to supply all technical production and it is the second largest contract for him

after Rockhampton's Beef Festival, which is attended by 110,000 people!

The event is produced by the Sunshine Coast Council and was originally planned to further economic development in the area. The first festival was comprised of two stages; the main stage in the Park's natural amphitheatre and the other in the park across the road. There was also a small pub stage where Quentin found himself operating.

Fast track to 2018 and there are five stages led by the Soul Stage in the amphitheatre, with its beautiful ocean backdrop, where the big names perform throughout the weekend. The Surf Stage is located within Lion's Park, the Sun Stage is up the hill in the shady Funky Forest area, the Piano Bar is for patrons preferring a more refined festival experience and finally, the Sand Stage is the newest stage positioned directly on the beach.

This year's line-up included Daryl Braithwaite, Eskimo Joe, Phil Jamieson, The Screaming Jets, Sneaky Sound System, John Butler Trio, The Waifs, Birds of Tokyo, The Living End, The Temper Trap, Thirsty Merc, and Grammy-award winners Arrested Development.

The main stage in the amphitheatre causes a lot of headaches as it has an awful existing roof structure which is basically just an extension to the front of the toilet block! Every year they spend a lot of money and time building on top of and out from this roof.
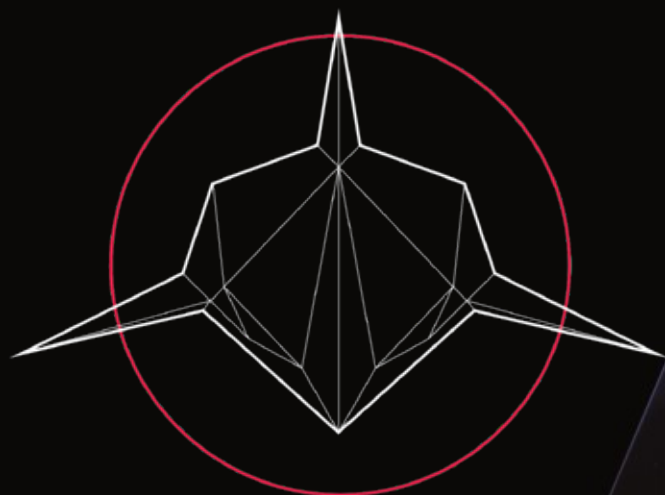
"What we end up with is very hard from a lighting perspective as the trim height at the rear of the stage is about 3.4m and by the time you are sitting on a 300-600 riser you are running out of room," said Quentin. "It is an expensive exercise and we are looking into just building a regular stage in front and making the existing stage a prep area. It's a great toilet block but a terrible stage."

Although the festival is a Council run event there is no leniency when it comes to issuing permits.

"The entire festival site is surrounded by temporary and permanent accommodation so noise is perceived as a big issue," explained Quentin. "Keeping it below 70dbA at the nearest noise sensitive receptor is very, very hard but my team and I work very closely with the environmental health officers to monitor, record and action any breaches. The local community are very accepting of this event and most apartment balconies are full of people enjoying a free show."

Quentin commented that they work very hard to keep within the guidelines and as a result have almost no complaints – except for one that comes from the same person each year!

Power is not an issue with KAG Event Electrical providing all the electrical overlay for the event. They also supply the world's friendliest electricians according to Quentin.

THE GREAT OUTDOORS

Being a council site there is quite a lot of power available, as the council has been adding three-phase connections all over the site during the past eleven years. Consequently the event utilises minimal generators.

Crowd flow and density is not an issue, partly helped by the fact that punters can get pass outs so they can leave whenever they wish and have no problem on their return. The ERMS Group who provide a Risk & Safety team also sponsor the event.

Each year at least one massive storm rolls through, with the weather going from being very dry to monsoonal in seconds. Experience over 11 years has resulted in everything designed as water tight as you can get it. All marquees and infrastructure use very heavy ballast plus riggers and experienced crew were on call to monitor infrastructure.

"Our risk manager from ERMS feeds through very accurate weather warnings and we usually have time to whip around the stages to make sure everything is under cover and give all the stage managers a warning so they have time to prepare," added Quentin.

The only stage that has real issues with wet weather and wind is the Sand stage as it is so exposed. Occasionally the program is paused for really bad weather, however the advance warning allows time to shuffle acts to other stages, tarp up, ride it out, mop up and re-open the stage.

Being council run, the area already features extensive site lighting. QuEvents work with Treeilluminati who provide colour floodlights to uplight trees and this year added masses of festoon lighting for the site perimeter.

It's an environmentally conscious event that has a total ban on single use plastic water bottles, which can be hard to explain to some of the international touring parties, but it's an event team that isn't afraid to do something different.

The festival has an amazing volunteer culture with over 500 hundred volunteers working the event. As they get looked after very well, they keep coming back.

"All the touring acts seem happy and all the crew love working on this event – they get to spend a week on the beach so what's not to love?" concluded Quentin.

Blue King Brown

Sand Stage team

Tech production manager and worlds friendliest event sparky

Surf Stage after the storm

Gear

Most bands are happy to use what they are given in terms of lighting and audio. Minimal floor packages were brought in due to the space restrictions of the main stage. A variety of audio consoles come through with Yamaha, Allen & Heath and DiGiCo all making appearances out front.

Soul Stage (Main stage)

FOH audio: d&b J series, Avid Profile.

Monitors: The Avid Profile failed on the first day and was swapped to a trusty Yamaha PM5D. An SC48 was used for the touring parties that had to run Avid. d&b M2 boxes.

Lighting: House Control was ChamSys MQ500, guest control was grandMA light. Chauvet Maverick MK2 Spots, MK2 Wash, Acme 5R, GLP X1, Mpix USB, Storm Strobes, Nova 4 Blinders and hazers.

Surf Stage

FOH audio: Ground stacked d&b J series, Avid Profile.

Monitors: Yamaha PM5D, d&b M2.

Lighting: Hog Full Boar 4 control. Acme CM-300ZS, XP-280-BS, XP-5R Beam, CLF Par 575, ETC Source 4, ShowPro Hex 18, Martin MAC 101 and 2 + 4 cell blinders.

Sun Stage

d&b Q system, FOH Midas M32, and basic lighting.

Sand stage

d&b C system, SC48 at monitors and FOH.

Chauvet Legend 4500, Robe 250, Robe 575e, ShowPro Hex 18, 4 cell blinders and a big mirror ball, because Quentin loves them.

Suppliers

IJS

High Impact Lighting

QuEvents

Treeilluminati (tree uplighting)

Stageset

Prostage QLD

KAG Event Electrical

TFH (forklifts)

ERMS Group - (Risk and Safety)

Crew

Bob Johnson - Soul Stage
Stage Manager (QuEvents)

Marcello Milani - Surf Stage
Stage Manager (QuEvents)

Alice Tetley - Sand Stage Manager (QuEvents)

Alicia Purontakanen -
Sun Stage Manager (QuEvents)

Jamie Burrows - crew chief (IJS)

Ian Taylor - Soul Stage FOH (IJS)

Alistair Baker - Surf Stage FOH (IJS)

Dave Schafer - Sand Stage FOH (IJS)

Nick Jones - Sun Stage FOH (IJS)

Ashley Neuendorf - LD Soul Stage (High Impact Lighting)

Richard Brown - Video Soul stage (High Impact Lighting)

Caleb Donovan - LD Surf Stage (IJS)

by John O'Brien

TALES FROM THE ROAD

Gigging and giggling alfresco

Ahh, the great outdoors. Fresh air, wildlife, views, Mother Nature in all her glory - what's not to love? Oh: sun, rain, wind, snow, mud, flies, snakes, spiders, dust, salt, bushfires, floods and all the other natural wonders. We might enjoy hanging outside in the elements but electrical equipment generally doesn't. Moisture and dirt - abundant natural elements - are innate enemies to the precious gear that our industry now relies on.

Here are some of the delights of mixing these elements with our gear.

Dust & Dirt

The soil that grows our food and feeds our trees is dirt, and, yea, it is dirty. It fouls our gear and gets into every nook and cranny only to reappear long after.

One time, we were doing production for a B&S. Not truly outdoors, we rocked up to a local hall where we found sawdust spread two feet deep throughout. Promoter: "It gets pretty feral." We needed shovels and brooms to clear a path to load in and setup. Every spare truss, case and board was fastened together to make an impregnable FOH fortress. It held (only just) but the worst bit was finding sawdust in absolutely everything for the next few months.

Providing the weekend's entertainment on hard packed clay for a Harley festival. Bump in went fine but lights looked thin. Halfway through the first set, enough dust has kicked up from the bikers to put up a nice haze and now it looked awesome. A win for dust...

Rain, Wind & Snow

Water and electricity don't mix too good. Keeping the wet stuff away from the sparks is crucial when you are outdoors. Expensive consoles and outboard racks need protection from the elements. FOH marquees, tents and raincoats - normally these are well planned. You have checked the weather forecast, right? Too common though the last minute dash to the supermarket for garbage bags as

LIGHTING | AUDIO | VIDEO | STAGING | INTEGRATION

the storm clouds roll in.

Local community festival in NE of Melbourne. Outdoor stage that I'd used often before and experienced crew for every department. Setup all by the book but one hour before showtime, the clouds are ominous and the wind was howling. Dropped the stage roof a bit, removed the backdrop (mainsail?) and still dicey. I made the call to can the gig and spent the next hour fending off death threats from the promoter ... until the heavens finally opened and washed everyone away. Tough call, but the right one.

Wind is a very powerful element - I'll not forget watching an unsecured two tonne RSJ launch from the top of a scaff tower in a strong gust. Thankfully, no-one got hurt but we did find new riggers pronto!

I've never gigged outside in the snow but still carry the legacy of tearing a ligament on an icy ramp loading out at Jindabyne 20 years ago. You bunnies can keep that stuff...

Mud & Slush

Add dirt and water together to get - MUD - the worst of both worlds. Fun for pies, crap for gear. At the end of a long hot festival day, a storm blew through, wet down and cooled off the crowd. Then a local character whipped up the punters into a mud fight. All good until the stage was pelted with dollop after dollop

until totally brown. Brand new mics written off, mud all over and through amp-racks, floorlights and stage gear. Took us hours just to do a basic clean but pity the poor guitar tech who had to strip back and rebuild a dozen vintage axes overnight before the next show. Fun times ...

Mud is not very helpful for transport either. One late night after a regional show, we parked the truck on the verge outside the motel. 50mm of rain dumped while we slept and of course the truck was bogged in. Sticks, branches and rocks under the wheel didn't help so I had a brainstorm - drum carpet. Not only did that make things worse but the drummer never talked to me again! Cue expensive tow truck from 60km away!

On the Road

Even the most hardcore city vampires need to get from gig to gig. Which means facing the outside world and all its greeblies.

Welcome to the joys of: walking 10kms for fuel because some dingbat didn't watch the gauge, having the band car stripped clean on the side of a mid-winter road by overzealous constabulary (they never did find anything!), fixing clogged injectors on the truck in a torrential rain storm, having the truck up on two wheels bouncing from side to side in peak hour traffic, or waiting four hours for

emergency services to clear the only way through after a semi got stuck half off a bridge.

Off the Road

Before the magic of GPS, people used maps or memory to navigate. Quaint, I know. One night after a gig in Melbourne's eastern suburbs, we were Sydney bound. Me: "I know a shortcut." Headed for Yea, I cocked up and took us to Warburton. Once we realised the error, the map said the Acheron Way pointed in the right direction so, off we went. Unsealed, steep and twisty, branches scraping the pan both sides - hard work in a 4WD, let alone 13T truck. Stopped on a steep incline because the king of all wombats had plonked his fat arse right in the middle of the road and wouldn't move. Rob the driver forgave me at that point. We lost way more hours than going crosstown but saw some awesome nature ... oops.

Fun Gigs, Big Shows & Sport

For several years, summer for me meant regional tours as a loader and rigger.

Camping under stages, bunkrooms in pantechs - 5 million star accommodation. Not so good when a bout of explosive gastro struck just before climbing into the front truss spot chair for the evening. I didn't go up - best not expose the talent to that potential s***storm! Same act, big outdoor NYE show, this time in the rear truss spot. Everything according to plan until the pyros start going off unannounced, three feet from my head. Different kind of storm erupted on the comms...

Another pleasurable summer gig: after race entertainment at Phillip Island Grand Prix. Top of the PA scaff tower had views of three quarters of the track. Hauled a TV (CRT of course) and receiver up to cover the rest. Awesome.

One year on Moomba, a king tide came up the Yarra and destroyed the cross-river multicore and spare. We cried and ran another one from the tinnie. The next year all the pyros went pear shaped and had the dignitaries running for cover. We laughed because it was funny.

And then there was Shakespeare in the Botanical Gardens. Afternoon setup and evening show in lush surrounds. Almost felt rude getting paid. Almost...

On It Goes

Yeh, the elements throw some production curve balls but also provide some of the more bizarre and memorable moments. Like the scout jamboree we played one time - pelting rain but the most excited crowd I'd seen in years. Like the umpteen festival moments, like the endless semis of a mega-act in the park, or Carols in the (various) parks, or windblown fashion parades, or messy street parties, or even messier country weddings. And what about sport? Grand finals, Olympics, horse / car / bike races, tennis tournaments - these stories could go on forever.

But it's time to get dirty in the garden. A shovel, a hose and no electronics in sight...

OUTPUT 001 〉

by Cat Strom
Photo Credits: Output Tours & Events

Stunning lighting and visuals co-designed by Matt Downs of SWS, IKONIX, and Colourblind's David Fairless for dance event

Output Tours & Events are an Australia-wide touring and event company that are simply lovers of all dance music, aiming to provide a show that's unique for both the artists and their fans. They are also the very first company to implement 3D visuals on stage during their larger scale Trance shows.

In October they launched edition 001 of Output at the Festival Hall in Melbourne, featuring extended sets from Aly & Fila, Jordan Suckley, Richard Durand B2B Mark Sherry, and James Dymond.

The incredible lighting and visuals were a co-design between Matt Downs of SWS, IKONIX and David Fairless from Colourblind.

"A lot of back end work went into the project," explained Matt Downs. "Bringing together the perfect team, careful planning and exceptional execution led to some great results. With only a limited amount of access time in the venue, the show was loaded in, produced and loaded out all in under 19 hours, which is a great credit to all the guys involved."

The event needed to fit into Melbourne's Festival Hall, which is not that spacious, so much of the design was based around projection, giving IKONIX the opportunity to put their Holo-Gauze to the test. Holo-Gauze is an ultra-lightweight and innovative

projection gauze that enables 3D hologram effects.

"As we had ultimate design control, we designed what would work 100% for us and look amazing, whilst showcasing the artists and the music," said Richard Saunders from IKONIX. "Due to rigging restraints in the venue for front projection and getting the desired throw, everything in the lighting design had to be pushed a lot further upstage to compensate."

The IKONIX guys worked closely with Matt Downs and David Fairless to ensure that the lighting worked cohesively with the illusion of the Holo-Gauze.

Close attention was paid to ensure that the lighting helped create the illusion of the Holo-Gauze; the more lighting upstage works best, whilst too much front lighting ruins the holographic illusion.

However the real star of the show was the integration using Notch as a standalone engine. As far as anyone on the production team knew, this was the first time anywhere in the world that a show like this has run solely off Notch. Usually Notch is used as a plugin / after effect with d3 and Ai for effects on IMAG on big shows. This meant that the whole show was generative content using Notch. IKONIX developed a system that took in audio feeds and could generate live visuals to the music. There was no pre-rendered content at all.

"The only thing that was predefined was the scale of the Holo-Gauze," commented Zachary Burton of IKONIX. "So each look had a base and then it was totally dynamic in terms of speed, rotation, colours, flashing lights on the content. We had 150 base "Blocks" of content to choose from. We also developed a touchscreen interface that allowed us to choose and manipulate different pieces of content."

The system comprised of two 4k inputs into a BARCO s3 and this allowed the running of an A & B system and also allowed control of the blend. Via a dual DVI Fibre transmission, HD signal was sent to two BARCO UDX32K laser projectors giving an almost 4k image on the Holo-Gauze.

"The Notch Block is essentially its own executable," explained Zachary. "We just execute on the server on the computer itself and then once it launches, all the parameters within the Notch Block are exposed; audio reactivity, colour, speed etc. All the Blocks were custom built to a 4k canvas."

"Obviously the projection influenced the lighting design heavily," commented David Fairless. "We pushed out the majority of the lighting rig into the wings to avoid diffusing the projection or washing out the Holo-Gauze screen. The mystery of how we were producing such state of the art looks was paramount to the show."

After rigorous planning with IKONIX, together they developed many of the looks and moments of the show. Having a prior knowledge of the Holo-Gauze content and the progressing themes of the performance was essential in producing the look of the show. Working together at FOH connected everyone that was involved, they rolled out looks and let each element flex at certain times.

David's motto when designing any show is 'Strength in Unity' and with Output 001 he went hard with this idea.

"With SWS supplying the rig we had three pods of eight Claypaky Sharpys framing the stage giving me numerous looks and programming options, which was the highlight feature of the lighting design," he said. "Their quick and precise movement to new positions and rapid gobo drops made the styles I was going for possible."

Symmetrical movements and mirrored intensity effects made the design powerful and gave another dynamic to the show.

Through intensive programming leading up to the event, and an arsenal of equipment throughout the stage and wings, David had an endless supply of ever-changing designs.

The outer wings consisted of GLP GT1 profiles for big sweeping crowd shots, gobo break ups, as well as highlighting the more intricate parts of the music with exceptional colour mixing. David also utilised the pin spot iris and zoom control.

"For this show I used the GLP JDC-1s in their new aggressive mode feature in the wings, and that gave a very bright, solid wash feature that could turn to a high powered strobe at the click of a button," added David. "The tilting action on the JDC-1 was perfect for build ups and drops over the crowd with a pixel controllable centre strobe line as well as rear LED bricks gave me multiple effects to pull out over the night."

To help with the illusion of the Holo-Gauze, it was important to illuminate the artists in ways that helped create depth on the stage. David used the new Ayrton Mistral S spot fixture to do this. These were positioned far into the wings, hidden out of sight, to shoot across the stage at the artists and David says that they blew his mind with how much punch and

versatility they delivered.

"The 17,500 lumen output proved to be so powerful and bright, there was no doubt the crowd could easily see the artists," he added. "A stand out in the design was having the first Minuit Unes in the country; SWS with TLC showcased four IVL Carrés along with the first outing of RTI Neo6 RGB Laser BARs (supplied by both SWS and IKONIX). This brought a whole new energy to the stage. The advanced lighting shapes and interchangeable textures and features made for an unlimited amount of looks. They also had a 180º angle that created stunning displays from anywhere in the room. We even threw in some of the SWS multi-burst lasers to fill in the gaps. With all 62 of these laser effects/heads on the show being DMX controlled from the lighting desk, meant we had full unity within the entire show."

The creative team wanted to add depth to the stage that didn't project light onto the Holo-Gauze, opting to use LED strips which were also used on the wings to tie in the overall look. Casey Loraine from LED Solutions ran the LED control and design. Overall there were 84 x 1.2m Pixel Bars used, with each bar being 72 Pixels and all being mapped and controlled via a Madrix 5 Dongle.

Matt Downs from SWS created the control set up for the show running ELC Smart switches and Nodes over fibre to front of house. An MA2 Fullsize was run with an NPU for parameters and aSCAN over network.

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ACETA SOLVES THE COMPLIANCE ISSUE & $100K OTHER REASONS TO JOIN

by Jason Allen

If you've been keeping up with the issue of electrical and product compliance for Australian technology importers, you'll know that the most complimentary way to describe it is 'complicated'. Our peak body, ACETA, have found a way to cut through the red tape and save our businesses valuable money and time, but you need to join to reap the rewards.

The problems with the labyrinth of compliance all comes down to the Australian Constitution and the roles of the States. Safety is the State's responsibility, which is why we have State police forces. It's also why we have state-based electrical safety requirements, which don't always line up across borders. This is why it's so hard to determine what level of certification the gear you're bringing into the country needs, and whether or not you need to pay for what can be extremely expensive NATA testing.

All of this adds up to big out-of-pocket expenses for product testing, and big overheads for compliance administration. Larger organisations have dedicated compliance staff, which they need to sift through the raft of standards and decide what's relevant and necessary.

And here's the genius in what ACETA have achieved. Through a lot of groundwork, solid legal advice, and talks with government, it has been determined that standards can (and are) set by peak bodies that can be deemed the benchmark reference in a court of law over a state-set standard. Therefore ACETA can choose which existing standards are the best and most appropriate for our industry, definitively classify the risk categories of all of the types of goods that are imported, and collate that information as a reference for their members, saving companies potentially hundreds of thousands of dollars in ongoing costs.

If, God forbid, an entertainment technology product was implicated in a serious injury or death, a magistrate or coroner could refer to a standard to determine whether the product was compliant, and if the importer was doing the right thing. Standards set by industry peak bodies, such as The Australian Medical Association, are often the first referred to in such cases, and as long as they are robust and stand scrutiny, can overrule any inconsistencies at the state level.

ACETA has compiled all the relevant standards into one simple document, along with risk category definitions, which will provide members with an efficient, authoritative source that makes it easy to comply with Australian law and keep the industry safe. "To an importer, the cost savings could be significant," said ACETA President Frank Hinton. "We have records of people NATA testing low-risk items that don't require it, at $20,000 per test. I know at least one business that could have saved $100,000 with this document. If you understand your risk priorities, you can easily save six figures."

With Version One of the document already with members, ACETA continues to work, with Version Two adding more product categories, likely due before Christmas. Version Three is slated in the New Year, covering RF issues. In the future, if ACETA membership is widely adopted, it could become possible for ACETA to manage compliance on behalf of its members, further reducing their overheads.

While compliance savings are by far the largest potential saving for ACETA members, there are significant gains to be found in other ACETA discounts and services. ACETA has an agreement in place for members to receive a significantly discounted rate with a Foreign Currency Exchange Broker, allowing companies to avoid hefty bank fees. "One of our members predicts a saving of $20,000 in the year ahead" confirmed Frank, "and they're quite a small company."

ACETA has negotiated a similar arrangement with an Australian clothing manufacturer, allowing members to get wholesale rates for small production runs, making high-quality custom uniforms or promotional giveaways economically realistic for smaller companies. "Everyone needs to make some clothes from time to time," illustrated Frank. "We had frustrated members making uniforms in China, and they'd get one good shipment and one bad. Another member went to an Australian company, but ended up with

RULES

TRANSPARENCY

STANDARDS
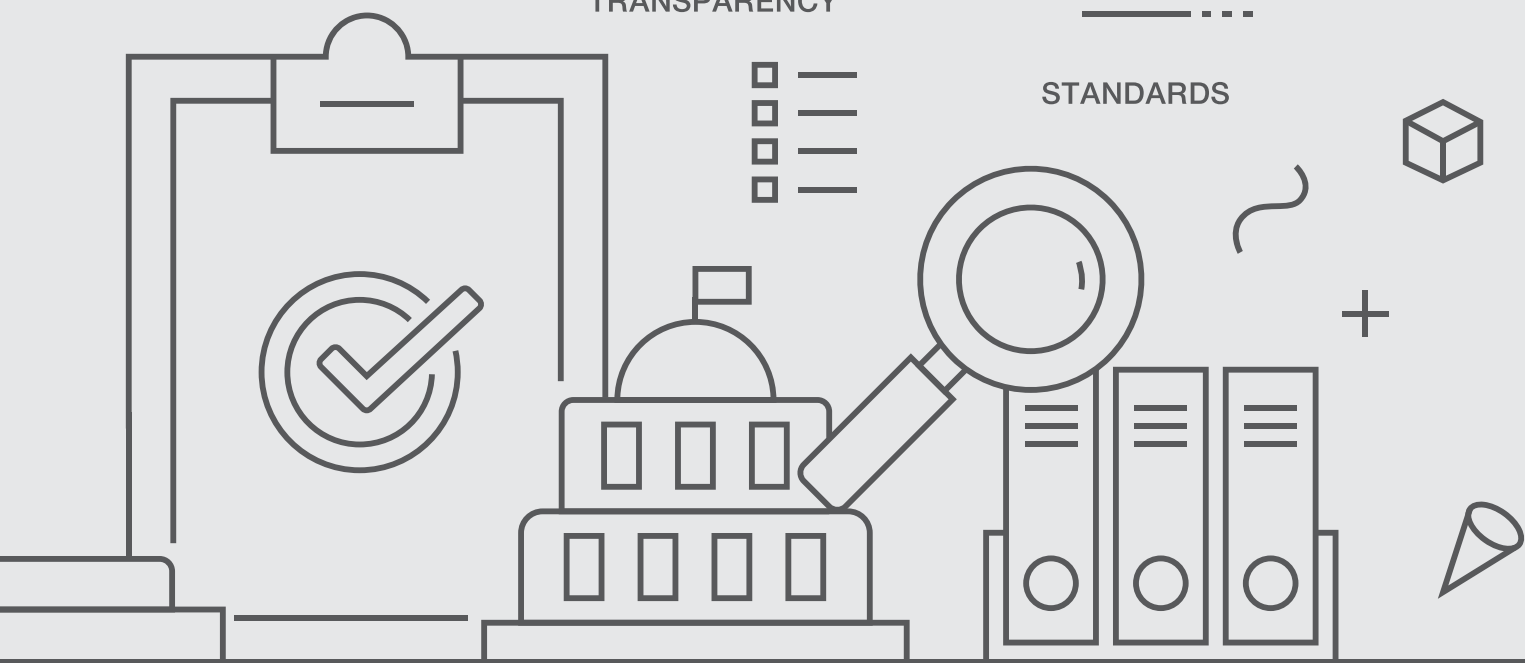
product from Bangladesh. As an Australian peak body, we want our trade to stay in Australia, so we've come to an agreement with a competitive Australian company that uses Australian materials and has won an

ethical standards award."

With some purchasers now biasing to ACETA members in public tenders, and companies adding their membership as a sign of

excellence and point of difference on their quotes, it's never been a better time to join. Simply go to www.aceta.org.au/join-aceta. html or call (03) 9254 1033.

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MIX IT URGENTLY, CAN YA PLEASE?

by Andy Stewart

Have you ever heard these words, or uttered them to an engineer? "I tell you what, I'll do the bulk of the mixing; you can just come in at the end and tidy things up…"

Whoever thinks this is the path to good mixes doesn't understand the mixing process.

Here's a scenario that plays out in the studio time and time again, especially in the lead-up to the silly season:
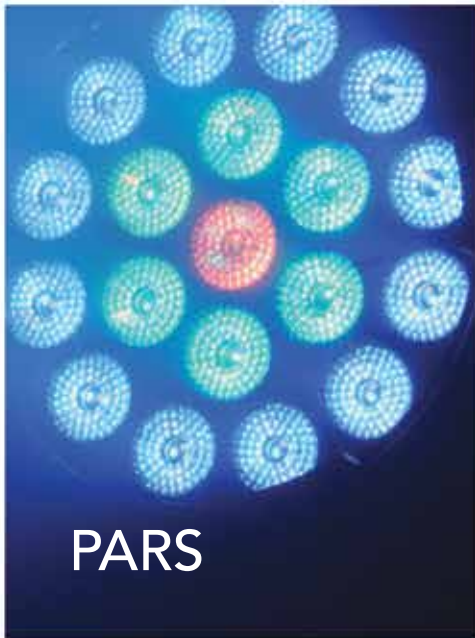
A musician spends months – or more commonly, years – on a solo project, only to suffer a bizarre malady at one specific point along its timeline. The moment they handball their project to a mix engineer (which is a rarity, I might add) the album suddenly needs to be mixed by "yesterday." The process goes from a free-floating, timeless, unrushed venture, to a panicked, impatient one. Suddenly the deadline is fixed, the urgency palpable.
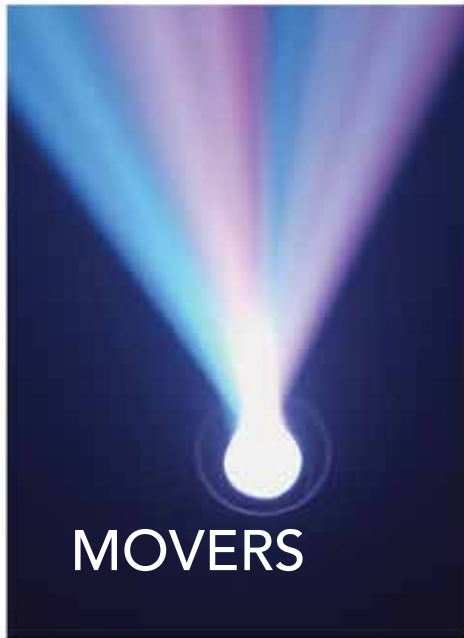
Sound familiar? I'm not sure what side of the ledger you've found yourself on in this scenario, but it happens constantly, and for a wide variety of reasons.

Then the next phase kicks in, almost immediately. After a bit of real-world push back from the engineer against the musician – that the album can't be finished by yesterday, as per the original plan – tensions heighten. From here the project starts to oscillate wildly like a goniometer between any numbers of extreme alternatives:

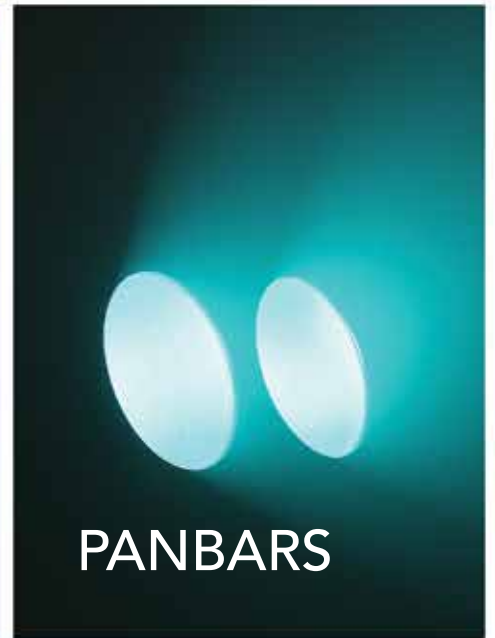Some musicians flip their planning on its head, saying: "Perhaps just forget it then; I'll mix it myself if you're too busy…" only to come back the next day and flip again: "I've thought about it, and last night I was reminded how crap I am at mastering (flustered clients often confuse the word 'mastering' with the word 'mixing'). Can you do a rush job on it, please? I'll pay you whatever it takes…"
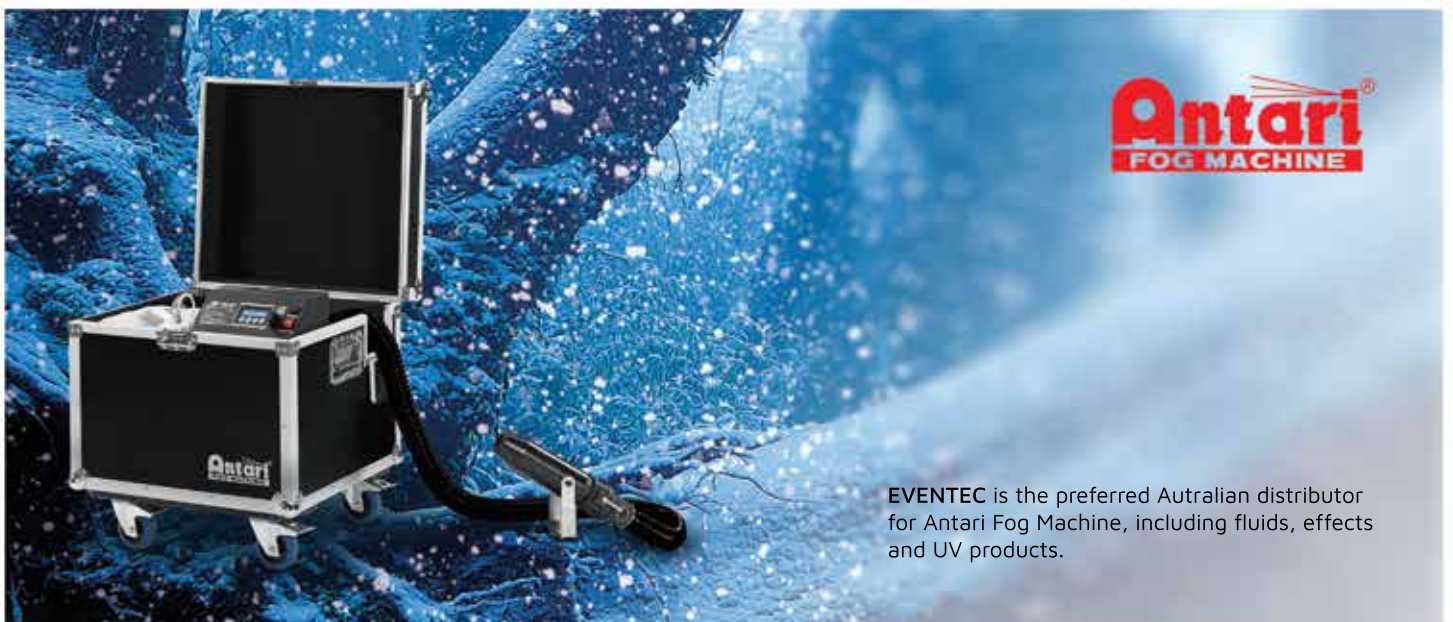
LISTEN HERE

Andy Stewart owns and operates The Mill on Victoria's Bass Coast. He's a highly credentialed producer/engineer who's seen it all in studios for over three decades. He's happy to respond to any pleas for recording or mixing help... contact him at: andy@themill.net.au

Andy Stewart

The day after that a new insanity (disguised as sanity) prevails: "How about I mix it at home and you just spend a day tidying things up at the end?"

My response: "Umm, are we talking about mixing here, or mastering?"

I can never resist the dig.

All Aboard!

There's no underestimating, or denying, the amount of effort it takes to push a solo project over the line. It's no mean feat, and I'm full of admiration for anyone who can pull it off, especially if they've got a partner and kids.

The downside of all this unpaid work, however, is that it grows exhausting after a while. Moreover, the personal circumstances musicians find themselves in at the start of a solo project are not usually the ones they inhabit at the end. Single musos with oodles of time on their hands for late-night overdubbing at the beginning of a solo project often later find themselves with a new job (how inconvenient), or partners that move in and don't take kindly to mic'd amps in the kitchen or 24-channel mic looms across the hallway (how intolerant). Things change, especially if you wait long enough.

Regardless, no-one has the capacity to push something down the road forever. Eventually you have to call the RAC. It should come as no surprise then that when a solo artist eventually hands over their substantial body of work to a mix engineer, they feel such relief that they mistakenly think the job is, in effect, done.

But it's not! Not by a long shot in many circumstances, particularly if the music has endured countless recording processes, overdubs, edits and partial re-incarnations. Ironically, often it's the recording process that's the easy bit!

Out of this chemical cocktail of bottled up tension the panic around time distils. The desperate need to wrap things up has often been held at bay by the artist for years: hidden by self-denial, dodged like Tyson, and resisted at every turn. But now it's unleashed, and if you're in the way, look out! Without realising it, you, the newly designated mix engineer, could unwittingly be hitching a ride on a runaway train, and if it derails, one inalienable fact will remain: it's always the last one on board who gets the blame for the disaster!

So it's during this handover period that all parties need to be sensitive to the emotionally charged nature of a solo project. So much has been invested thus far into the work – an album of songs that has behaved more like a super-massive black hole at times than a 12-inch disc – that it's easy to find a scapegoat the moment temperatures rise. And they always do, because once the handover takes place, the drugs wear off.

Switching Tracks

It pays to have a plan at this juncture, and stick to it like glue. Don't second guess everything, or go around in circles yet again. The time for that has passed… was it last year (or last decade)? And don't, whatever you do, start to second-guess the need for an engineer in the first place just because they didn't jump straight into your project the following day.

More than anything else, however, don't get hung up on some unrealistic deadline. It doesn't help anyone to be pushing for an arbitrary finish date – especially when everyone knows there hasn't been one for the rest of the entire project's life. The irony won't be lost on the engineer, and they won't find it amusing, only annoying, or possibly infuriating.

Once the engineer has the project in their capable hands, patience is a must. If you're the musician, don't ring the engineer every day for a progress report when you know they have 10 other projects on, or at 6AM because you've been up all night worrying about how things are going. Don't tell them things like: "It feels like things are taking ages! Should I just be mixing it myself?"

If you're going to be like that, the short answer is, yes.

Similarly, if you're the engineer, don't leave it for three weeks before you get back to the solo artist with said progress report, or you might find yourself in a screaming match before three words are uttered. Be sensitive to the fact that they're champing at the bit, and desperate – though it's arguably unjustified – to wrap things up. Don't let their stress levels around the timeline freak you out too much, and if necessary, explain the process in a bit more detail than you otherwise might, so they have something to keep them company late at night while they're freaking out.

There's no easy way through such an emotionally charged project other than via the same mixing route you always take. If you rush it, or buy into the panic, you might find yourself working 24/7 only to the detriment of your own health and the sanity of those around you. And later – and believe me this happens – there remains the very real prospect that the artist will, at the end of the project, simply shrug their shoulders and say… "I've actually decided to hold off on the release 'til next year because a mate of mine is getting married in Bali in December, and he wants me to be the best man!"

At this point every engineer would be well within their rights to utter two expletives very loudly to their client! [Insert your own here!]

Deadlines are mostly security blankets, held by musical infants or hangers-on desperate to see their own pay cheques rolling in. If the album project you're committing to is not a commercial release by a significant solo artist with the backing of a large record label, chances are the album is coming out after the mate's wedding.

RISKY BUSINESS

by Simon Byrne

The live production industry carries significant risk. Large amounts of equipment, temporary engineering, big power in use, time pressures and audiences combine to make an environment primed for an incident. Whether an injury, an event cancellation, equipment damage or theft, they all represent risk.

The riskiest of events are the outdoor ones because the weather cannot be controlled. This is why promoters should have weather insurance.

Weather Insurance

Promoters can take out two types of insurance for adverse weather. For both types, insurers will require that any stage areas at an event are to be covered on three sides and above, and all electrical equipment is to be protected from weather to the required industry standard (think Australian Standards).

The first and cheapest option is event cancellation and abandonment insurance which includes cover for adverse weather. This insures against most causes of cancellation or abandonment. The weather insurance cover provided is defined as severe weather causing safety concerns for those attending or participating which necessitates cancellation, abandonment or postponement of the event.

It does not cover for poor tickets sales, even as a result of rainfall causing discomfort, but not safety problems. That is, the promoter cannot claim because the punter turnout was low.

So what is adverse weather?

Adverse weather is defined as extreme weather conditions which pose a serious threat to the safety of those attending the event. This also extends to the setup. If the rig cannot be safely set up due to weather, a claim can be made.

Loosely speaking, a threat to safety due to weather is defined as winds over 50 km per hour, or rain being blown into the stage from the front, thereby exposing equipment on stage to rain and risk of electrocution.

But, the burden of proving that the loss results from adverse weather falls upon the insured, so it is a big call for a promoter to make. If the promoter pulls the plug due to

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- The Mantra Lite is Australia's top-selling, small lighting console for controlling conventional, LED and moving lights. It is popular with non-lighting users such as schools, churches and audio/video operators who need simple control; whilst also providing advanced control features for the experienced lighting operator. The software was recently updated to v2.0, introducing many new and advanced features whilst still offering ease of operation and an intuitive workflow.

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DIO (DANTE INPUT/OUTPUT)

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- The DIO (Dante Input/Output) from tm stagetec systems is known for its quality design, functionality and reliability. This impressive device was designed in Australia as the army knife for audio; the DIO has an extensive array of tools and benefits for a huge range of audio applications. The device is a key feature in many of tm stagetec systems' fully customised PA and broadcast systems.

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weather and his insurer disagrees with his call, the losses could be huge.

The second type of weather insurance is "Pluvius" Insurance. (Pluvius being the Latin word for Rain). This covers for rain only.

This style of insurance requires a pre-agreed measurement of rain to be exceeded during the insured hours for the policy to be operative. The event does not have to be cancelled for a claim to be payable. Premiums are calculated based on the historical rainfall statistics for the event location.

This is a more expensive form of insurance, but it does mean the promoter is covered for low ticket sales due to rain.

So if you are being contracted to do an outdoor event, it might be worthwhile asking the promoter what type of weather insurance they have. If they don't have adequate cover, it will be up to them to pay you out if the event is abandoned due to weather. You might not be comfortable with that risk.

This highlights another risk in that promoters will occasionally incorporate a company just for a particular event. This company will not have any assets and therefore it is pointless to sue it. That is precisely the reason for the company's existence, to protect the promoter from claims and in some cases, leaving contractors high and dry. In this situation, you probably want director's personal guarantees as part of a contract should your clients have this structure.

Public Liability Insurance

Aside from weather insurance for promoters, all businesses should have Public Liability insurance. It provides cover against common law breach of duty of care.

This refers to the obligation to take responsible care to avoid injury to a person whom, it can be reasonably foreseen, might be injured by an act or omission. A duty of care exists when someone's actions could reasonably be expected to affect others.

Public Liability insurance protects you if your actions, your negligence or the condition of your property is found to cause a person to be injured or killed, or a person's property to be damaged or destroyed or they suffer loss as a result of relying on your services.

It is really important. In my view, you would be crazy to run a business without it because a single claim could destroy you financially.

But, Public Liability insurance does not protect you from everything. It is important to understand that it is against the law for insurers to cover for illegal acts. If they cannot provide cover, they certainly cannot payout if a claim is made which is as a result of an illegal act.

Say rigging were to fail that was knowingly installed illegally, the insurer won't pay out! Simply because it is illegal rigging, it cannot be insured.

Adherence to Australian Standards is extremely important. Once again, if you supply cheap Chinese knockoffs that don't adhere to Australian Standards which cause injury or damage, the Public Liability insurance could be voided.

Unless specifically stated, Public Liability insurance does not cover for contracted liability. This is important to appreciate because quite often you'll be asked to take on liability in a contract, for which you will not be insured because most policies specifically exclude contracted liability.

Consider that you crosshire some lights and the hire contract states you assume full responsibility for the loss or damage to the lights, as well as any injury that could result from their use. Unless you have negotiated this with your own insurer, you might not be covered because you have contractually assumed the liability from the hirer; a liability you otherwise would not have.

Another true case is where a Melbourne band hired a venue. As part of the contract the venue supplied the security staff, but the responsibility for the security staff was contracted to the band as part of the venue hire agreement. Another contracted liability.

Well, some of the venue's security thugs bashed up a punter outside the venue and the punter sued the venue, but the venue deflected the claim to the band because they had contracted the responsibility for the security staff to them. A claim was made with the band's insurer, but it was rejected as it was a contracted liability.

Venue hire contracts are particularly known for contracting out unreasonable liability to their clients. Insurers are especially wary of these because they are written by high-priced lawyers so they often contain clauses such as "the client indemnifies the venue for liability by any cause whatsoever". That represents huge risk for the client, potentially without cover from their insurer unless specifically agreed to, and insurers usually won't agree to such open-ended clauses.

Rather scarily, some promoters run events without public liability insurance at all. Their argument has been that as long as all their contractors hold it, they are okay. This is naive because the courts can attribute blame for an incident to multiple parties. For example, in an incident, the courts may attribute 60% of the blame to the promoter, and 40% to the production company.

There have been cases where workers for contractors who have suffered a workplace accident at a concert have been paid out by their employer's workers compensation insurer. The employer's workers compensation insurer then successfully apportions some blame to the promoter due to negligence, and therefore a claim is made on the promoter's public liability insurance. Public liability insurers are wising up to this and are specifically excluding WHS claims, or

introducing very large excesses. Clearly, you want proper workers compensation insurance in place to protect yourself from any workers compensation claims from your contractors.

Equipment Insurance

Equipment insurance is the comparatively simple side of the insurance industry, but once again it is all in the details.

Some hire companies only insure their equipment in their warehouses, and contract out the liability to their clients when it leaves. It is the cheapest way for them to insure the equipment but it is not covered whilst in transit, and putting the responsibility onto the client is questionable because they are unlikely to have cover themselves, unless they have specifically taken out cover for the contracted liability for that hire. Seriously… who does that?

Other companies insure their equipment irrespective of whether it is out on hire or not. This is of course much better cover. Even with this, the insurance will not completely absolve the hirer of the reasonable duty of care to look after the equipment, but it does mean that the hirer is protected whilst out on hire or in transit.

If you are in the industry long enough, incidents are going to occur. It is important that you, your clients and your contractors have adequate insurance.

When taking out insurance, it is essential that your insurer has a good understanding of your business, your activities, and any other information that might be important in providing proper cover. This should be in writing so when a claim is made, the circumstances won't be a surprise to the insurer. Things that need to be included would be for example, is the equipment left out overnight, do you need storm cover, who are your clients, what is your security and so on.

Don't assume anything, declare everything, and read the contracts. Because our industry is so diverse, insurance cover is tailored to each client's unique requirements. There will be exclusions in contracts that you should be aware of.

All insurance contracts have their own wording and may differ to this article. This article is of a general nature only, and could even be wrong in your circumstances. You should absolutely seek your own professional advice.

by Cat Strom
Photo Credits: Troy Constable

THE LIVING END

On the back of releasing their eighth studio album, Wunderbar, Australian rock legends The Living End have begun a string of tour dates throughout the summer.

Echoing the Wunderbar album cover, the stage design is littered with old TVs, half of which actually work, so lighting designer Anthony Petruzio has plugged them into hot-patched dimmers to get static running on their screens, and lit them with a bunch of TourPro Zoom Par Juniors. A spiral backdrop appears later during the show.

"It's the first show I've ever done not using washes as backlight," remarked Anthony. "I'm using GLP JDC-1s for more of a colour back wash with colour and depth also coming from the Zoom Par Juniors lighting up the faces of the TVs. The profile fixture changes from venue to venue; I have Robe BMFLs here at the Enmore, I had GLP GT-1s yesterday and I

have Martin MAC Vipers tomorrow. Any good profile fixture suits my needs."

Anthony's design was balanced but not symmetrical, with some of the truss-hung BMFLs fixed to drop pipes that also featured TourPro Nova warm white 4-cell fixtures. Upstage there were staggered heights on the eight uprights with each topped with a GLP X4 Bar 20 and underneath that, a Portman P3 PIX3L.

"It's a simple show and I admit I wasn't sure how the TVs would work, but it's come up really well," said Anthony. "I don't use the X4 Bars or P3s until later in the show, starting off

Anthony

Michael

Woody

with mainly just the spots, JDC-1s and the Zoom Pars on the TVs. I also have GLP X4 washes on the floor for backdrop, side and front wash. A couple of GLP GT-1s are on the front truss for profiles as Chris solos from many positions and I can set up a few positions for that."

Anthony decided to tour with an Avolites Tiger Touch II, as he works for TLC, the Avolites distributor in Australia. It's been an interesting challenge for someone who has used the MA platform for twelve years.

"The best way to do training on a console is to use it in anger!" he said. "That way I'm answering my own questions as I do my programming. The effects engine is fantastic and I really like its ease of use, plus it's small and compact for travel. Avolites consoles have come a long way from the old Rolacue! Really, consoles all do the same thing, they just have different ways of getting there."

At FOH was Woody Annison who was keeping it old style rock'n'roll, not just in his mix but with a bottle of beer and ciggie in his hand.

A control package from JPJ Audio was toured, along with some gear from Deluxe Audio, and in-house PAs used.

Woody ran a DiGiCo SD10 with an SSL C2 compressor over the mix, keeping it simple as befits a great rock'n'roll band.

"We keep it raw and with an energy that doesn't sound processed," he said. "With other bands I may use a few more toys because of their requirements and playback tracks, but with the Living End it's basically 30 channels of rock'n'roll. I really like the way the DiGiCo SD10 sounds and it has great preamps, but it does have some flaws and quirks in its software."

Woody commented that the band rehearse a lot and they work at their own dynamics, adding that some other acts he works for have a different approach and so he has to work on pushing the dynamic!

Michael Shanahan was controlling monitors from an Avid Profile providing all three guys on stage with a stereo mix and a full band mix too.

"Chris has the most record-like sounding mix with his guitar and vocal pushed a little bit," added Michael. "Scott's mix is very bass heavy and Andy's is quite drum heavy but also a full mix. The main thing I do during the show is ride the ambient mics because they feed off the crowd and I rely on them a lot, so I leave my finger on that fader for the whole show."

The band has a Sennheiser endorsement with Chris Cheney using a 431 for his vocals whilst the other band members use 935 vocal mics.

"We have a standard Sennheiser drum mic package plus MK8s on guitars with an sE Electronics baffle around the back of them," said Michael. "There are live cabs facing backwards so we can turn them up to get the tone we are after, again with baffles around them to keep the sound consistent from night to night. For the bass there's a 421, and 416 shotguns for ambient mics."

The band are all using IEMs which are naturally Sennheiser G3s.

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A history of products from 1971 until 2018

by Julius Grafton

Since 1971, there's been non-stop research and development of new lighting consoles by JANDS in Sydney.

"In the early seventies, most concerts were in the daytime", says JANDS director David Mulholland. "We were doing sound, but for the Led Zeppelin concert at Randwick Racecourse we were asked to supply some fresnels in open white to fill out any shadows on the stage".

Soon the need for concert lighting control arrived, in an era where the only dimmer boards available were designed for theatre and made by Strand Electric. Typically, these had two or three presets and not much more. Ironically JANDS had won a contract to make the circuit boards for Strand dimmers, which at the time were made in racks of 10 channels.

Enter the JANDS JL1, for want of a better name. "Our first console had 2 presets, 20 channels, 45mm sliders, A/B switches, but no flash buttons", David continues. Next came the JL2, with 60mm faders, A, A+B, B mastering and 30 channels.

These early manual preset boards were connected by thick analogue multicores to the dimmers, which required one wire per channel to send the + or – 10v DC control signal.

"By the mid-seventies we started to see control boards by Electrosonics and Alderham with matrix patching for scenes and chases. By inserting a special diode pin into the patch panel, you could assign any of the control channels to one or more of the scene or chase masters. This inspired our JL3, which featured 48 channels, 2 presets, 16 scene masters and a high density matrix board manufactured by Ghielmetti Switzerland."

The JL3 also included a flash button on each channel and a Chaser, with a thumbwheel to set the number of channels in the chase – up to 8 steps, and switches for forward, backwards or shadow chase, which was all on, one off.

The next iteration was the JL4, again with 16 matrix masters, but the matrix panel was at the top right. This was to keep the fragile pins out of the way as they could break and be jammed in the panel. Subsequently the JL5 was built with 60 channels, 20 Scene Matrix masters and 3 x 6 channel chasers with their own masters and matrix.

Up until then these consoles were built specifically for JANDS Concert Productions. There was a wide gap in the market, with many rental firms modifying Strand Miniset and SP preset boards with matrix sections and flash buttons. The Strand product was expensive.

In 1980 JANDS launched the JL24/8 as a commercially available console. "The prototype was painted brown, (the colour of our lighting cases in those days) and sold to Billy McCartney who was working in Thailand and needed a console for a tour by the Osmonds that year," David recalls.

The JL24/8 had 8 matrix masters, with the last 3 switchable to a chaser. The matrix panel was safely set low with a hinged perspex cover. It was a runaway success, followed shortly after by the JL36/12. These became the standard lighting consoles across the booming suburban touring market that exploded in the early 1980s. There were literally hundreds of bands and touring production trucks on the road, most with a JL console in the back.

Soon after the JL12/2 followed, a real 'bread and butter' 12 channel console for smaller shows and schools. These units, later named as the StageMaster, sold in large numbers for many years.

The Memory Board Arrives

JANDS had in 1982 purchased Rock Industries, whose founder Richard White was deep into research for a memory console. These had revolutionised theatre and TV in the mid 1970s, with insanely expensive systems like the Strand System DDM which offered immediate memory recall and magnetic tape storage.

Richard's research led to the JANDS Aurora, in 48 or 60 channels. It had 24 scene masters and could store 192 scenes and 22 chase sequences with up to 48 steps. The Aurora was in design from early 1984 and the first production console was shipped in December of that year. Jands Production Services used Auroras on a number or tours including Tears for Fears 1985 shows where 2 consoles were slaved together and Jands long-time head of manufacturing, Terry Cooney, was enlisted as tour tech.

JANDS Lighting lead designer David Timmins takes up the story: "The Aurora used a Z80 processor on a commercial STD-bus motherboard. It worked reasonably well, but we were breaking new ground and it was prone to the odd crash. But the main problem was that when it crashed, all the channels would fade up to full. That was usually bad since back then many shows did not provision enough mains for all the dimmers to be running at 100% and the main breaker would trip. Finding a popped circuit breaker in a venue can be tricky in the middle of a show!"

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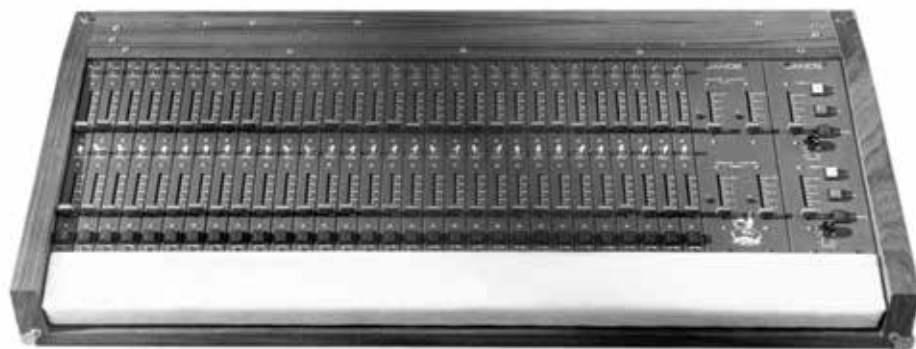
JL2

"Our manufacturing records show that JANDS built 45 Auroras and released 3 software versions."

Richard White moved on from JANDS and today is one of Australia's most successful software vendors, heading Wisetech Global. He also returned to JANDS in 2016, buying a significant non-controlling shareholding.

JANDS CEO Paul Mulholland had visions for selling overseas. Lighting technology was moving fast, and DMX 512 had arrived, allowing simple lightweight cabling from control desk to dimmers and the new moving lights that were arriving commercially. Prior to the widespread use of DMX rental systems like Vari*Lite, Pan Command had produced dedicated moving light control consoles with proprietary cable systems and control protocols.

In 1988 JANDS introduced the ESP, in 24, 36 and soon 48 channels. It had 12 scene masters, and rudimentary memory presets so you would set the chase and the pages using a compact 2 digit display. It sold well in Australia, the US, and the UK, and was in production up until 1992. And of course, it had a DMX output.

"That DMX output caused a few problems of its own" recalls David Timmins. "I remember doing a show at the Kardomah Café in Kings Cross with a prototype ESP and having the DMX UART crash on me – it was spitting out rubbish making all the channels continuously flash. Lucky I had a backup and operated the rest of the show from side of stage using an old analogue console". Production versions were fixed with a higher spec part and that problem never resurfaced.

An increasing number of dimmers were being used, and with the advent of scrollers and then multi-parameter moving lights, the race has been on for more control channels. Today's top end consoles can easily handle 18,000 or more.

In mid 1989 JANDS launched the Instinct which started with 48, then 60, and later 72 channels. David Timmins: "The hardware was designed to do up to 72 channels with 864 scenes and 36 chases. We had a 24 character by 2 line LCD screen, and you set the chase, scene page and other parameters in there. It also had a softpatch and an offline editor. It was very sophisticated for the time."

"It sold very well in Japan; they had a real thing about channels and they loved the 72 model. A bit of trivia - as part of the service routine, the Japanese service techs would replace every fader once a year. We had no idea at the onset how long the faders would last, but they changed them all!"

Next Steps

In early 1990 work started on the EVENT, based on the 68,000 Motorola 32-bit processor as used in early Mac computers. "We had months of weekly meetings over the specification, figuring out how the automation would work. With that document ready we then had two hardware and two software engineers working for over a year to make it reality."

Launched in February 1991 with 24, 36, and 48 channels, the Event range was very successful, with the last one built in September 2010. "Events were really clean inside, one 20 way bus around all the cards, one power supply, one processor card. They were easy to put together and pretty reliable. With Event we released around 15 software versions in total that included bug fixes and feature updates. Features like wide mode, where the two presets could be used as one for double the channel count, and user definable pages were unique at the time."

Event used a 32 x 2 LCD module, which was uncommon and caused supply problems later on when it became obsolete. "We had to custom tool a replacement module which wasn't cheap," David adds. JANDS added a number of option modules, including a memory card, video output, Socopex analogue output, and later a floppy disk drive – easy to do since the console hardware had been designed with add-in module spaces on the back panel.

The Event Plus built on Event success and was released in 1992 with 48, 60, or 72 channel versions. With extra scenes and more processor power from a 68030, and an uprated power supply, it was also a success and well liked in film work.

With Event established, JANDS turned to updating the ESP. A new model was based on Event hardware with the same or similar cards and the same core software but released as the ESP 2. In 24, 48, or 60 channels, the ESP 2 also did wide mode and could be linked to an Event console. Production of the ESP2 ceased in 2010.

A baby console to replace the ubiquitous JL12/2 followed. The Stage 12/24 was based an Event preset card but had no show storage. It did feature temporary 'grab' scenes and a chase function.

Behind the scenes a deal was being made that would make world news. Flying Pig Systems were riding high on the success of the Wholehog console that had revolutionised moving light control and were working on its successor. Codenamed TNT (The Next Thing) the Wholehog 2 was to have all new software and hardware. JANDS and Flying Pig Systems reached an agreement to collaborate on the development of an economical moving light console that would extend the reach of the Hog software. It was agreed that the Wholehog 2 and JANDS Hog consoles should share the same code base, and work on the JANDS Hog began.

JL 12/2

In mid 1995 JANDS unveiled the JANDS Hog 250. It was a dedicated moving light controller, separating all the intensity, position, colour, gobo and beam parameters and providing 250 channels. The JANDS Hog 600 followed soon after.

David Mulholland: "We had thought a lot about a moving light console and it wasn't far from where the Pigs wanted to go. The Wholehog II software formed the basis for the 250 and the 600."

By the late 90s, console effects were becoming a key selling point, and for this the processor in the JANDS Hog was not up to the task, so work commenced on a replacement. In 1998 the Echelon was released with a new "ColdFire" processor, updated displays, and 1024 channels. Like its predecessors it ran software by Flying Pig Systems and included an effects engine for the first time.

In 1999 High End Systems bought out Flying Pig Systems. The Echelon was rebadged

as the Hog 1000 and the family extended to include a smaller Hog 500 console. Both were successful worldwide and were still being made in 2009.

"The writing was on the wall", said David.

Meanwhile the Event IV family was released in 1999, using the same processor as the Echelon. The Event4 grafted a moving light section on to a traditional 2 preset fader board. The 408 had 8 scene masters while the 416 had 16 scene masters.

Vista T2

High Stakes: Vista

"In 2000 we moved off on our own to come up with a moving light console that would change the world of lighting," said David Mulholland. "It was a three-year development process. The T Series Vista was shown in October 2003 at PLASA. Dave Harding did a demo at the show, on the hour, showing the timeline and the GUI (Graphic User Interface) and it created an amazing reaction."

"Vista was about visualising the timing of event transitions, so you could see and manipulate when a fixture would fade in, change position and so on rather than punching in long sequences of numbers on a keypad. We had an R&D grant from the Australian Government to develop the software - our pitch for the grant included

a demo showing a group of lights fading up and changing position in a timed sequence. To build the cue on a regular console it took around 60 key presses, then we showed how on Vista you just clicked, selected and dragged in the timeline and it was done."

The Vista T4 first shipped in March 2004 with 4 DMX outputs standard and a capacity of up to 8,192 channels. Then came the smaller T2 with less playbacks, but with the same channel capability. Both had a top of the line Wacom pen tablet built in.

The S3 followed; a control surface that connected via USB and used your laptop for the brains and display. You could buy a licensing dongle for however many channels you needed – unlocking 128 to 16,384 channels.

"Vista's strong point was that it was scalable. At the time we were the only people doing that", David said.

E2 was an extender for the T2, adding more playbacks. S1 was an even more basic control surface. 5 playbacks, multi pages, programming sections. M1 was a simple playback surface. I3 is an S3 with added brain minus display. D1 offered more than 16 universes.

"In late 2011 a new flagship console, the L5, was released. It was the last of the really big surfaces with a 22" Wacom full HD tablet, industrial motherboard, and Quadcore Pentium processor. It replaced the T2 and T4. Possibly we misread the market; the screen cost us over $2,000 and that made it a very expensive console."

In 2012 JANDS released the Stage CL – which almost turned full circle back to a fader per channel. JANDS continue to sell this console in large quantities. "It did something unique, it is easy to use. It has Vista software scaled

down, and a touch screen interface" says David Timmins.

Sale To Chroma-Q

Software development continues on; new versions, adding features and bug fixes. In the current version 2 software build is 18,361 – that's the number of times one of the software engineers has committed some kind of change to the Vista code!

"Software development is never ending. We had 5 software engineers, working mainly on Vista, for over 10 years and that's only recently dropped under 4. We have been working on version 3 for over two years. This version includes customisable workspaces, improved multi-element fixture visualisation, effects masters and a much-expanded command line interface

"There are 2 USB consoles that have just been announced by Chroma-Q, we developed the EX as a cost-effective replacement for the S1, it has double the number of playbacks, 5 extra encoders and 12 function button and then there's the MV which replaces the M1."

"We had scoped out an L5 replacement but meeting the market's price expectations is tough."

"So now we provide the software engineers under a service contract to Chroma-Q. They plan to expand the team and bring new engineers on board in Canada.

"We're very proud of Vista, and we would like to see it have continued success in someone else's hands. Chroma-Q have a fine reputation for hardware manufacture and we are confident the product has an exciting future in their hands."

With this comes the end of nearly half a century of lighting control development by JANDS.

THE PROPERTIES OF SOUND

by Sidney Kidman

Andy Stewart of The Mill writes a regular column in CX which I always look forward to reading. Earlier this year Andy wrote two articles about positioning voices in the studio mix; taking care of early reflections and reverbs. I found Andy's advice excellent (as always), heightening my awareness of how voices (vocal and instrumental) will sit in the mix.

As we work in our DAWs (ProTools, Cubase, Ableton, Reason etc.), we use "black boxes" as tools to manipulate our raw sounds. These are the many processors such as equalizers, compressors, delays, and reverbs. Once they were literally boxes of electronics that we patched in via a patch bay, but now they exist as mostly digital algorithms that can be called up and patched over the sound we want to modify. We're talking about working in the binary digital realm; i.e. with zeros and ones in "words" 64 bits long, being added in a string of operations, to modify the original digital samples of the sound.

Many users will not understand the precise operations of these tools, but we use them anyway to "improve" the raw recorded or synthesized sounds. The raw recorded sounds, of, say, vocals or acoustic instruments, probably will not sound too exciting, compared to what they will become. Decades ago, people going about their business heard the sounds of everyday life, which included all these effects occurring due to natural processes. Now many people spend much time hearing what comes into their ears through ear buds and headphones.

With the rise of recording studios, black boxes were built to mimic these natural processes in the recorded music, as it was found that the recorded music became more interesting when these natural processes were added

into the recording, often in exaggerated amounts (e.g. Phil Spector's "wall of sound" (for those of us who can remember)).

As you are working enthusiastically in your home studio, I think some fundamental knowledge of the properties of audio may help you choose the most effective tools, thus saving you time. I would hope that the following information will in some way, augment Andy's advice.
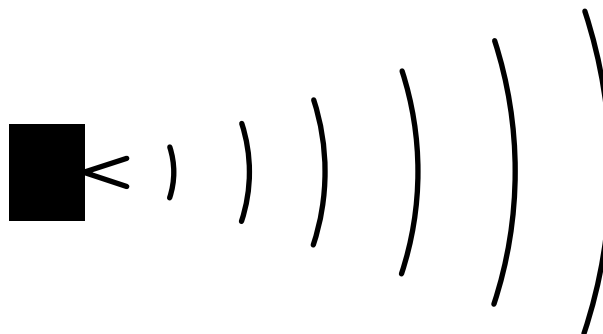
1. Sound waves emitted from speaker

Sound is propagated (travels) as pressure waves, with the energy being transferred from any vibrating surface (speaker, string, membrane) to adjacent particles in the air (or water or solid).

The balls on a snooker table offer a reasonable analogy. Initially, the propagation is longitudinal (one dimensional), however, just as a clump of balls will go off in different directions, so does the movement of the air particles, with the sound radiating into all dimensions as it propagates.

What we call 'sound' is the result of particles (atoms, molecules, etc.) vibrating in a section of the frequency range, from around 20 Hz (hertz, or cycles per second), to 20 kHz. These vibrations travel out from the source of energy. Mostly, we are talking air, but bear in mind we can hear under water, and through solids (e.g. bone conduction). This energy reaches our ears, and presto, we experience sound.

S, D, DS, SB, R, ER, CD

These letters represent some useful acronyms for concepts that enable us to deal with the propagation of sound.

"S" (source) represents a sound source. It can be any vibrating object (speaker, string, drum, gong) which is transferring energy into the surrounding material, e.g. air, wood, water.

"D" (distance) represents the length of the direct path from the emitting object (e.g. a speaker) to the receiving object (e.g. ears, microphones, sound meter, etc.). In air (the norm for our purpose) sound attenuates as it travels by a factor of $1/D^2$ because the medium (air) absorbs some of the energy, and more so as it disperses three dimensionally, hence less in any one line of direction.

DS (direct sound) is the sound travelling in a straight line, from S to a receiver.

SB (sound beam); for convenience, we can

use this term to describe any one single linear path of an emitted sound which is radiating from a sound source. The concept of a sound beam enables us to understand what happens when one such SB (sound beam) reaches a surface of a different medium, say, a wall of concrete or timber. For hard surfaces, this SB will mostly be reflected (think of how the waves keep rippling in a swimming pool). This reflection is equal and opposite in angle to the incident of arrival.

2. Reflected sound beam
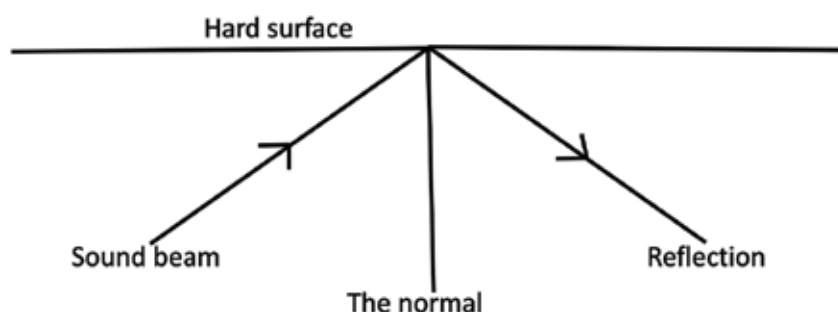
When sound reaches softer or moveable surfaces a proportion of that sound will be absorbed and less will be reflected away. In some reverb units this may be controllable as a "damping" factor.

R (reflections) represents that group of sound beams which reach our ears after they have been bounced off multiple surfaces and travelled multiple pathways longer than that of the DS, hence arriving many milliseconds later than the DS, with a smearing effect.

ER (early reflections) represent a group of R sound beams that arrive earlier than the bulk of the R beams, because they have reflected off only perhaps one or two closer surfaces and travelled a pathway that is not much longer than the DS path.

One further term needs attention. "CD" (critical distance) is an important concept. It is the point at which the sum of all the reflected sounds is equal in level to the direct sound from a sound source. This is important because at distances greater than CD sound signals such as speech deteriorate and become unintelligible.

Unlike light, sound travels relatively slowly. Normally we don't think about this, but it is important. We can watch cricket on TV, but if we attend the match, we will see the batsman strike the ball and commence to run before we hear that sound of leather on willow. For a rough calculation, we can use 330 meters per second as the speed sound will travel through air (give or take depending on temperature; try using the number 314 (NTP) for a quick calculation).

Some simple sound pathways

So what does all this mean?

Our brain is clever at processing auditory signals; clever enough to recognise that a section of a sound signal, even though it arrives many milliseconds later than the D signal, is that same signal, just delayed a bit. Further, R and ER can tell us much about our surrounds. Surprisingly, some blind people can "see" in the same way as bats, who "echolocate", by emitting clicks and listening for the ER and R signals.

Mostly, sound reaching a target (ears, meter, mic) is a mix of direct and reflected waves. Many objects near and far play a part in the totality of sound reaching our ears. Sound environments can be enormously varied; open ground, forest, beside a structure such as building or a cliff, in an alleyway (who hasn't hollered for an echo in an alleyway?), in an arena, or in a room, big or small, and of course our bedroom studio.

The extremes are special rooms developed for research; the anechoic chamber, and the reverb chamber. Both are enclosed boxes, maybe big enough to fit a modest house. Both are constructed from massively thick walls of concrete, and sit on isolating suspensions. The anechoic chamber is lined with much totally absorptive material, whilst the reverb chamber has bare concrete walls.

In the former people find the sound of speech rather disturbing at first; because there is absolutely no reflected addition to the direct signal, whilst in the latter, it becomes very hard to converse as the sound is swamped with its own reflections which can build up over many seconds.

Let's take a less extreme case; an observer standing at a distance from a speaker on the main runway at a big airport. Nearly all the sound is direct (assuming no incoming or outgoing flights and no wind). There is really only one ER, and no R. The ER is from the sound that strikes the concrete runway at the midpoint (between speaker and person). The flat grassed fields to either side will offer only miniscule reflections.

If we are standing at two metres distance and the speaker and observer are two metres tall, the ER will be not quite two milliseconds delayed, but will be about 3 dB quieter. The golden eared people may be able to hear this as an effect, though most will hear the delay as augmenting the sound. Doing some fancy math it can be shown that as the distance increases, this ER becomes less and less noticeable. Indeed the delay time of the ER will get shorter and the ratio of ER to DS diminish (exponentially). As D increases, the sound is probably best described as getting thinner, and quieter. Without getting complicated, here we are looking at properties that Andy described as forward in the mix, or back in the mix.

In reality, as the sound bounces around in various spaces, SBs are meeting and inter-reacting to undergo many of the processes we might call up in our DAWs. The shape of the space, adjoining spaces, obstacles, and furnishings all modify the resultant combination of soundwaves reaching ears or devices. As people discovered many centuries ago, an optimal amount of reverberance added a quality of richness to a musical performance, and consequently, great opera halls were designed and built.

We can start listening closely to live every day sounds (i.e. spend some time without ear buds in). Listen to those sounds close, and those further away, as well as various live musical performances – concerts, clubs, pub bands, buskers etc. Attempt to appreciate how sounds is shaped. For instance, move to a different spot and listen again. Look around to see what may be influencing what you hear.

As our understanding grows, we can look more selectively at our tools in our studios to see what will best enhance the way our recordings will turn out; blending realism and excitement, using the properties of sounds.
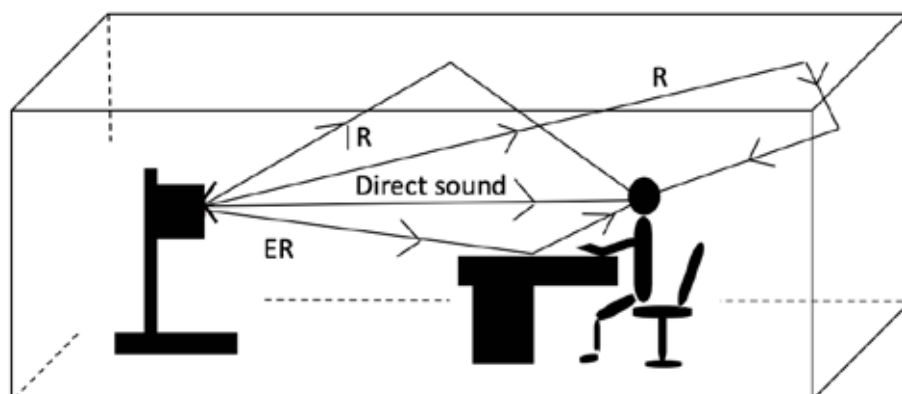
TECH TIPS

Here is this month's collection of random tech tips to make your life just a bit easier from us, and you, our fine readers!

Professional Approach

Julius spotted a recent post from Matthew Cutlass in the Live Sound Engineers group on Facebook on how he deals with punters at work.

"I'm there to do a job so I make sure I am dressed appropriately. It stops hassles with door people, security, venue staff and most importantly punters.

This means a collared shirt, work pants, boots and most importantly my tool pouch on my hip."

A nice professional approach!

Rain Protection

Also on Facebook, Matt Hinde has a great tip.

"Garbage bags: this year I learned to carry a roll of wheelie bin liners down to little ones. When it rains, it's easy to quickly put speakers, monitors, desk, mics, DIs and lights in a bag and tie off the end. They're water proof and cheap - better than tarps. Good for leaving gear set up overnight on stages with dew etc."

Laptop Hard Disk Clone

What if your mission critical laptop suffers a hard disk failure at the gig?

If you have cloned the drive, no problem! A clone is a bit-for-bit copy of your hard drive. Get the laptop set up perfectly and then clone the drive using something like Acronis True Image.

That way, should your primary drive fail, it is simply a case of dropping in your cloned copy and you are back up and running. Nothing to install or reconfigure because you already did that.

Balance your phases

Wayne Bateup from the Sound Workshop reminds us to balance the power loads between phases when running off a three-phase distribution board.

Most boards have at least 12 outputs spread across the 3 phases. Unless you are still running incandescent lights, power amps are usually the biggest load so they need to be spread across as evenly possible, followed by everything else. Distribution boards with built-in metering are invaluable for monitoring this.

Label, label, and then label

Whilst talking of distribution boards, make sure every plug is properly labelled so they can be quickly identified. It speeds up fault finding when a failure occurs. On Entech, Julius has a unique number on both ends of every single power cable. If something is not working, he can quickly find the other end of the cable.

Stand for Vision Foldback Monitor

Martin Bailey from EAVS points out that a great way to support an LCD monitor is to use a guitar stand!

Have you got any tech tips worthy of publication? Send them to techtips@simonbyrne.com

Dan Evans is a renowned Lighting Designer based in Melbourne Australia. For over 20 years, he has designed a wide variety of shows and events in Australia and around the world. He specialises in high impact technical production and creative portrayal of emotion through the medium of light, visual imagery and special effects. He has designed shows for audiences around the globe in theatre, film and TV, concerts, and corporate events.

ACME XA-1000 BSWF

by Dan Evans, Lighting Director, NW Group

I'm currently touring 'Madiba the Musical' around Australia, visiting the Melbourne Comedy Theatre, Sydney State Theatre, Canberra Theatre Centre, Crown Perth, Adelaide Entertainment Centre, and Warrnambool Lighthouse Theatre. We're using seven XA-1000s in the rig and carrying one spare. Five are hung on the advance FOH truss, and they handle all front wash duties and all lighting of faces. I have two hung over the stage for break-ups on the cyc, and for pick-ups as a rear spot.

At NW Group, we are looking to LED solutions to address power consumption, in line with the company's Green Energy policies. We have undertaken a lot of research in finding new LED fixtures for our inventory, including bringing a wide selection into the NW Group factory for shootouts. I had been researching the Acme brand for a while, but there were a few technical issues that I had with their spots that made us hesitant to purchase. Through discussions with Acme and their distributor ULA Group, they addressed the issues I raised. When we next brought the Acme products in for demo I was quite impressed.

We needed a fixture for 'Madiba' that had nice colour rendering, high output, and a wide zoom. The XA-1000 BSWF is an extremely bright fixture; I could light the whole stage with just one, they're that bright. I've been extremely impressed with their performance on this show so far. They've been very versatile, and I've got them working very hard through the whole show.

I turn the XA-1000s on when I come in to the theatre every day, and they go straight to their preset without fail. I haven't had to update them once. I have cues with picture frames that fly in and the XA-1000s have a tight focus to their edge – that cue hasn't been updated once either, which is also testament to the fly crew, who've been amazing!

CRI, Colour, Dimming

I use the CRI filter a lot, and the colour rendering is great. The XA-1000's CRI is over 90, which is perfect for TV, theatre, and film. 'Madiba' has a diverse cast, which means there are a wide range of skin tones I need to light, and the XA-1000 has enabled me to do that well. I have been able to bring out different shades in both costumes and skin, allowing me to create a lot of really nice looks.

I haven't been using the prism, but I have used the frost filter, which I've found useful and smooth. The dimming curve is also very smooth, and when I fade my dimmers along with my movers, everything is exactly synchronised.

Framing

I use the framing extensively through the show, and it hasn't skipped a beat. There is heavy framing, focusing, and zooming throughout the show, and the XA1000s work quickly, getting to their spot within milliseconds.

I have found that on some fixtures, when you have the frames in with a tight zoom, and you bring the colour flags in, it creates a slightly different coloured spot in the centre of the beam. I haven't noticed this issue at all in the XA1000s. It's a uniform colour across the whole beam.

Gobos

As 'Madiba' is about the life of Nelson Mandela, the show spends a lot of time covering the periods he was imprisoned. One of the key things I needed in a fixture on this show was the 'jail' gobo. The XA-1000 has one, and when the cyc isn't being projected on, the two XA1000s on stage hit it with break-up gobos and the jail gobo, which has worked phenomenally well.

There's one rotating and one static gobo wheel and I found the included gobos useful. I have talked to Acme and mentioned that I'd be happy to lose one gobo wheel if they'd replace it with an animation wheel, as being able to do moving textures with frames would be really nice. There's some talk of a later model, so hats off to Acme for listening and changing designs based on customer's needs and feedback.

Zoom

The zoom is fantastic, and I can get quite close to covering the whole stage at its widest. The brightness of the output at full wide is phenomenal; they're not far off high-powered arc lamps.

Physical

The clamps on the XA-1000s are quite unique. They're mounted on top and fold down at right angles for storage in the case. The clamps are always on, so you just open the lid of the road case, put the clamps up, and hang them, though you can remove them if you wish. At just under 45kg, they're a comfortable lift for two people. As we rig five on the FOH truss, we have to hang them over seats, which is an awkward area to get a fixture into, but we've had no problems.

We tour one XA-1000 per case, and the cases are easily manageable. They're quite small and you can get at least five across the width of the truck, with the plus that you can flip

Acme XA-1000 BSWF – The Specs

Light Source: 1x1000W LED

Colour Temperature: 6500K

Beam Angle: 5°~50°

Luminous Flux: 35000lm

Control

DMX Channel: 25/29/34 channels

Control Mode: DMX512

Firmware Upgrade: Update via DMX link

Pan/Tilt

Pan/Tilt: 540°/ 270°

Pan/Tilt Resolution: 16 bit

Fixation: Pan/Tilt lock

Construction

Display: LCD display

Battery backup for user operation without connecting to the mains

Data In/Out: 3-pin and 5-pin XLR

Power In/Out: PowerCon in/out

Protection Rating: IP20

Features

High CRI mode Ra>90

High output mode Ra>70

Switch to high output, high CRI mode with high CRI filter

Linear CMY colour mixing + Linear CTO

colour correction

Colour Wheel: 1 colour wheel with 5 colours plus open

Gobo Wheel: 1 static gobo wheel with 8 gobos plus open

1 rotating gobo wheel with 6 gobos plus open, easy to replace

Gobo's outside diameter: 37.3mm

Gobo's image diameter: 25mm

4 facet prism rotating in both directions

2 new material frost filters (mild & moderate), effectively improve the brightness under frost mode

Motorized linear iris

4 fast and smooth framing shutters, each shutter blade position and angle can be controlled individually;

Each shutter blade can block out light completely, the framing module can be rotated at ± 45°

Electrical and Physical

Power Voltage: AC 100~240V, 50/60Hz

Power Consumption: 1300W

Dimensions: 465x352x884mm

Weight: 44.6kg

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them and stack them any way you need to.

As this is theatre, the noise of fixtures can be an issue, but we can't hear them. The XA-1000s have a lower power/noise mode, but I haven't had to use it. They're also quiet when they move.

Improvements

One of the improvements I'd like to see is the reduction of the large space between the gobo wheel and the framing shutters. At NW Group, we do a lot of corporate gigs, and one of the things we need to do is frame screens while putting a bit of texture around them.

You can do it with the XA-1000s, and there's a few cues in 'Madiba' where I frame gobos, but I have to do it at a wider zoom, and I can't get an edge quite as hard as I'd like. However, you can't have everything, and as it is, the XA-1000 already ticks all the boxes.

Conclusion

On the East Coast leg of this tour, the XA-1000s haven't skipped a beat – how they react to the long truck journey through Adelaide to Perth and back will be the test. That being said, ULA Group's support is great, and I know if anything happens, they're there for us.

The XA-1000 BSWF is a solid, bright fixture that has done a great job. I've been impressed by every aspect of its features as a mover, and it all works as you need it to. For the price point it's really good value. I highly recommend them.

Brand: Acme

Model: XA-1000 BSWF

Product Info: www.acme.com.cn

Australia: www.ulagroup.com

New Zealand: www.ulagroup.com

AYRTON GHIBLI

by Ben Hunt, Head of Lighting, Empire Theatre Toowoomba

Ben has been involved in the technical production world for over a decade. Preceding his appointment at The Empire Theatre, Ben worked as a freelance Lighting Designer for the Empire Theatre and other venues in SE Queensland, and has toured nationally. His work has seen him light an array of entertainment genres including rock & roll, theatre, musicals, film and television, dance works and corporate events.

The Empire Theatre in Toowoomba, Queensland, is a heritage listed building that was rebuilt in 1997, and expanded to include the new Armitage Centre in 2014. The Empire Theatre itself is a 1,600 seat proscenium arch theatre, while the Armitage Centre is a 350 seat black box with retractable seating. The complex also includes the renovated Empire Church Theatre, which is a church that was converted to a function venue, and a 100 seat studio space behind the main theatre. Like most regional venues, we service a broad range of entertainment, community, and corporate clients.

Just over six months ago, the time had come to replace our existing profile fixtures. We were looking for something that offered superior light quality, and more output than we already had. It had to be versatile; we wanted a unit we could light a theatre piece with one day and do a corporate gig with the next. It also needed to be tour-friendly so we could offer it to touring bands to supplement their rig. It needed to be small enough to fit in a fly space, as we are a fly tower venue. In short, we wanted something that could be used to good effect in every field we work in.

We already had some LED moving fixtures, so it made sense to continue with the transition to LED. Framing shutters were also important for us to have. We evaluated most LED options and did on-site comparisons. The Ayrton Ghibli's stood out because of their versatility, broad feature set, and flat-field optics.

Beam

Some fixtures have beams that have a hot centre and fade off at edge. The Ghibli's is like a pancake – bright and flat, which is especially important in a framing shutter fixture, and means that gobo projections are crisp all the way to the edge of the beam. The dimmer curve is also nice and linear all the way in and back out. Ayrton make a point of this in their marketing, and it really does what it says on the piece of paper.

Framing

The framing shutter system is very fast and accurate. They are full curtain and can carry the blade all the way through the optical path, meaning you can do a full curtain wipe with each blade. That allows for a lot of different options from a lighting design point of view, and you can open a beam up in a totally different way. In terms of their accuracy, we've used them as key lights on lecterns, and on pieces of scenery with a 40-metre throw, and they've been bang on every time. There's nothing worse than going into a preset and finding out that the framing job you spent all that time on is not reproduced accurately.

Zoom

The zoom goes out to 56 degrees wide, and the front lens is a massive 137mm, which means you can get really nice aerial effects. It has enough grunt to dial in a gobo, go full wide, and still get nice beams in the air. At the other end of the zoom range, 7 degrees is great when you're throwing longer distances or need some punchy beams.

Gobos

The Ghibli comes with a pretty broad range of gobos on board. The first wheel is predominantly for aerial effects, and is a typical rock'n'roll gobo suite. The second wheel has a lot of break-up gobos that when coupled with framing and/or a light frost can help create texture and scenic elements, or build a space for a corporate event. I think Ayrton were smart with their selection.

Prism and Frost

The prism is great; you can use it full wide, which gives you a massive amount of light out front, but you can still throw in small dots and get nice aerial effects in haze. There's two frost filters – light and heavy. Light is great for dropping in front of sharp gobos, or over framing to soften. Heavy frost turns the Ghibli into a tight wash unit. The versatility of being able to turn the unit into a wash unit and have

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Ayrton Ghibli– The Specs

Optics

Beam aperture: 7° to 56°

137 mm frontal lens

Light Source

36,000 lumens 8000 K white light engine

Total luminaire output: up to 23,000 lumens

Colour temperature output: 6500 K

CRI: greater than 70

Movement

Moving-head range: 540° (pan), 270° (tilt)

Colours

CMY colour mixing

Variable CTO colour temperature correction

Fixed colour wheel with seven complementary colours and High CRI filter

Gobos

Indexable rotating gobo wheels with 7 high-precision glass gobos, plus open position

Fixed gobo wheel with 8 high-precision glass gobos, plus open position

Gobo diameter: 30.0 mm

Image diameter: 22.0 mm

Framing system

4 individually positionable shutter blades on a 100% surface area in all positions

Rotation of the framing system module: +/- 45°

Iris diaphragm

Iris range: 15% to 100% open

Frost

2 frost filters: one light, one heavy

Effects

Graphic animation effect-wheel with continuous rotation in both directions

5-facet circular rotating and indexable prism

Sparkle effect: dynamic animation effect with speed and fade adjustment

Dimmer / Strobe

Electronic dimmer, allowing light adjustment from 0 to 100% without colour variation

Strobe effect, with speed adjustment from 1 to 25 flashes per second

Size

Product: 468 x 734 x 280 mm (l x h x d)

Flight-case foam: 655 x 590 x 555 mm (l x h x d)

Weight: 35.6 KG

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beam control is also advantageous.

Colour

The Ghibli has a CMY mixing system, variable CTO filter, and a fixed colour wheel. The colour output is rich and vibrant. Ayrton have put a high CRI filter in the first colour wheel slot, which is a clever move. When you put it in, it brings the fixture's CRI up to 90 which is important for camera and skin tones, allowing you to have correct, natural colour representation of objects that are being lit. Often with some units in the same category, you take a permanent cut in overall output to get better CRI, but the Ghibli gives you the flexibility to take the output cut when you need it, as it's not always necessary.

Connectivity

In-house we run control from an MA Lighting grandMA2, and most of the time the Ghiblis are in a wired DMX stream. They are also fitted with LumenRadio wireless DMX, which we've found really useful for positioning in difficult spots where it's hard to get data to. On a couple of events, we've used them specifically because of the wireless DMX connectivity, as they can then send on the data to other devices through their wired DMX ports. We've found the LumenRadio connectivity to be robust and easy to use.

Physical

Compared to some fixtures with similar specs, the Ghibli is smaller and lighter. They're a comfortable two person lift, and we can get them into multiple locations with no problems, including our bridges and onto our balcony rail. It's a sleek looking unit, and not too big or bulky, so they look the part if they are sitting around the room at a corporate gig. In terms of noise, they are at an acceptable level for an audience member sitting below them when they're rigged on the balcony rail. They do have a 'Theatre/Studio' low noise mode if you want to control unit noise down further. There is a little movement noise, but it is comparable to other units in the category.
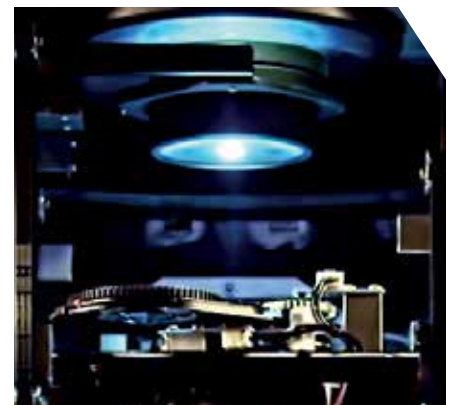
Brand: Ayrton

Model: Ghibli

Product Info: ayrton.eu

Australia: showtech.com.au

New Zealand: showtech.com.au/homenz/

Launched in 2017 by Alex Woodmansey and Alastair Swanson, Light Innovations was created because of our love of building things for theatre, and knowledge of electronics and LED lighting. Specialising in custom electronics and lighting solutions, we work closely with our clients to turn ideas into high quality products, focusing not only on highly versatile functionality but also slick, professional exterior finishes, guaranteeing beautiful, reusable, engineered solutions for the entertainment industry.

DMXKING LEDMX4 PRO

by Alistair Swanson & Alex Woodmansey, Co-Directors, Light Innovations

In our work with Light Innovations, having reliable, feature-rich digital LED pixel controllers has always been vital to our projects, therefore we have used and evaluated a large majority of the digital LED controllers on the market.

For this personal project we needed something truly special; the ability to record multiple DMX universes of complex LED sequences on a compact, wearable controller for an LED costume, as it's not exactly practical to carry a GrandMA2 and an NPU, or a specialised media server around on your back! At the core of the project was two DMXKing LeDMX4 PRO pixel controllers, and their ability to record any streaming ACN or Art-Net source made the project possible.

The annual Western Australian Nightclub Association's Nocturnal Ball was coming up. It's where hospitality WA industry people get together and dress up. We wanted to find a personal project that pushed our limits of what we could build and that would also be

amazing to wear at the event. We're a big fan of Canadian DJ Deadmau5 and love the programmable LED head that he built to wear for his performances, so we decided to make a similar design inspired by his costume, mainly just for fun. It was an adventure, as there were no blueprints or specs. Even the size of the Perspex ball it's built in had to be approximated. But in the end the results speak for themselves, and it was a great project to build on so many fronts.

The LeDMX4 PRO is amazing in the way it has been thought out. It drives so many varieties of pixels, records to an SD card, and has well-built management software that runs on Mac or Windows, while still be a cost effective and compact device.

We chose the 5V version of the LeDMX4 PRO for the Deadmau5 project (it also comes in 12V and 24V) because we were driving WS2812 144LED/m density LED strips, so it made sense to run on the same voltage as the strip. The four pluggable headers allowed for quick disconnect and removal of the LeDMX4 PROs to inspect them and make changes to the program via the Ethernet connection. The screw connectors are extremely handy for testing and you don't have to solder anything to the board.

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Alex Woodmansey & Alistair Swanson

It was very easy to get working. We connected the power and the LED strip, went into the manager software via Ethernet, set the pixel type to WS2812, told it how many pixels per port it was running, and it started working immediately from sACN out of our console. The controller records sACN or ArtNet straight to the SD card for you, so you can use whatever software you're used to for content. We were able to create a mask in a drawing program and have a face appear on the front of the ball, and then create animations within that. We attached a 'light sabre' to the costume that also ran off an LeDMX4 PRO, the chest piece, and kneepads, all running pixel strips via the two LeDMX4 PROs tied together for playback. This meant that the whole costume could be animated together, stepping through recorded shows automatically.

Through the configuration file on the SD card, you can write simple scripts to loop multiple recorded shows, starting automatically upon boot up, or when the unit receives a DMX trigger channel or contact closure. Within a few seconds of powering up, the LeDMX4 PROs have booted up and are automatically playing back. We were able to put a battery pack on this costume and it was effectively completely wireless.

The LeDMX4 PRO opens up so many opportunities for driving nearly any type of pixel that you can find. We have used several of them on large animated LED 'neon' signs made for schools and festivals. Clients love the recording functionality, as it can be a cost effective solution to avoid long-term lighting console hire, and having the LeDMX4 PRO run in DMX triggered stand-alone mode frees up desk channels for use in theatre.

We'd love to see a larger version that supports more pixel outputs for bigger builds in a robust case, but there is always the discussions about single point failures in large projects. Because the LeDMX4 PRO allows you to network multiple boards and playback a show, it means you don't have a single point of failure. If any board does fail, you get a new one, grab the SD card from the old one, and you're back up and running.

The LeDMX4 PRO is a strong product that continues to receive improvements from DMXKing, adding support for more types of LEDs, and other unique, great features. They really love improving their products and we look forward to any of their future releases. For now, the LeDMX4 PRO earns itself a valuable spot in Light Innovation's toolbox.

Brand: DMXKing

Model: LeDMX4 PRO

Product Info: dmxking.com

Australia www.lexair.com.au

New Zealand: dmxking.com

DMXKing LeDMX4 PRO – The Specs

The LeDMX4 Pro is an OEM Board for direct sACN/E1.31 and Art-Net to RGB/RGBW pixel strip/array control.

Main Features

Static IP or DHCP network addressing.

DIN rail mount possible with DIN clip accessory.

4 Independent outputs each with 5A supply capability.

1x DMX512 IN/OUT port.

Directly drives WS2811, WS2812, WS2812B, WS2813, UCS1903, UCS2912, UCS8903, UCS8904, PL9823, TM1934, APA101, SK9822, APA102, APA104, APA106, INK1002, INK1003, SM16703, SK6812, WS2801, LPD6803, LPD8806 and many more compatible LED strips.

Selectable clock/data rate to suit long cables or fast output.

Up to 680 RGB pixels or 512 RGBW pixels per output spanning 4 DMX universes (2720 RGB pixels / 16 universes per board).

Up to 340 16bit RGB pixels or 256 16bit RGBW pixels per output.

Automatic RGB / RGBW order correction and additional pixel re-mapping features.

Per pixel intensity control for APA102/SK9822 utilizing the 5bit current pre-regulator.

Master Level control independent of incoming universe streams.

Flexible Full Mapping option for outputs permitting any start address and zig-zag

corrections for RGB pixels.

Null pixel support for longer runs to first active pixel.

Art-Net broadcast, Art-Net II, 3 & 4 unicast, sACN/E1.31 Multicast and sACN Unicast support.

Universe Sync Art-Net, sACN and Madrix Post Sync.

Recording and playback to microSD card (not included). See eDMX PRO Record / Playback manual.

Standalone show playback without computer or network connection. External trigger input.

GIVE ME A CAR AMONG THE GUMTREES

by Duncan Fry

'Just stick it on Gumtree' is a common piece of advice for selling things these days, replacing eBay for items that are lower priced and ideal for a quick sale. I've bought quite a few musical items on there - pre-loved guitars, amps, older pro-audio bits and pieces, and more. It's not an auction site, but you can negotiate directly with sellers over the phone or by text until you reach a price that you both can live with. It's also a selling site with no fees, so it appeals to people who want to keep all the money they receive from selling for themselves. Like me!

I'd never actually used it for selling something, though, so when I noticed it had a thriving Cars for Sale section I decided to advertise my little Peugeot 206cc (stands for Coupe Convertible not Cubic Centimetres) on there. It's the one with the steel roof that folds into the boot for open air summer cruising. I called it 'the poor man's Mercedes SLK' although It probably cost less than a Mercedes boot lid badge - 'That's right,' said a friend who had an actual SLK!

It was a great zippy little runabout and lots of fun to drive, but after three or four years I had to admit it was a little bit small for me. Just enough room inside for two people and the dog, it didn't leave much space for the day-to-day necessities of life, like food, shopping, guitar and amp for band rehearsals, or even a spare wheel. The can of tyre puncture goo velcro'd to the side wall of the boot never filled me with much confidence so I eventually bought a spare wheel from a wrecker, which meant there was even less space in the car!

Hmmm. Sell it for something? Maybe buy another guitar with the money? ('Pig's arse!' I heard a little voice saying from across the room)

Learning the value of second hand cars the hard way

About two years ago I was driving it to work one morning and got about 100 metres down the road when the engine started clattering and a big red 'STOP Very Low oil pressure' sign flashed up on the dashboard. I slowly idled the car to work and parked it out the front of our local mechanic Honest Dave, the customer's friend. Dave saw me and came out with his usual greeting:

'What's wrong with this piece of tish now?' he asked. I showed him the sign on the dash.

'Mmmm that's not good, he said. It's f**ked!'

'Hey, don't get technical with me,' I replied. The oil pump was broken.

Normally you'd pull the sump off the bottom of the engine and replace the oil pump, but not this one. All the 206cc's that came to Australia were fitted with the two litre all-alloy 'big block' engine that had the sump as an integral part of the engine block, with all the ancillary engine parts bolted directly to it. Pulling the sump off was not an option. It was engine out or nothing.

Looking around on Gumtree I found a new engine with only 74K on the clock from a guy the other side of Melbourne in Sunshine. Only a 70k drive there and back. Why does no-one who lives near to you ever sell anything? For $1,600 he sold me the engine, took the old one out and put the new one in. I couldn't really complain about that! Two years later it was still running like clockwork.

So I put together an ad, got my GF to take some pictures of the car with the roof going up and down, uploaded it to the site, and waited for eager customers to call.

I was selling the car without a roadworthy certificate (RWC), as I figured that since I was only asking $1,000 for the car people could organise one for themselves. Getting one for an older car (2002) can be an expensive, open-ended process if the tester is particularly nit-picky. Despite pointing this out at the top of the ad, the first thing people asked was 'Does it come with an RWC?'

Eventually I got tired of explaining this and just said 'No - didn't you read the ad?'

'Uh?'

'It's written at the top.'

'Uh? Yeah I'm calling about the car'

I'm not joking, that's a transcript of most of the phone calls.

Then there would be the late night texts saying much the same thing, but at 10pm, 12pm, even 1am in the morning! Obviously putting an ad on Gumtree is inviting every insomniac with nothing to do to contact you anytime day or night.

When I first bought the car, from a pregnant couple that needed something bigger, it was the first 'modern' car that I had owned, one with a little screen with information about radio channel, date, time, inside leg measurement and other vital stuff. One cold morning I was driving off to work when I noticed a little sign in the corner of this screen that said go.

Go where, I wondered?

I pulled over to the kerb and flicked through the owner's manual, but couldn't find any info on this anywhere. After all, I know it's a quirky little French car, but in that case – shouldn't it say allez?

Did you ever wish there was a quick way to find solutions for WHS questions?

FOUND IT!

Australian Entertainment Safety Resource Guide

WHAT IS IT?

A website set-up with chapters, each addressing a specific area in the entertainment industry.

Each chapter lists all the relevant documents such as legislation, Code of Practice, Australian and International Standards, etc.

It then explains the terminology used and high-lights the important sections of the documents.

It will not tell you how to do your job, it will show you what you need to know about the safety requirements so that you can determine the best way to do the job in your workplace.

WHY A WEBSITE?

The website allows you to have the information with you wherever you are. In the office you look things up on your computer and on-site you can still access the information on your phone or tablet.

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