

CX

LIGHTING | AUDIO | VIDEO | STAGING | INTEGRATION

INTEGRATE 2019

The tech, the problems with the culture, and the positives

THE PROJECTION ISSUE

- > WHITE NIGHT REIMAGINED
- > ILLUMINART – TRAVELLING LIGHT
- > BRISBANE’S RIVER OF LIGHT
- > COLOUR QUALITY IN PROJECTION
- > CLIPPED MUSIC VIDEO FESTIVAL
- > THE BEST SURFACES FOR BLENDING

NEWS

- Free counselling for crew
- Spin Off Festival
- TAG’s new Melbourne pad
- Labour hire laws affect production
- Safer trucking

REGULARS

- Andy Stewart
- Jenny Barrett
- John O’Brien
- Duncan Fry

ROADSKILLS

- Fleetwood Mac
- Hilltop Hoods

ROAD TEST

- Shure Axient Digital
- Luminex GigaCore and LumiNode
- Omega Tech Stage Boxes

REIMAGINE WIRELESS LISTENING



FURTHER INFORMATION ON INSIDE COVER





IT'S ALL ABOUT WIRELESS SOLUTIONS

REIMAGINE WIRELESS LISTENING

Listen EVERYWHERE is the premier streaming Wi-Fi solution for restaurants and hospitality, houses of worship, universities and many other venues.

Listen EVERYWHERE provides high-quality audio directly to users' smartphones via a free app.

IT'S SIMPLE



Download the free Listen EVERYWHERE app



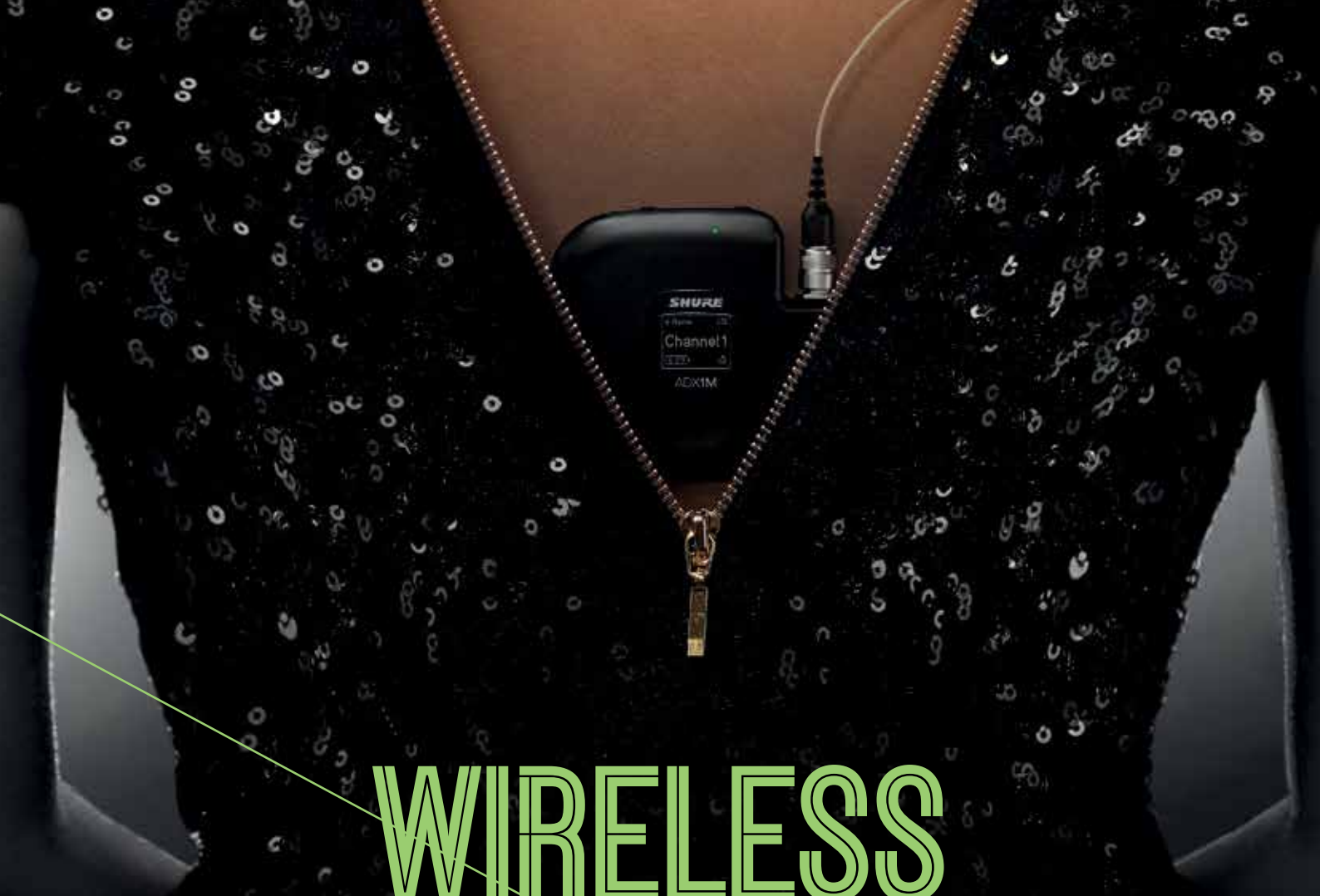
Connect to the venue's wireless network



Choose your desired channel



LISTEN
TECHNOLOGIES



WIRELESS

THAT WEARS WELL.

The Axient[®] Digital micro-bodypack.



Axient Digital defies limitations for both RF and audio excellence. With an industry-leading 2 ms of latency*, linear transient response, and wide dynamic range, nothing gets in the way of true, pure sound.

[Learn more at shure.com/axientdigital](http://shure.com/axientdigital)

*From transducer to analog output, in standard transmission mode.

© 2018 Shure Incorporated



SHURE



Distributed by



www.jands.com.au

CONTENTS

NEWS

| | |
|--|----|
| Support Act Wellbeing Hotline – free counselling for crew | 6 |
| Spin Off Festival 2019 Novatech Brings It All for Splendour Offshoot | 7 |
| Easey As: TAG Opens in Melbourne | 8 |
| Labour Hire Licenses – AV firms may breach new laws | 8 |
| Robe globally launches new ESPRITE LED in Melbourne | 10 |
| Safer Trucking - Driver Monitoring Proves Itself at ATS | 10 |
| MotoGP appoints Audio-Technica | 11 |
| Clear-Com Unveils Freespeak Edge | 12 |
| Aveo Systems Appoints Jands as Distributor | 12 |
| NEW GEAR | 14 |

INTEGRATE 2019

| | |
|---|----|
| Tech round-up from the show floor by Jason Allen | 18 |
| How was Integrate? Disappointing and Gross by Landell Archer | 25 |
| Integrating the Outsider by Dr Catherine Wolf | 26 |

THE PROJECTION ISSUE

| | |
|--|----|
| The Electric Canvas - White Night Reimagined by Jason Allen | 28 |
| Colour Quality in Projection by Simon Byrne | 33 |
| River of Light by Cat Strom | 35 |
| Illuminart - Travelling Light by Cat Strom | 37 |
| Clipped Music Video Festival presented by Digital Projection | 40 |
| The perfect projection surface for blending by Norbert Schmiedeberg | 42 |

REGULARS

| | |
|---|----|
| Listen Here: Immersive Listening by Andy Stewart | 47 |
| Drones in Drag by Jenny Barrett | 50 |
| Road Crew - what to do with your skills? by John O'Brien | 57 |
| Cry havoc and let slip the junkyard dogs by Duncan Fry | 66 |

ROAD TEST

| | |
|---|----|
| Shure Axient Digital by Marcello Lo Ricco | 60 |
| Luminex GigaCore and LumiNode by Ash Neuendorf | 62 |
| Omega Tech Stage Boxes by Simon Byrne | 64 |

ROADSKILLS

| | |
|-----------------------------------|----|
| Fleetwood Mac by Cat Strom | 44 |
| Hilltop Hoods by Cat Strom | 53 |

* Cover Photo – The Doofwagon, Mad Max: Fury Road, White Night Reimagined. Photo by Jason Allen.

Published by Juliusmedia Group Pty Ltd, under licence from Destination Media Pty Ltd.

Locked Bag 30, Epping NSW 1710 Australia

Phone: +61 2 408 498 180

Email: mail@juliusmedia.com

Editor: Jason Allen

Publisher: Julius Grafton

Business development and sales: Steve James

Layout: mark wood design – Mark Underwood & Alisha Hill

All contents COPYRIGHT CX Network Pty Ltd 2019.

Nothing herein to be reproduced in any format without express written consent.



JBL SRX800

PORTABLE SOUND DEFINED



facebook.com/jblprofessionalaustralia



[@jbl_professional_au](https://instagram.com/@jbl_professional_au)



Proudly distributed Australia wide by CMI Audio. Contact: harmanpro@cmi.com.au | (03) 9315 2244

by **HARMAN**

Crew get free counselling and psychology

Support Act detail extra services

by Julius Grafton

Production crew from music, AV and theatre suffer a mortality rate that is a lot higher than the Australian societal average. Proof came when the ARCA reunion events several years ago resulted in a list of former crew from the 70s and 80s that grew to around 400 names – with the sobering realisation that over 130 were indeed no more.

Since then the suicides and early deaths keep rolling, and research by Entertainment Assist proves that a career backstage can produce very negative health outcomes – even if you are lucky enough to work full-time and have things like worker's compensation and superannuation that many never had.

Last year Support Act established a Wellbeing Help Line and recently they advised that crew are not using it much, as the research suggests they should. This is part of the reasoning behind the Rody4roadies events that raised funds and awareness for crew welfare last April.

The Wellbeing Help Line is a free counselling service run by trained clinicians and psychologists attached to a service called AccessEAP. It's staffed 24/7 and provides immediate support that is available for employees of large organisations like firefighters or paramedics – places where

immediate support is needed after trauma.

Clive Miller, Support Act CEO, says the perception of the Wellbeing Help Line as a last resort emergency service is wrong – he says it is most commonly a counselling service for any of the many things that bring anxiety and depression to crew. Those could be work-life balance, exhaustion, stress, relationships, money, drug or alcohol reliance, and workplace issues.

It's a 'circuit breaker of the mind' and a service that most people can't obtain, but all crew can – anyone who has worked in Australian music or the performing arts. It is not tested against where you work or who you work for, it is simply there for you or your mates. You can still access it even if you have left the industry.

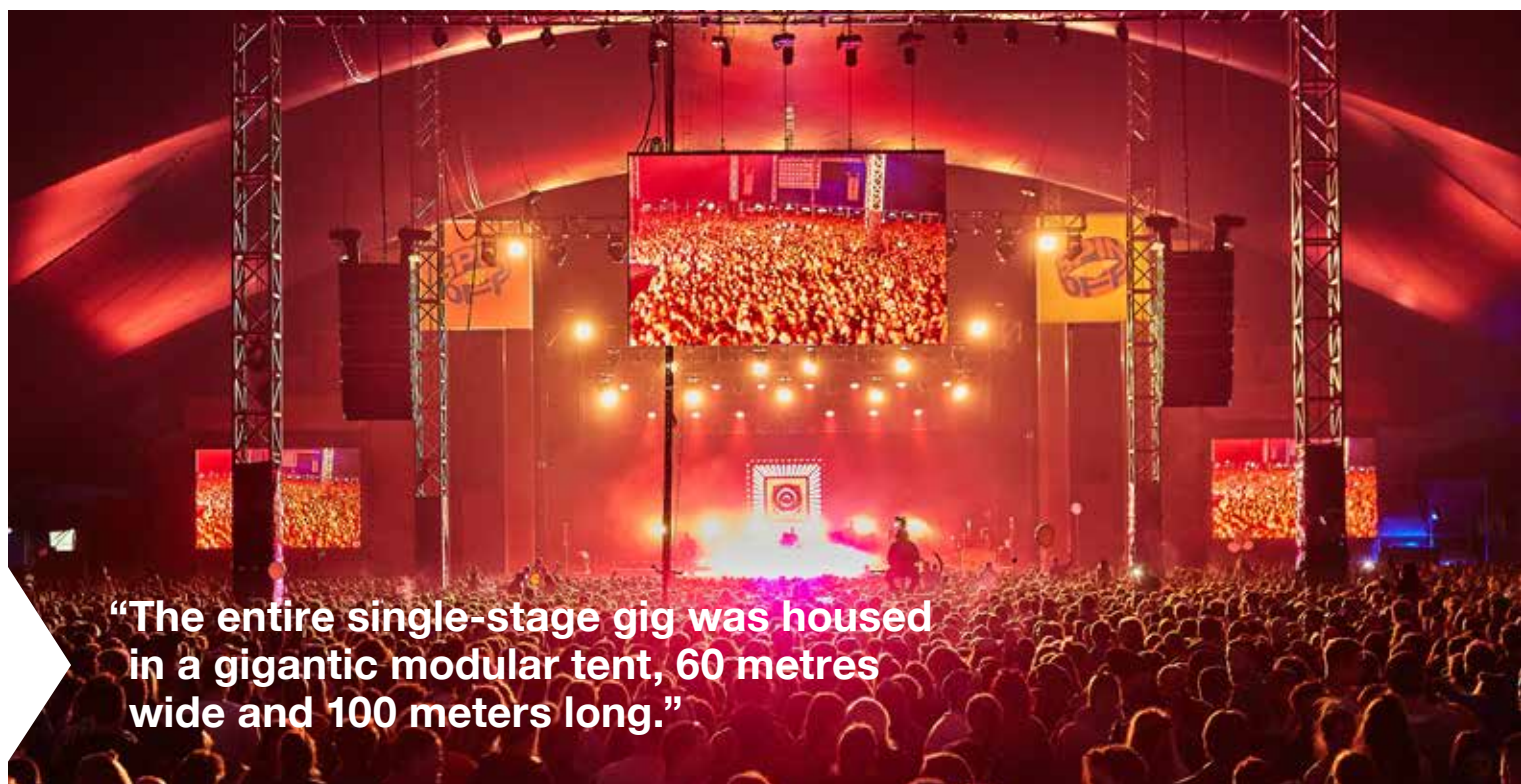
Clive says backstage crew are an isolated cohort who are usually reluctant to reach out for help. This includes financial support, which is available as part of Support Act's Crisis Relief service, for any working crew with five year's experience. The financial help covers anything reasonable – rent, crisis accommodation, medical bills, car expenses, legal bills and a whole lot more. It can also fund referral to rehab which some of us really do need.



Support Act dished out more than \$350k last year, (with a maximum of \$10k per grant). These grants are provided confidentially – the only person who knows your name is the case worker at Support Act.

If you are comfortable establishing a more public fundraiser, you or a friend can set up a 'Help a Mate' appeal. It's the Support Act version of a Go Fund Me appeal. It is a proven way to raise funds direct from people who know you, or know of you, or who want to help and also obtain a tax deduction for their donation.

The Wellbeing Help Line number is 1800 959 500; and the number for Crisis Relief is 1300 731 303. Share them out.



“The entire single-stage gig was housed in a gigantic modular tent, 60 metres wide and 100 meters long.”

SPIN OFF FESTIVAL 2019

Novatech Brings It All for Splendour Offshoot

The Spin Off Festival rocked 20,000 attendees at the Adelaide Showgrounds on Friday July 19. Cheekily named for its partnership with Splendour in the Grass to bring sideshows to SA, the single-day event brought Splendour headliner Childish Gambino to town, along with Catfish And The Bottlemen, Ball Park Music, Ocean Alley, Wolf Alice, Hockey Dad, and more. Novatech Creative Event Technology partnered with promoters Five Four Entertainment and Secret Sounds to supply the massive tech requirements.

The entire single-stage gig was housed in a gigantic modular tent, 60 metres wide and 100 meters long. Its supporting king poles could hold a massive six tonnes each, which was a good thing, because Spin Off had a huge requirement for LED screens, lighting, and PA, all supplied by Novatech.

The main PA consisted of 16 elements of L-Acoustics K2 line array per side, supported by 32 L-Acoustics SB28 subwoofers. Two delay hangs of eight elements of K2 were supported by rigging half-way down the tent, and L-Acoustics' smaller Kara line source were used as infill and outfill. The audio system was modelled beforehand and checked for even coverage by Novatech using L-Acoustics Soundvision software. L-Acoustics P1 processors, which integrate the new M1 measurement and tuning system, looked after the PA and kept it purring through the show. Onstage, Novatech deployed L-Acoustics X15 wedges, augmented by d&b

audiotechnik M2 wedges for Catfish And The Bottlemen. A full complement of industry standard in-ear-monitoring systems and wireless mics were on hand to cater to each artists' preferences.

Novatech provided Avid Profile mixing desks for the house system at both FOH and monitors. Touring consoles that made guest appearances at FOH included a DiGiCo SD7 for Childish Gambino, a Midas Pro 2 for Catfish And The Bottlemen, and a DiGiCo SD10 for Ocean Alley. Monitor-land hosted Ocean Alley's DiGiCo SD12, Catfish And The Bottlemen's DiGiCo SD10 and Childish Gambino's SSL 500. All signal transport was integrated via Optocore.

The mighty house lighting rig supplied by Novatech comprised eight Vari-Lite VL4000 spots, 25 Martin MAC Viper Profiles, 12 Claypaky Sharpys, 22 Martin MAC Quantams, 10 GLP Impression X4s, 12 SGM XC-5s, 16 Prolights Solars, and 25 blinders, plus two Hazebase base* touring Smokes and three Reel EFX DF50 hazers.

Because too much is never enough, three floor packages were provided for artists at the top of the bill. Ocean Alley got 14 GLP X4 Bar 20s and six additional blinders, while Catfish And The Bottlemen were provided eight DreamColor LED Strips and 24 LED PARs fitted with Robe Halo LED rings. It was Childish Gambino's LD that really pushed the envelope, adding four Robe Robospot

systems controlling four Robe BMFLs, 19 Clay Paky Scenius Unicos, 48 GLP Impression X4s, 50 GLP X4 Bar 20s, and 26 GLP JDC1 Strobes, plus two Hazebase base* hazers, four Hazebase classic* smokes, and four BT-Hurricane DMX Fans.

Lighting control provided for the house was courtesy of a grandMA3 and grandMA3 light. Childish Gambino rolled in a grandMA2 and a grandMA2 light. Catfish and The Bottlemen's LD rocked a ChamSys MQ100, while Ball Park Music's lighting crew opted for a High End Systems Hog 4. Art-Net switching was ingeniously handled by a TMB ProPlex GBS network selector, enabling seamless transition from desk to desk, along with redundant fibre connection for peace-of-mind.

The all-important video component saw huge ROE Visual Carbon 5 LED screens built throughout the venue; two IMAG screens left and right of the stage measuring 6x3.6m each, a 6x3.6m delay screen hung at the FOH ops position, an 8.4x4.8m screen hung upstage, and two 5.4x3m screens outside the tent. All screens were run via Brompton SX40 LED processors, fed by fibre from Brompton Tessera XD 10G data distribution units.

A Ross Carbonite flyaway kit was brought in for video switching, and fed by Novatech's cameras positioned at FOH ops and on stage. Childish Gambino's crew utilised Novatech's video and capture gear, and supplemented it with cameras and operators of their own, patching into the system. "I had a bit of a moment sitting at FOH ops watching the show," shared Novatech's Managing Director Leko Novakovic. "I looked up and realised that all of the lighting, all of the audio, and all of the video was owned and provided by Novatech. It was a good moment!"



Easey As: TAG Opens in Melbourne

Seizing an opportunity to welcome friends, customers and colleagues to the company's new Melbourne office, Technical Audio Group commandeered the first day of the Integrate expo in late August for a Grand Opening.

"With so many of the audio-visual industry already in town it was perfect timing," said Giles Brading, TAG National Sales Manager and leader of the TAG Melbourne team. "Once we set the date there was some furious renovation needed to get the training facility ready, but I'm delighted to say that after some round-the-clock project management from TAG Technical Director Anthony Russo, we've got something a bit special here."

The new offices are not only a base for TAG's Victorian team, but replicate and extend the training, demonstration, and meeting facilities that TAG HQ in Sydney offers. As well as the new state of the art training facility, the four-level building in the inner city, hipster suburb of Collingwood houses an office/admin level plus a rooftop meeting/demonstration level, making 46 Easey Street the perfect hub, as well as a pretty good place for a plate of paella and a beer among friends.

"The technical nature of our products, particularly QSC Q-SYS, necessitates plenty of training and we have been offering sessions on a frequent and regular basis

in Sydney," said Anthony. "Having a home for training in Melbourne is a really important step for us, it's a promise we made to ourselves a while back and it's something we've been very keen to deliver."

Combining the Grand Opening with Integrate meant representatives from TAG suppliers Allen & Heath, Audio-Technica, Martin Audio and QSC were all in town, including QSC CEO and AVIXIA Chairman Joe Pham. Who better, to cut the virtual ribbon onstage, alongside TAG Directors Maxwell Twartz and Anthony Russo?

In a brief address Joe mentioned the importance of relationships, QSC/TAG's successful 25-year history together and the exciting shared future ahead.

Following the formalities, QSC's dynamic training duo Patrick Heyn and Nathan Makaryk took the stage with an improv comedy set and were very warmly received by the 180 or so guests. Giles spoke for the whole TAG team when he added; "It's a



Max Twartz, Joe Pham, and Anthony Russo



QSC's Nat and Pat

privilege for us to welcome so many friends here tonight. We're looking forward to this place being our home in Melbourne but we also want you to feel at home so please make it as much about you, as it is about us."

Labour Hire Licenses Snare Productions – AV firms may breach new laws

by Julius Grafton

The State of Victoria is the latest to bring in an onerous new license system for labour hire that will affect any firm that rents labour. It is not restricted to crewing agencies but also applies if a line item on an invoice includes labour by the hour.

From 30 October 2019, substantial penalties will apply in Victoria to labour hire providers who don't have a licence or a licence application pending and businesses that use unlicensed providers. Note that last part – a client can be fined as well. Queensland and South Australia have similar schemes in place, ostensibly aimed at cleaning up the fruit picking industry. Each scheme is different, forcing national providers into different compliance regimes.

A range of companies that you would not consider to be labour hire companies are applying for the license.

A worrisome aspect to the Victorian license is that the tiers for the application fee are based on a company's turnover, not just in Victoria

but in total including other states. This means they may pay a proportionally higher rate for the license than their operations in Victoria might warrant.

In some cases subsidiary companies are being formed to mitigate the costs and insulate labour hire operations from the holding company.

The more straight-forward Queensland license is charged based on turnover in that state only. The South Australian system requires the 'responsible person' to do a couple of courses.

The schemes are a barrier to entry for a lot of potential providers and reduces the scope for competition. They favour larger players; companies with offices that can handle the extra reporting requirements and costs.

The other states, including NSW and WA, haven't announced similar licensing schemes but given there are fees to be charged, possibly will follow. The Federal Government have indicated they may introduce a national system which may sit over the state systems

or lead to the abolition of state systems.

In the Queensland scheme there are reporting requirements where you have to itemise every job you've worked on, who the end client was, how many crew and specify the venue. A lot of this goes on the public record, which could create competition complications.

The schemes are not restricted to crewing agencies. For example an audio company who cross hire out a technician for a tour, without equipment, would technically be operating a labour hire company and would require a license. Without a license, the company would be in breach, and so would the client company that hired the tech. Both companies would be liable to pay fines.

A labour hire provider is a business that has an arrangement with one or more individuals under which the business supplies the individuals to perform work in and as part of a host's business or undertaking and the provider is obliged to pay the individual for performance of the work.

WHERE WILL IT TAKE YOU?



NEW A SERIES LINE SOURCE

The new A15 and A10 systems deliver renowned L-Acoustics concert performance and reliability for audiences from 50 to 5,000. Mounted on a pole, stacked on the companion KS21 or flown in vertical or horizontal arrays, the new A Series combines plug-and-play ease and international market acceptance. This versatile solution, with adjustable directivity, scales with the needs of your company and is your gateway to the L-Acoustics rental network. A Series can take you anywhere you want to ~~go~~ **www.l-acoustics.com**

GROW!



Distributed by

JANDS www.jands.com.au

SAFER TRUCKING

Australia's largest entertainment logistics firm ATS have introduced a fleet-wide driver monitoring system called Guardian Seeing Eye that has already saved one driver within weeks of implementation.

The driver-facing camera feeds a control face-and-gaze-tracking algorithm that measures the driver's head position and eye closure and, when safety parameters are exceeded, audio alarms and seat vibration are immediately activated. Guardian also features a forward-facing camera which captures critical information about road conditions at the time of the event.

ATS boss Phil Duncan showed CX some downloaded footage of various driver distractions, which result in a driver discussion. When first installed, Phil says some drivers were resistant, until the major incident where the driver can be seen nodding off. The front camera shows the truck tracking off the road, until the seat shaker and alarm quickly woke the driver who safely corrected.

When these fatigue or distraction events are detected, data and footage are immediately relayed to the 24/7 Guardian Centre, which then alerts fleet management and allows them to respond in real time to the developing situation in the cab. Phil says he had an incident where the driver distractions happened with a driver over one day, and in discussions, although the driver had just come off a rest weekend, his sleep was inadequate.

Commenting on the cost of the system, Phil says his promoter clients appreciate risk mitigation, for while ATS operate wholly within driver legal driving limits, the time-sensitive nature of touring means arriving on time is everything. 'It has saved one life potentially already, so the cost is irrelevant'.

by Julius Grafton



Robe showcases new ESPRITE LED moving light in Melbourne

by Jason Allen

On Wednesday 4 September, Robe and Jands chose Harry the hirer's Melbourne warehouse to showcase a revolution in LED fixtures; the ESPRITE LED moving light. This very bright and precise moving light is the first to use Robe's ground-breaking new generation 650W WTE (White Transferrable Engine) light source. Robe CEO Josef Valchar himself was in attendance, along with lighting luminaries (pun definitely intended) from around Australia.

Even an audio guy like me gets the significance of this product and the products that will come after it; for the first time, it's as economical to change the LED engine as it was to change a lamp in a discharge fixture. You can also upgrade the engine, or put in one with different capabilities. It has huge implications for ROI, inventory management, environmental impact, product lifetimes, performance consistency and more. Robe are ahead of the game on this one! Here's more details from Robe's release on the ESPRITE:

"ESPRITE is the first in a new series of Robe luminaires to feature a fully replaceable and transferable white source LED engine. This high-performance luminaire can potentially replace old and entire fleets of workhorse discharge fixtures.

Offering a cost-effective and easily changeable LED engine, Robe has eliminated the white source problems of unpredictable life and performance inconsistency. The LED module holds a host of useful data in addition to the date, serial number and usage, which can be accessed via a free mobile App.

The crystal-clear, extremely bright and hugely economic WTE LED engine signals a wave of true lighting evolution. Thanks to this powerful LED light source and a highly efficient optical system, the fixture outputs 27,000 Lumens.

Other design innovations include a new

cooling system that removes any airflow over the optics, resulting in reduced residue deposits and vastly extending the periods needed between cleaning sessions.

A 5.5 – 50° zoom range provides a high-quality flat-field beam, combined with fabulously smooth CMY colour mixing, extremely fast bumping colour wheels and a unique coloured prism for producing a new level of effects and animations.

Versatility can be maximised with effects like the animation wheel, variable CTO, two colour wheels, rotating and static gobos, a 6-facet rotating prism and a selection of 1° and 5° frosts.

Together with a set of accurate framing shutters, and invaluable LED 'adjuster tools' like C-Pulse flicker-free management for optimisation with the latest HD and UHD cameras, the unit also has L3™ (low light linearity) dimming for perfect results in the most demanding of performance conditions."



Robe's Josef Valchar with Jand's Paul Mulholland



Jand's Eddie Welsh and Darren McLanders



MotoGP appoints Audio-Technica As Its Microphone Services Solutions Provider

Audio-Technica has announced its recent appointment as official Microphone Services Solution Provider to MotoGP who are the organisers of the Grand Prix motorcycle racing Championship. Dorna Sports S.L., the commercial rights holder of MotoGP, made the appointment.

Successful tests resulted in Dorna Sports' decision to select some 265 Audio-Technica microphones, headsets and monitoring solutions. These include 53 microphones to be placed along the track. Another 76 microphones are used to film interviews and news reports. Audio-Technica's new 3000 Series handheld wireless and 935 gooseneck microphones are used for the pre & post-race press conferences. 30 BPHS1 headsets are

deployed at various commentary positions. A selection of 72 M60x monitor headphones and E50 in-ear monitors allow the MotoGP teams to oversee their audio feeds. The selected Audio-Technica solutions were rolled out during the first European race of the 2019 MotoGP season at Jerez, Spain in May.

Daniel Laviña, Media Technical Director at Dorna Sports, stated: "We immediately noticed a major step-change in track audio

acquisition quality when we had the Audio-Technica shotgun microphones installed. With their wide frequency response and high SPL threshold, they seem ideally suited to the sound of the race, and we can now have great quality audio continuity between one camera position and the next."

Commenting on the appointment, head of global engineering at Audio-Technica, Kazuhiro Onizuka, said: "We are delighted that we have been selected as MotoGP's Microphone Services Solution Provider and that Dorna Sports has deployed such a large number of our broadcast microphones. However, I am particularly excited by the close R&D opportunities that we will be able to work on together. Working with Dorna Sports at the actual live MotoGP races around the world is a great extension to our research laboratory, and further demonstrates Audio-Technica's commitment to sports audio broadcasting."

Clear-Com Unveils FreeSpeak Edge: The Next Generation Of Digital Wireless Intercom

Clear-Com is proud to announce FreeSpeak Edge, the latest addition to the industry-leading FreeSpeak family of digital wireless intercom solutions. FreeSpeak Edge is the most advanced wireless intercom system, delivering the best audio quality and enhanced performance in some of the most complex live performance environments. The system also gives the user more control and customisation options, thanks to advanced frequency coordination capabilities and intuitive design features in the system's transceivers and beltpacks.

Built from the ground up, FreeSpeak Edge is the result of extensive feedback from existing FreeSpeak II power users, incorporating recent advances in the fundamental technology, leading to an all-new 5GHz chipset that features an exclusive radio stack development which has been optimised for intercom.

FreeSpeak Edge also leverages state of the art audio-over-IP developments in its architecture, utilising AES67 connections between the transceivers and the host intercom frame for exceptional flexibility in deployment.

"FreeSpeak Edge is the future of advanced wireless communication," said Bob Boster, President, Clear-Com. "While



some manufacturers are trying to improve incrementally on existing solutions, we have leapfrogged right to the edge of what is possible with wireless intercom technology today, in readiness for tomorrow's increasingly demanding requirements. We often hear talk of so-called game-changers, but FreeSpeak Edge is the real deal."

The 5GHz band is an ideal choice for large scale communications, as it can be managed with frequency coordination for reduced interference and offers the widest range of RF channels available for exceptional scalability. Its higher frequencies mean there's more bandwidth for data which allows for finer control, additional audio channels, more robustness, lower latency and better audio quality.

FreeSpeak Edge leverages all the power of 5GHz technology to perform flawlessly in even the most challenging venues and high multipath environments. The system takes advantage of Clear-Com's exclusive RF technology which uses OFDM to provide a robust transport layer that is immune to most forms of interference. FreeSpeak Edge delivers the clearest 12kHz audio quality with

ultra-low latency and is highly scalable with the technology and bandwidth to support over 100 beltpacks and 64 transceivers to accommodate the largest productions. It can be combined seamlessly with FreeSpeak II 1.9GHz and 2.4GHz systems, providing three bandwidths across a single unified communications system.

FreeSpeak Edge transceivers and beltpacks offer more customisation and control than ever before to accommodate increasingly complex communication needs. The beltpack's ergonomic design includes asymmetrical concave/convex top buttons for identification at a glance and touch operation; eight programmable buttons; rotary controls on both sides; and a master volume control and flashlight on the bottom. With a mic and speaker for headset-free or desktop operation, the beltpack was designed with today's production needs in mind. Each ruggedised transceiver supports 10 beltpacks and includes attenuation and external antennas for custom RF zones as well as wall and mic stand mounting options. The system delivers the robustness and reliability that customers have come to expect from the award-winning FreeSpeak range.

Aveo Systems Appoints Jands As Distributor

Aveo Systems has announced the appointment of Jands Pty Ltd as its exclusive distributor in the Australia-New Zealand region. Aveo Systems' Mira Connect provides an intuitive and simple user experience for rooms of all sizes. Mira Connect manages all of the equipment in the room including audio and video conferencing solutions and Zoom Rooms, and integrates with Microsoft Office 365 calendars, allowing users to start calls with a single button press.

No programming is required, and Mira Connect seamlessly manages hundreds of audio, video and meeting products from different collaboration solution providers.

"Mira Connect, from Aveo Systems, is an impressive innovation that further

complements our existing AV conferencing product portfolio," explained Phil Muffet, National Sales Manager at Jands. "Jands is committed to providing the best solutions for our customers and partnering with strategic vendors who complement our integrators' existing solutions."

"Jands is one of the strongest AV companies in the ANZ region and is well respected by integrators and users," said Paul Roberts, Aveo Systems' Director of Sales. "We think they will be the perfect partner for promoting Mira Connect to corporate, educational, and other users in the area."





Distribute 4K UHD Video and Dante™/AES67 over Gigabit Ethernet

It's here: Video for Dante™ - Visionary Solutions brings the power of Dante™ /AES67 enabled connectivity to video. For Installed AV professionals, the impact of Dante™ /AES67 connectivity has been a game-changer, enabling fast, easy, and economical digital networking of multi-channel audio over IP.

Wouldn't it be great if there was a Dante™/AES67 solution for video?

Introducing PacketAV DUET from Visionary Solutions.
The perfect marriage of Audio and Video over IP.

- ▶ Enterprise Level Security – AES Encryption, 802.1x, HTTPS, SSH
- ▶ Ultra-low Latency (visually lossless video)
- ▶ HDMI 2.0 and HDCP 2.2 Compliant
- ▶ USB over IP (KVM) and RS232 over IP
- ▶ Dante™/AES67 Audio Embedding and De-embedding
- ▶ HDMI Loop Through
- ▶ Built in Video Wall Functions
- ▶ Adjustable Video Bitrate
- ▶ Auto Video Scaler
- ▶ POE

This Really Does Change Everything

PacketAV DUET is nothing short of a paradigm shift for networked AV.

True convergence is finally here; a single platform to support Dante™/AES67 & Video over IP.

Integrate 4K UHD video over IP into your Dante™ enabled audio network and bypass the constraints of traditional switch matrix systems by harnessing the flexibility and scalability of converged IP networks.

This is video for audio professionals.



- In-Room Magnification / Image Magnification
- Commercial & Residential AV Systems
- Sports Bars
- Retail
- Live Venues
- Stadiums
- Reception Areas
- Classroom/Education
- Digital Signage
- Luxury Transport
- Boardroom Systems
- Collaborative PC Systems
- Command & Control Rooms
- Courtrooms

Over 30 Years in Business

To find your nearest Integrator/Reseller, please visit www.pavt.com.au and click on 'Where To Buy'



Production Audio Video Technology Pty Ltd

4/621 Whitehorse road, Mitcham 3132 Victoria

Ph: 03 9264 8000

sales@pavt.com.au

NEW GEAR

Audio-Technica ES925

The new modular gooseneck microphone range from Audio-Technica offers a choice of four bases, six gooseneck lengths and four capsules - a total of 96 unique combinations. The four low-profile capsule elements include MicroLine, hypercardioid, cardioid and omnidirectional, offering respectively 90-degree, 100-degree, 120-degree and 360-degree acceptance angles.

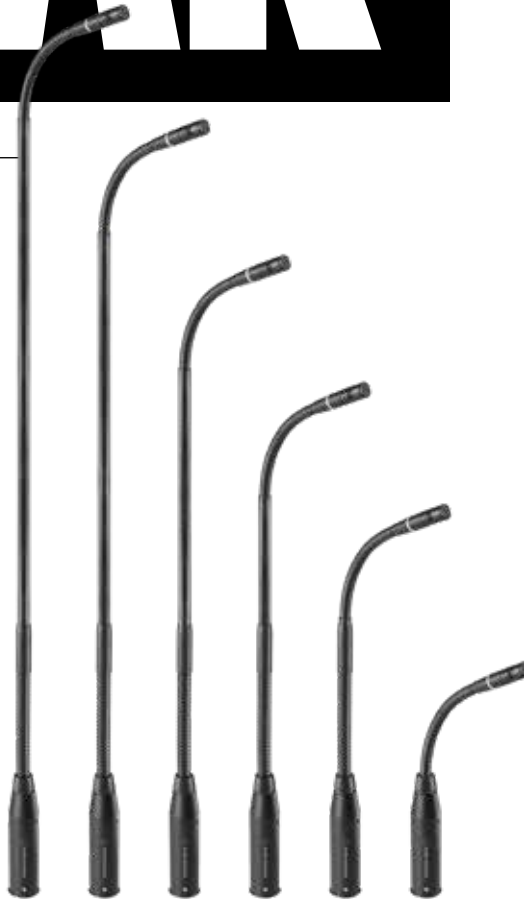
Mounting/power module options include a desk stand and a conventional XLR mount that connects to any 3-pin XLR-F, and a 3-pin and 5-pin LED flush-mount. Both versions are equipped with a capacitive touch switch to enable local muting of the microphone. The 5-pin version offers remote muting and customised LED colours for status indication. Between capsule and mount are six high quality goosenecks that stay where they are put! Options include, 6", 9", 12", 15", 18" and 21".

Australia: TAG

www.tag.com.au or (02) 9519 0900

New Zealand: Jansen

www.jansen.co.nz or 0800 452 673



Acoustic Technologies Blackbird ShowStack System

An all-new design system comprising a compact sub bass cabinet, the SSB4000, housing an 18" Neodymium driver, and a full range cabinet, the SS2000, consisting of two high-powered low distortion Neodymium drivers and an isophasic slot loaded with 3 x 3" high compression drivers. The SS2000 full range cabinet houses 8000 Watts of Powersoft amplification with DSP; with 3000W delivered to the sub cabinet, 2000W to the 12" mid bass drivers, and 2000W to the HF drivers. Comes with flight cases and five year warranty.

Australia and New Zealand:

www.atprofessional.com.au

or +61 (0) 7 3376 4122

AV Stumpfl PIXERA

AV Stumpfl's brand new media server and software, built from the ground up, combines the ability to create projects both large and small, with a focus on speed and ease of use. Features include being able to load your Vectorworks and 3ds Max files straight into PIXERA and work on them in a 3D space, as well blind edit and live preview from the timeline. The PIXERA range is available in both a software only and turnkey hardware solution format.

Australia: Show Technology

www.showtech.com.au or (02) 9748 1122

New Zealand: Show Technology

www.showtech.com.au or (09) 869 3293



Introducing the **2028 VOCAL MICROPHONE**

Built for life on the road

- The renowned DPA sound
- Natural vocals – from folk to metal
- Reduces feedback issues
- A sturdy mic designed for live
- For wired or wireless use

Capturing true sound – that's your passion.

Producing an unforgettable show – that's your job.

The right mic lets you do both. Effortlessly. The 2028 Vocal Microphone is designed for the unique challenges of the live stage. Available in wired or wireless versions. Either way, just plug it in and hear the voice shine like never before.



ALL-IN-ONE

Redundant Playback Interface



SW8-USB

The SW8-USB is the complete solution for performances that utilize redundant playback systems for backing tracks, combining two built-in high performance USB interfaces with an auto-switching feature that detects dropouts and effortlessly switches to the backup computer in an instant.



Mackie ProFX Series

Mackie has announced a complete redesign of its analogue mixer series, the ProFXv3 Professional Effects Mixers with USB. With a new design, it includes Mackie's renowned Onyx mic preamps, GigFX Effects Engine, and 2x4 24-Bit / 192kHz USB recording. Now included with the purchase of any ProFXv3 model is industry-stand DAW, Pro Tools | First, plus the exclusive Mackie Musician Collection featuring 23 Avid plug-ins. The ProFXv3 Series is available in the 6-Channel ProFX6v3, 10-Channel ProFX10v3, 12-Channel ProFX12v3, 16-Channel ProFX16v3, 22-Channel ProFX22v3, and 30-Channel ProFX30v3.

Australia: Amber Technology
www.ambertech.com.au or 1800 251 367
New Zealand: Music Link
www.musiclinknz.co.nz or 09 250 0068



Event Lighting ENFORCER 580

The Event Lighting ENFORCER 580 is a high output moving head hybrid. With a 580W White LED module and zoom range of 6.5 to 40 degrees, this is the first Event Lighting fixture to feature an animation wheel and framing system.

Australia and New Zealand:
EVENTEC
www.eventec.com.au
or +61 (0)9 9897 307



NEW

SurgeX SEQ-1210i

The SurgeX SEQ-1210i provides sequencing, conditioning, shutdown thresholds and surge protection required to safeguard audio, video, broadcast and computer equipment. Easy to install and program, the SurgeX SEQ-1210i sequencer has robust management features including, two always-on IEC outlets and four banks of two IEC outlets, which power on in sequence and power down in reverse sequence, cascade output to extend the sequence into additional SEQ-1210i sequencers and a "virtual" bank for users to control remote units. Connected devices are provided with superior surge protection and damage prevention. The SEQ-1210i completely eliminates surge energy up to 6,000 volts, without earth contamination or common mode disturbances, compared to more conventional MOV circuitry.

Australia: Amber Technology www.ambertech.com.au or 1800 251 367
New Zealand: Amber Technology www.amber.co.nz or (09) 443 0753



Kali Audio MV-BT

Kali Audio's MV-BT is a Bluetooth input module with balanced XLR and TRS outputs. Independent volume control and aptX codec allow for CD-quality audio transmission over Bluetooth. The large, weighted knob on the MV-BT controls volume independent of the playback device. Easily connect to professional speakers, mixers, and interfaces with either TRS or XLR cables. Balanced connectors ensure low-noise signal.

Australia: NAS
nas.solutions or 1800 441 440
New Zealand: NAS
nz.nas.solutions
or (09) 414 4220



DPA 2028

The DPA 2028 Vocal Microphone features a brand-new fixed-position capsule, as well as a specially designed shock-mount and pop filter. It exhibits a supercardioid polar pattern, with uniform off-axis response.

The 2028 is offered in three variants; a wired XLR with handle and two wireless mic configurations that are compatible with the industry's most widely used wireless microphone systems. This includes the SL1 adapter, compatible with Shure, Sony and Lectrosonics; and the SE2 adapter, compatible with Sennheiser.

Australia: Amber Technology
www.ambertech.com.au
or 1800 251 367
New Zealand:
Direct Imports
directimports.co.nz
or (06) 873 0129





Optoma GT1080HDR

Optoma's new GT1080HDR has full HD 3D functionality, accepts native 4K signals and is compatible with high dynamic range (HDR) technology. 4000 ANSI Lumens deliver vibrant viewing in ambient light conditions, allowing users to keep lights on during viewing and making it perfect for medium-sized spaces, including living rooms, boardrooms and classrooms. An integrated 10W speaker allows audio content to be heard clearly across the room. The projector produces minimal noise with 26dB quiet operation.

Australia: Amber Technology
www.ambertech.com.au or 1800 251 367
New Zealand: Amber Technology
www.amber.co.nz or (09) 443 0753

GEAR



PR Lighting AQUA LED 730 Framing

The AQUA LED 730 Framing is the latest IP65 rated moving head fixture from PR Lighting. It features a high output 730W White LED Module, CMY colour mixing, frost, iris, animation wheel, framing system and a wide zoom range of 7-59 degrees.

Australia and New Zealand: EVENTEC
www.eventec.com.au or +61 (0)9 9897 307

EV ELX200

The black or white ELX200 enclosures offer a step up in both styling and build quality. The design allows for a larger waveguide, which is placed forward in the enclosure to time align the woofer and the tweeter. A Class D power amplifier delivers distortion free maximum SPLs utilising high sensitivity transducers — all designed and engineered by Electro-Voice. System reliability is verified with over 500 hours of abuse and endurance testing.

Australia:
www.boschcommunications.com.au
or 1300 026 724
New Zealand: Musicworks
www.musicworks.co.nz
or 0800 687 429



QSC KS118

Succeeding the KW181 model, QSC is pleased to introduce the KS118 active subwoofer. Featuring a long excursion 18-inch direct radiating driver powered by a 3600 Watt Class D amplifier, the KS118 delivers high sound pressure levels with dynamic and musical sound reproduction of very low frequencies. On-board DSP optimises and protects system performance while also offering advanced capabilities such as the ability to array two units in a cardioid arrangement, maximising low frequency output in front while minimizing unwanted energy around the sides and rear of the system. DEEP mode provides additional low frequency extension and driver excursion processing.

Australia: TAG www.tag.com.au or (02) 9519 0900
New Zealand: NSL
www.nsl.co.nz
or (09) 913 6212



Integrate 2019

by Jason Allen

Integrate 2019 was back in Melbourne's MCEC from 27 to 29 August, with a slightly less exuberant floorplan showing some restraint on the part of the big international screen brands. Not so much with the two-storey stands with their own cafes, more with the product and people on the ground. While nothing on show was particularly ground-breaking, there was still enough gold scattered around to grab any dedicated technophile's interest.

TAG



TAG

Technical Audio Group were celebrating the inauguration their new three-storey office and training facility in Collingwood, which they did in fine style on the opening night of the show. It's a slick fitout and a wise investment, with more and more of TAG's business coming from the top end of town, particularly in the Q-SYS environment.

And QSC's Q-SYS is still completely killing it in the world of integration. Their NV Series video endpoints have arrived, their implementation of DSP and control on a Dell server is an industry-leading product, and they've beaten everyone to the punch by

introducing software-based Dante. Q-SYS are leading the entire industry in this space because they're doing what their customers want, and in some cases, inventing things that their customers didn't even know they wanted yet, instead of following the old 'we made a new box, now let's sell it' business model.



QSC's Pat and Nat

Nothing demonstrates QSC's 'customer first' attitude more eloquently than Patrick Heyn, their director of marketing, and Nathan Makaryk, QSC's senior training manager. They were both at Integrate performing regular Q-SYS presentations on the TAG stand, and doubled as entertainment at the Collingwood launch, because they're actually a comedy duo with 20 years' experience in improv; they met at college, and have performed together ever since. They develop and deliver the excellent Q-SYS training programme, which is brilliant because 'Pat and Nat' know how to entertain and hold an audience's attention. Actual people have to sit through product training; making it entertaining and memorable is a must, and something almost no-one does.



Allen & Heath Custom Control with dLive IO

Also on the TAG stand; a range of new Allen & Heath Dante I/O, including install versions, plus the extremely useful new Custom Control app. Custom Control is a customisable, cross-platform control app for Allen & Heath dLive audio systems. It can run on iOS, Android, Windows, or Mac, and has all of the usual multiple user/multiple device levels you'd expect. All graphics are customisable, and apart from the obvious control system applications for installs, TAG's Andrew Crawford had eloquently demonstrated its usefulness by building a radio mic monitoring page for a musical, complete with character names and pictures, with real time signal monitoring under each label.

Jands



L-Acoustics' Scott Sugden

Off the show floor and up in a demo room, L-Acoustics' Scott Sugden, Product Manager USA & Canada, ran an extremely slick L-ISA demo utilising five elements of Syva. For the doubters, it perfectly demonstrated what all the fuss about immersive audio is about. I like to think of the type of front-hang immersive demonstrated by Scott as 'stereo that works properly for everyone'. His presentation cut through hype and neatly pointed out that

every technology used in audio has changed over the last few years, except the format of the bus we mix FOH out of.



Clear-Com LQ

Clear-Com LQ provides an AoIP comms link to apps or the cloud, as well as links to analogue and digital intercom devices of any brand. These interfaces can move audio signals to-and-from one endpoint to another endpoint with near-zero latency and

maintain high audio quality throughout the network. The practical upshot? Comms on your crew's phones, using Clear-Com's AgentIC app.

ETC have decided there's something in this whole moving head LED market after all. The Relevé



ETC Relevé

uses an additive LED RGIL (ColorSource Deep Blue) system producing 6,000 lumens, with five rotating/indexing gobos, 18-54° zoom range, Ani-gobo breakup and effect wheel, variable frost and instant pan and tilt calibration/homing at boot with minimal movement, delivering the extremely quiet operation you'd expect from the theatre specialists.



Biamp ATOM

More things you can do on your phone: Biamp's Crowd Mics 'audience engagement solution' makes everyone's phone or tablet into a microphone you can run through the PA. Do any AGMs for large corporations and have to deploy Q&A mics? With a hardware unit, a banner and a QR code, you just patched in a thousand. For obvious reasons, there's extensive admin and moderation before signals are passed through, and initial test in the field in Australia have been positive. The hardware unit is called the ATOM and it supports up to 1,000 event participants.

Conectivity is via USB or balanced analogue.



Loopworks Measure R1

I love finding tiny things that are actually huge in application. This tiny thing is the Ampetronic Loopworks Measure R1 Receiver. It's an audio induction loop receiver designed to be plugged into your phone and used in conjunction with the Loopworks Measure iOS App. The app can help you evaluate your installation site, and eventually test your installed system against IEC 60118-4 for certification, and uploads everything to your account via the cloud. Job done!



Huddle Hub One

INFINITY *Signature* SERIES
TRADITION REDEFINED

PRECISION EXCELLENCE CRAFTSMANSHIP

Clearlight Shows Pty Ltd | 61 3 9553 1688 | www.clearlight.com.au

PROFESSIONAL THEATRE FIXTURES

Spirit of

TS-260C7 7 Colour LED Profile

infinity

New to the Jands stable is Huddle Room Technology, and their Huddle Hub One. It's a multi-session wireless presentation system that supports up to seven concurrent sessions on the same hardware. The Huddle Hub One supports both device-to-display connections for meeting rooms, and BYOD device-to-device connections for use in any physical space, including lobbies, lounges and open spaces.



Robe iPointe takes a bath

It's always fun to have a water feature that proves your IP rating is the real deal. The Robe iPointe is IP55-rated and works equally well as a beam, spot, effect, and wash (ha!) fixture. The ingress protection comprises a series of interconnected filters and air chambers that prevent water from entering the fixture, and should eliminate the need for frequent cleaning and maintenance. The lightsource is a 310W lamp, with a lifetime of up to 4,000 hours, specially developed for Robe by Osram. Zoom is adjustable from 1.8 degrees to 42 degrees.



Shure MXA910 Ceiling Array Microphone

The Shure MXA910 Ceiling Array Microphone has been updated to include IntelliMix DSP, which handles acoustic echo cancellation, noise reduction, and automatic mixing, meaning it's now an all-in-one-product that pretty much sorts your VC signal chain. Integrators can incorporate multiple MXA910 microphones and the Shure IntelliMix P300 Audio Conferencing Processor for simplified room expansion and scalability, thanks to the distributed DSP architecture. Shure's patent-pending Autofocus technology continually fine-tunes the position of each microphone pick-up lobe in real time, for consistent sound when participants lean back in their chairs, or stand up.



The Wand in action at Pro Light and Sound 2019

ETC Augment3d at Integrate - More Than Just Pre-Visualisation.

by Alex Hughes

Pre-visualisation and the process of the pre-programming of lighting in general have not really evolved from the days of the first release of the popular visualisation platform known as Wysiyg. Over the years the only real improvement that has truly been constant ongoing innovation has been the overall quality improvement of the renders of our virtual spaces and stages. With the introduction of ETC's new visualiser known as Augment3d the whole process and workflow gets totally flipped on its head.

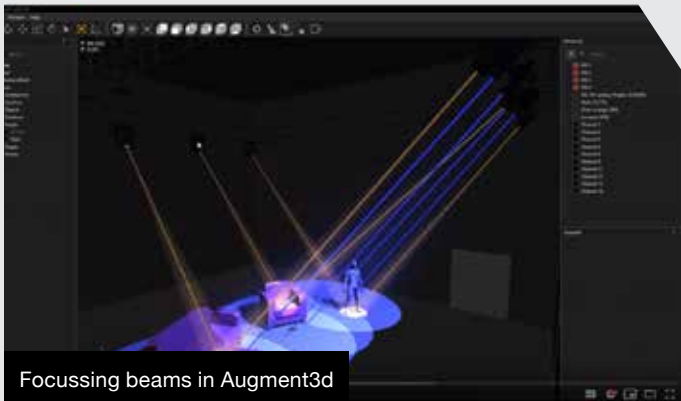
Roughly two and half years ago the creator and main visionary behind ETC Lighting put together a taskforce that included both existing and new staff to attempt to create something that had never been done or experienced before in the lighting industry. ETC saw the take up of augmented reality technologies (or AR for short) by companies such as Google and Apple in their smart phones and tablets and decided to go above and beyond what many in the industry ever expected to see in a pre-production tool by introducing augmented reality to the lighting world in a functional and efficient way.

Augment3d is touted as being ETC's first interactive 3d programming environment with the introduction of version 3.0 of the Eos family of console software in the beginning of the software rollout from Element all the way up to Ti. With this update the entertainment industry will gain a fantastic and unique tool that can help assist with both off-site and on-site programming

requirements. ETC sees this as the first step towards a new generation of interactive technology being incorporated into the next generation of lighting control systems. This will take lighting programming way beyond just data entry into the console. The heart of the new technology is built on well-known AR APIs and frameworks known as ARKit and ARCore, which are used in the Apple and Android operating systems respectively.

The workflow of Augment3d starts with the import of 3d models or even just a basic floor. A wide range of import options are available from .fbx, 3ds to .dae and dxf. Augment3d starts with a full plethora of import options right out of the gate. As well as the capacity to bring in your own models the software also comes with a library of basic furniture, shapes, people and even venues to get you up and running with. Once you have your model the next stage is bringing in fixtures. Augment3d gives you a few ways of doing this. One painless way of achieving this is directly from the console itself, as you can now add XYZ information to every channel in your showfile. Once you've added one of these values the light will automatically appear in Augment3d and you can shift your light or 3d object around the 3d space. On top of this the system also includes two way communication which means any changes you make in the 3d space of Augment3d get translated back to your console automatically. As well as manual placement of lights ETC have been hard at work making the export process from your chosen CAD program as seamless as it can be to save you hours of time positioning lights manually. Augment3d also takes this another step further by allowing you to focus all your moving lights to four known points in your room; the software will automatically calculate their location for you based on the position information you provide during your focus.

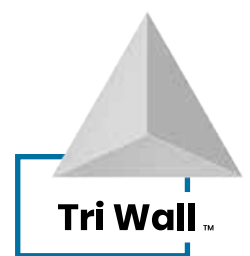
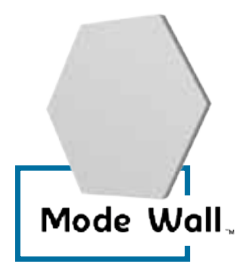
With your rig plotted in 3d the ingenuity of the program really starts to show with basic things such as the capacity to store your



3d camera views inside of lighting cues, this allows you to control where your 3d view is depending on where your area of interest is within the show. Augment3d also deviates from the constant pursuit of photo realistic renderings and instead focuses on the precise art of rapid light and position focusing. The software is also intelligent enough to work with the objects you supply. For example, if you focus in the software to an object that is raised such as a chair, rather than focusing your lights on the floor below the chair, the system calculates positional data so that you are lighting exactly where you asked. If the focus is on top of the chair this can be adjusted using the focus height option so you don't even need to calculate a focus offset manually. Taking it one step further Augment3d also adds a function called "focus tags" that allow you to work out which light is pointed where, by putting labels on both the light and where the light is hitting. Augment3d also introduces a new function known as "anchor points" that allow you to make slight adjustments without compromising the overall look you have created.

Augment3d is far from just a pre-visualisation tool with some helpful tricks. The mobile apps that are available to remote control the desk also get a major boost with the addition of true augmented reality. By scanning what ETC are calling an Augmented Reality Target Point the power of the Augment3d system is truly unlocked and available within the palm of your hand using a function known as "wand". By turning on wand mode and facing your phone camera to a fixture then tapping to select one or many of your lights you can instantly control the light by just moving the phone around and pointing it to where you want the lights focused. The remote app also takes this one step further with the 'find me' mode which has to be seen to be believed. Once the remote is set to 'find me' mode the lights are selected to focus directly on the location of the phone or whoever is holding the device. This quickly speeds up the time taken to focus large or even complex lighting rigs by quickly getting rough focus palettes built right from your device.

With Eos version 3.0 newer console hardware (consoles with a display port connector output) will natively be able to run the software on the same hardware as your normal lighting operations. For older consoles or for those who would prefer a separate hardware option the Augment3d software will also be available on Mac or PC operating systems. A full software release is expected later this year.



BACKDROPS Fantastic AUSTRALIA

1800 737 037
www.backdrops.com.au

AUSTRALIAN EVENT AWARDS FINALIST 2019

OUR BRANDS:

EVENTS **Fantastic AUSTRALIA** | **Modular BACKDROPS AUSTRALIA** | **BACKDROPS Fantastic AUSTRALIA** | **Party Drops™** | **Light Up LETTERS**

ULA Group



Elation's Eric Loader, ULA's Con Biviano, and Elation's Chuck Green

Big news at ULA was the arrival of Elation to their stable. "We understand the value in providing our clients with as many options and solutions as possible, therefore we sought an internationally recognised brand that was well respected and could cover a vast array of markets," stated Cuono (Con) Biviano, Managing Director of ULA Group. "As an acknowledged brand on international tour riders and an emerging standard in the major theatre market, Elation was a natural fit."

Elation Director of Sales & Marketing, Eric Loader, added, "A partnership with ULA was a logical step for us to move forward in the Australian and New Zealand market and is an important piece of our growth strategy. With an extremely well-qualified and experienced team with well-established relationships across the industry, along with offices across Australia and New Zealand, ULA is well prepared to support our product line and grow the Elation brand."

"Elation offers unique, innovative products across rental, production and theatre and that was important for us," Biviano said. "Not only was Elation an early adopter of LED technology and has developed some of the most advanced LED light engines, it is now at the forefront with a complete range of IP65 products and that's where we see the growth in the future."

The new partnership with ULA Group was launched at Integrate on the first day, where Elation's latest IP65 Proteus series and theatrical-grade Artiste series fixtures were on display.



Luxibel



VuePix Infiled Wallpaper 1.2 & VueStrip 10

Midas globally launches the Heritage-D at Integrate

The most teased and leaked mixing console of recent times, the Midas Heritage-D HD96 was finally, officially, globally unveiled by Midas and NAS at an invite-only function held adjacent to the Integrate tradeshow on the first night. You've been able to find photos, specs, and details on the internet for a while now, as Midas haven't exactly been keeping it a secret as they've tested it on gigs for the last year or so. But what we did discover was a lot more interesting than what effects it runs and what formats it uses to connect to I/O. For the first time in a long time, a new console to market has added some actually new, innovative features.

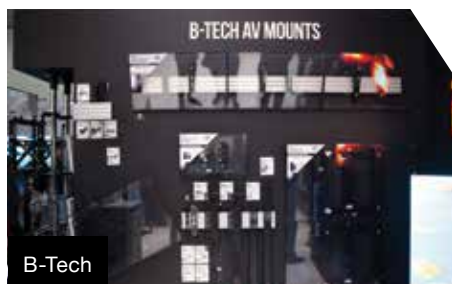
But first, the price and delivery date, as it's what most of you want to know. The console should start shipping this December, and will cost around \$55K AUD. You'll need to add I/O, but will be able to use existing Midas I/O if you already own them. You can also connect to some third party I/O

via MADI or Dante, but with reduced functionality.

The quick run-down on vital statistics: 28 faders, 1152 inputs/outputs in total, with 144 flexible inputs, 96 flexible aux sends, left/right/mono, 24 dedicated matrix busses, two monitor busses, two solo busses, and 24 effects slots, with effects from TC and new emulations of classics built for the desk. It runs at 96kHz, with Midas's famed processing delay compensation and phase alignment giving a max latency of 2ms, depending on what you're doing. Yes, that's a big touch screen, existing Midas users. The faders and encoders are beautiful and solid. The build is a joy to touch, and the industrial design is ergonomic and friendly.

Apart from the big bus and channel count at that price point, that's all pretty much par for the course, isn't it? What is new is the console's internet connectivity to the cloud, AI, and metadata functionality. Let's start with the internet and cloud applications: firmware upgrades can now be done without a separate download and connection, and various versions can be accessed for up and down grades. All your show files, in every version, time and date stamped, are in your cloud account; no more multiple show files on USB sticks. This also makes remote bug reports and fixes possible.

Other highlights at ULA included lighting from Luxibel, with a range of products specifically suited to conferences and exhibitions. New from VuePix Infiled is the VueStrip 10, adding a LED strip to the existing range just 10mm in width, and the ultrathin 'Wallpaper' 1.2mm pitch LED panels for UHD display.



B-Tech

Holding it all up is B-Tech, a new range of mounting systems that just found a home at ULA. "B-Tech's extensive range of high quality and innovative easy-to-install mounting systems is a perfect fit for ULA's product portfolio, providing system integrators and installers a complete range of digital displays and mounting solutions", says Con. "With the addition of B-Tech mounts we have complete confidence to provide solutions of the highest calibre for every stage of a project".

Epson

Epson Australia's stand featured a 270-degree immersive video environment fitted with multiple L-Series projectors running an awesome edge-blended immersive visual feast. It was a custom structure built by Igloo Vision, which created a completely dark environment with content that included geo-

mapping that transported you to the other side of the world. The dark and the immersive made it awesome, but also meant that I couldn't get a decent photo of it! So here's a photo of the new 7,000 lumen EB-L1070U.



Audio Brands Australia



Meyer Sound Ultra X-40 on the right

The remarkable Meyer Sound Ultra X-40 has landed, and was hung proudly at ABA. Its ingenious two 8-inch cone drivers plus 3-inch high-frequency compression driver through a rotatable waveguide, powered by a 3-channel Class D amplifier with a peak output of 1,950 watts, produces the finest sound I have ever heard from a powered box of its size and class. I would be happy to use a pair of these as (very large) studio monitors, and also fill a room of 500 people. Meyer Sound are reporting sales almost unheard of in the brand's lifetime, which are well deserved.



Midas Heritage-D HD96

AI; possible gimmicky, possible controversial. With built-in RTAs using flexible processing (no more taking up effects slots), incoming signals can be analysed and their source determined. Midas's Pete Sadler, speaking at the launch, said that this feature is still being tested and can be fooled, but most of the time it can identify instruments correctly and prompt to load the appropriate labelling, presets, and so on. This can then apply to the most powerful, and yet to be fully exploited function of the Heritage-D; metadata. Everything in the Heritage-D can be tagged with metadata; channel names, functions,

buttons, processing; you name it. Completely new functionality that the Heritage-D already has includes a page where you can pull up all channels that are tagged with certain parameters; for example, all channels with a compressor inserted, or gate, or both. Then you can adjust them all simultaneously. You can automatically identify any channel that has clipped, then get them to appear in a certain position on your control surface, to be dealt with. I like to call this "The Naughty Corner". Pete flagged that they could then make the gain reduce automatically, if enough people wanted that to happen.



Midas's Pete Sadler introduces the Heritage-D



NAS's Shane Bailey welcomes the crowd

And here's the really interesting thing to me about the metadata functionality combined with the cloud connection; Midas will have the capability to log and collect data on just about everything that's been done with these consoles. They'll have actual data on workflows, button presses, and more, not just what people say they want or do with the console, but what they actually do and how they do it. This has incredibly profound implications for design and manufacturing, and the future products coming out of Midas.



Linea Research



Bosch at ABA

ABA have expanded their role as a Bosch distributor, with access to more of the EV and Dynacord range. They've also picked up

distribution of Linea Research, an extremely nice collection of premium power amps with processing and control out of the UK.

NAS

Aside from the big noise from Midas, a number of new products made their Australian debut at NAS; dBTechnologies lovely new powered dual 5" with networked signal, monitoring and on-board processing, the VIO X205, and at the other end of the application spectrum, the B-Hype M; a powered 10" that



Trailer Stage

We can now supply custom-made trailer stages

Call us for more information!

02 9897 3077
www.event-lighting.com.au





Rear of the VIO X205



Behind the B-Hype M

comes with wireless mic, Bluetooth, SD card and USB port, battery, wheels and a handle.

Also eye-catching was Flex AV, another relative newcomer to NAS. They make Dante-enabled boundary mics that can be very cleverly integrated into any Dante environment, and configured via the Flex AV Designer software. The Flex AV FM-19D mics respond to control from most systems, and can change polar patterns, light up in different colours, and have a capacitive button that



Flex AV FM-19Ds

could be hooked up to anything. They also have a tiny speaker to play tones. Useful!



Left to Right: Espen Brynildsen - Riedel, Michael Walker - MCEC, Cameron O'Neill - Riedel, John Bell - Riedel

Riedel

Appropriately enough, Riedel presented Integrate hosts the MCEC with The Riedel Appreciation Award on the first day of the show, recognising the confidence shown by MCEC in Riedel solutions and acknowledging contribution of the venue management team in delivering a great result. Over the last two years, the MCEC has become a flagship client for Riedel Communications Australia, and was the first Convention Centre in Australia to install Riedel's Bolero Wireless system.

"The Riedel Artist and Bolero systems allow us to provide seamless communication across and between any of our venues. All configuration is available in a central application which is easy to use. This means

our technicians don't have to work with separate solutions for managing the different parts of the intercom systems," said Michael Walker, Infrastructure & Equipment Manager at MCEC. "The reliability, sound quality and flexibility of Artist and Bolero are the most important qualities to MCEC" he explained.



Bose

Bose

Bose had not one or two, but 50 new products on display at their impressive stand. Launched at ISE in Amsterdam in February, and covered by CX who attended the launch, all of the products are now shipping (or are about to ship) to the Antipodes. The dizzying new selection includes the ArenaMatch DeltaQ loudspeakers and ArenaMatch Utility loudspeakers, 12 models of new, easy-to-install DesignMax loudspeakers in a range of sizes (ceiling and surface models, black and white, with subwoofer options); five new PowerSpace amplifiers (two with onboard DSP); two Commercial Sound Processors with a simplified configuration tool; three new digital ControlCenter controllers; and an upgraded Business Music System Designer software tool. There are currently some hush-hush ArenaMatch installs underway in some high-profile locations, so watch this space for an install write-up after they go public!



TeamConnect 2 just hanging around

Sennheiser

Sennheiser's TeamConnect Ceiling 2, which has been shipping in Australia since May, is the update to their popular conferencing solution. Unlike ceiling microphones with static beamforming technology that work with predefined speaking zones, TCC2 captures the speaker no matter where they are in the room, so there is no need to alter the set-up when the number of participants changes or when a different seating arrangement is chosen. TCC2 supports Power over Ethernet (PoE), Sennheiser Control Cockpit, Dante Domain Manager, and provides an open media protocol for third-party control platforms such as Crestron.



Visionary Solutions' Jordan Christoff, PAVTs Dave Coxon, and Symetrix's Chuck Larsen

PAVT

Big news at PAVT wasn't so much 'what' as 'who', with legendary Sydney integrator Dave Coxon joining the team. Replete in the traditional PAVT checked shirt, Dave manned the stand, a font of insight and wisdom into the world of hospitality installations.



The amazingly clean lines of the rear of the EAW KF810P

Hanging just next to Dave was the equally attractive EAW KF810P install line array. This product is all about the beautiful lines, with all rigging, cabling and connectivity invisibly managed and covered. The KF810 module has dual 3" high frequency compression drivers, four 5" mid-frequency transducers and two 3" voice coil high power 10" LF drivers. All of this is outputted through an integrated horn that occupies nearly the entire forward face of the speaker enclosure, delivering up to 145dB with accurate pattern control to 250Hz. And if you want, you can get it weatherproofed and in white.

PAVT is always a good place to find something unexpected and useful, like the Attero Tech Zip4 Dante/AES67 paging station; a 4-button IP paging interface that can be routed over a Dante or AES67 network directly to your DSP, and can also integrate directly with Q-SYS via a dedicated Zip4 control plugin for Q-SYS Designer. Symetrix's highly competitive 4x4 Radius NX DSP was paired with a Symetrix T-5 Touchscreen, a 5-inch 800x480 TFT capacitive screen managed through the easy-to-program SymVue control interface, demonstrating a lot of processing and control power for not-a-lot-of bucks.



Attero Tech Zip4



Symetrix Radius with T-5 Touchscreen

HOW WAS INTEGRATE?

In three words: disappointing and gross



by Landell Archer, Regional Solutions Director, Australia and New Zealand, ACA Projects

I asked everyone I spoke to “have you seen anything cool today?” The most common answer I got was “no, the screens have just gotten bigger.” To say the tech was disappointing might sound shocking as you’re probably not used to someone actually reporting that but what was most shocking to me (as someone outside the AV industry) was the culture.

The “boys will be boys” mentality is alive and well in the AV industry. Suppliers and integrators still think it’s professionally ok to gather in strip joints and tell stories about the good ol’ days of Integrate. And I mean literally gather in strip joints - one large

supplier took all their distributors and clients to a Melbourne strip club on the first night and it was the hottest ticket in town. These companies are getting contracts worth millions and apportioning some of their funds to an entertainment budget. Read the subtext “we believe it’s professional and money well spent to take money from our university, government and corporate clients to take other men to strip joints while on work trips.”

I’ve heard stories about the history of this conference and the AV industry. The stories are not being used to change a thing. Maybe they’re just used to try and shock me. I was definitely shocked that there were promo girls

in beer maid costumes walking the exhibition floor. It’s 2019 right? That stuff was barred from IT conferences more than 10 years ago.

I’ve heard a story about a woman being sexually violated in front of a bunch of men with the punchline being that the man got dragged out kicking and screaming (insert expectation to laugh here) but no one can tell me what happened to the woman. A story about a 26 year old female employee at an AV company being told to bring an umbrella and a raincoat to her farewell party as her going



NOVA STAR

✉ stephen@novastar.tech
☎ +61 0435 970 315

NovaPro UHD Jr Real 4K All-in-One Controller



Amazing definition for excellent visuals

▶ 4096×2160 @60Hz / 7680×1080 @ 60Hz, free scaling to any size with crisp post-scaled image



▶ HDR (High Dynamic Range) support, wide color gamut and high contrast for the ultimate visual experience



▶ PiP, with unrestricted size and placement of windows for flexibility and a stunning result

“These are meant as jokes I’m sure but you’ve got to know that you can do far better than that.”

away present will be a spray of water and faeces over her. They had a special nickname for this disgusting act and documented it in their abuse in an email trail.

These are meant as jokes I’m sure but you’ve got to know that you can do far better than that. Whether you’re inflicting the “jokes” or standing around laughing at them, you’re complicit and it’s not good enough.

My days are spent talking to clients and prospects about what they can achieve with our platform. We talk about how to make the user experience more inclusive and accessible to the diverse workforce and university cohort that they’re dealing with. We’re specifically thinking about solutions to create great user experiences for people with mental health problems and autism so that those people can still participate and flourish in the workforce and at university.

There were people at the conference who really get that and are excited to talk about what they’re doing and trying to do in their organisations. It was great to catch up with clients from past jobs and consultants who are solving problems with design thinking not boxes. These were the highlights for me.

When it comes to creating great user experiences, not only can the legacy companies just not compete with their products, they just simply can’t even comprehend the future of work, the future of intelligent spaces, the “why” behind what we do. The stories from this conference prove that these companies and their products are stuck firmly in the past.

If you’re sick of the legacy companies and interested in working with a company who understands the current trends and unique challenges that digitisation brings, who builds platforms for the future, who engages intelligently and professionally with clients, then come and talk with us.

If you’re reading this and figuring out that you’re part of this culture and you genuinely don’t want to be, let me recommend “Boys Will Be Boys” by Clementine Ford. Read it, let it challenge you, let it change you and your work and family life will be better for it.

First published by Landell Archer on LinkedIn, 29 August 2019

<https://www.linkedin.com/pulse/how-integrate-three-words-disappointing-gross-landell-archer/>



Illustration of Jewella aka Dr Jenine Beekhuyzen, CEO of Tech Girls Are Superheroes. Image credit: www.techgirlsaresuperheroes.org

INTEGRATING THE OUTSIDER

by Dr. Catherine Wolf

I attended the Integrate AV Expo in Melbourne in late August. I came to this experience as an outsider. I had no idea what to expect. I had no idea why I was there, to be honest. My background is psychology. I am disabled. And I am female. I know from my life experience, that technology rarely considers how to integrate women and the disabled. But this week’s expo changed my views on that.

Firstly, as an outsider, don’t be fooled by the ‘AV’ (audio visual) in Integrate ‘AV’ expo—there was some stunning AV, but this expo captures something more. Integrate explores the

borderlands of where people and technology meet, thus giving us a window into the future of this industry. It was a week ripe with inspiration and opportunity for anyone from any background... so long as you weren't a woman.

Don't think being a female in this industry is a disadvantage? Ask me how many times I was asked to "Get us a coffee will ya, love?" at Integrate. Ask me how many times I was asked where my husband was. Ask me how many times I was looked over in the Integrate Q and A sessions. Then look at the figures for how many women are in the STEM (science, technology, engineering, and mathematics) field, and how much they get paid when compared to their male colleagues. Women are significantly disadvantaged in the STEM field when compared to men. Not only are we under-represented, our experiences in the field, whether on worksites or presentation podiums, are often discouraging.

However, the tide of sexism is turning. Not only did Integrate put on another flawless and exciting expo displaying future trends of our industry, they are actively working to reduce the gender gap in STEM. Their partners in this venture are CEDIA and AVIXA. Both are authorities in the AV industry. Both provide training and certification in this industry. Both are bound by a code of ethics that includes inclusivity.

Tech Girls are Superheroes (TGS) is an organization that works to engage girls in STEM. AVIXA invited the founder of TGS, Doctor Jenine Beekhuizen, to speak at the women's breakfast. Dr Beekhuizen was deeply inspiring in both her energy and her words. The work TGS is doing, and the impact that TGS is having worldwide, promises a bright future for women in technology. Indeed, many of the women at the breakfast were visibly moved by Dr Beekhuizen's words. The room was lit up with hope. As coffee flowed, so did the excited hum of women connecting and energizing each other.

The power of recognition and connection can never be overestimated. It is incredibly powerful and revitalising to be in a room amongst people who are navigating the same challenges that you are. AVIXA's Women's Breakfast was no different. Even just sitting among these women was inspiring. As I reached out and spoke to various members and listened to their stories of hardships and successes, I was reminded the tide of sexism is slowly turning. Women are out there in the industry, working in any number of roles, achieving and succeeding. This progress is in part thanks to organizations like TGS, AVIXA, and CEDIA. Not only because they are lobbying for greater equality and equity, but they also understand the importance of simply bringing women together.

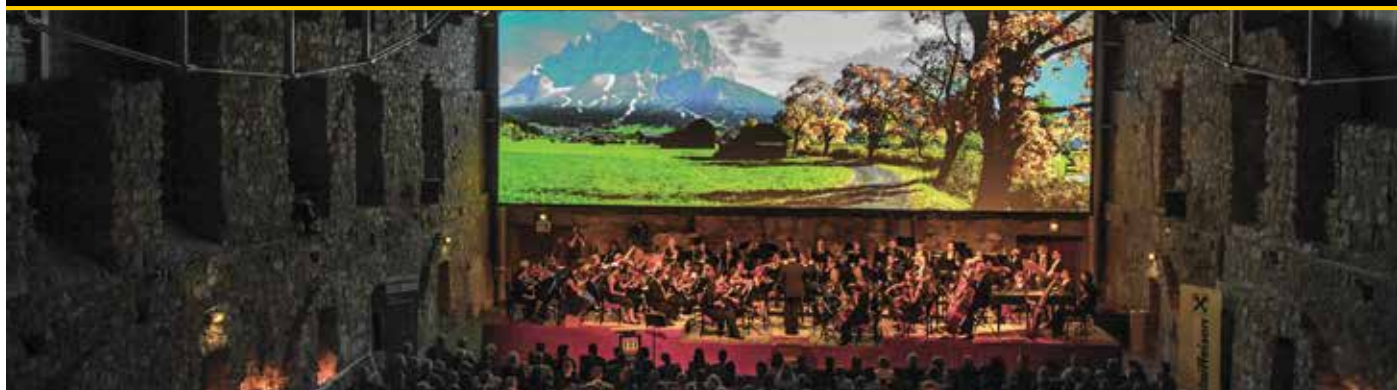
When Dr Beekhuizen invited the room to get involved with TGS and work as mentors, the whole room surged forward. Everyone was eager to help in any way they could. In response to Dr Beekhuizen's leadership, the whole room was ready to lift other women up, to smash through the binds of patriarchy, and show young girls that if they can dream it, they can do it. Connection is our key to the future.

Integrate is a fabulous opportunity for industry and industry partners to come together to explore the cutting edge of our industry. Through forging these new partnerships, we will bear the technology of the future. And while gender is still a pressing issue, it was heartening to see it being tackled head-on by someone such as Dr Beekhuizen as supported by Integrate. Both are courageous and necessary leaders in the field, and both understand the importance of bringing likeminded people together, even us outsiders, because it's in these collaborative spaces that the magic of change happens.

Dr. Catherine Wolf of Hidden Technology wears many hats, including office management and freelance writer. But no matter how many hats she wears, her passion for stationery will always be foremost in her heart.

PERFECTION IN PROJECTION SCREENS.

MOBILE. ROLL UP. FIXED FRAME. CUSTOM.



IMPROVE YOUR WAY OF PROJECTING.

AV Stumpfl Projection Screens feature unequalled design and manufacturing precision. Lowest total cost of ownership, European manufacturing precision and best picture quality.

With AV Stumpfl specialists at each of our offices, you can contact your local Show Technology team to discuss your projection needs, email sales@showtech.com.au.

Discover the latest AV Stumpfl products at www.showtech.com.au/avstumpfl



THE ELECTRIC CANVAS

White Night Reimagined

by Jason Allen

The Royal College of Surgeons



The Forum Theatre

Visit Victoria’s popular festival White Night Melbourne was ‘Reimagined’ in August 2019 from a one-night, all-night event in summer to a three-night festival in late winter. Peter Milne, Managing and Technical Director of creative projection company The Electric Canvas spoke to CX about what it takes to get 10 major projection sites up and running, from design to delivery...

2019 looks to be the last year for White Night Melbourne in its current stand-alone form. The festival will be absorbed into the yet-to-be-named mega winter event that will also incorporate the Melbourne International Arts Festival and Supersense. The Electric Canvas has been closely involved with both White Night and the current producer David Atkins Enterprises for years. 2019 has been confirmed as the final year that David Atkins Enterprises will helm the event.

Preparation

“For an event like White Night Reimagined, our preparation starts around five months out,” said Peter Milne. “This year was a little different due to change of format, but it’s our third year working with David Atkins as Artistic

Director and Executive Producer. Our first conversations with the producers were about the projection at the NGV, which we’ve done a

number of times, and slowly our involvement grew from that to 10 sites, some ambitious, and some new to us. The preparation involved site survey work including LIDAR scanning and modelling, projection testing carried out by our Melbourne office, and lots of CAD and technical design. All of this helps us scope out the sites and informs the creative opportunities.”

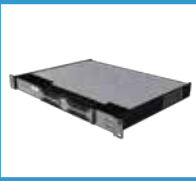
Content Creation

Developing content for each site specifically is a creative process that focuses on themes, the duration of each performance, the dynamics of the piece, and how the audience will experience them in their journey from site to site. Most of the content The Electric Canvas used over the festival was created in-house.



Harry Potter and the Cursed Child at The Old Treasury

Video



**Brompton
S4**



**Brompton
SX40**



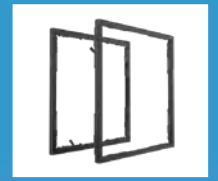
**Brompton
T1**



**ROE
CB3**



**ROE
CB5 Airframe**



**ROE
Strip**



**Brompton
Tessera XD**



**Barco
F80 - 4K12**



**Barco
UDX - 4K32**



**Disguise
4x4 Pro**

Lighting



**MA Lighting
GrandMA 3**



**Ayrton
Diablo**



**Clay Paky
Sharpy Plus**



**GLP
JDC1 Strobe**



**GLP
Impression X4 Bar 20**

Rigging



**Wahlberg
High Speed Roll Down**



**Wahlberg
Winch 25**



**Wahlberg
Winch 50**

Audio



**L-Acoustics
P1**



**L-Acoustics
X4i**



**L-Acoustics
SYVA**



**Riedel
Bolero**

World class equipment available across Australia.
+618-8352-0300

novatech

'Mad Max: Fury Road'

A huge multimedia extravaganza featuring footage and actual cars, trucks and bikes from the movie, 25 performers, aerialists, lighting, fire, and pyros, plus an immersive multi-channel soundtrack, 'Mad Max Fury Road' was one of the most technically complex and physically enormous events at White Night Reimagined. The heritage-listed REB was LIDAR scanned in order for the creatives to work using a combination of 2D and 3D techniques, making content that sometimes supported the performers, and sometimes was the focus of the show. Seven Christie Boxer 30Ks mapped the

content from Modulo Kinetic servers, which played out eight tracks of audio, as well as timecode. Lights (designed by Mark Hopkins) and pyro followed the timecode, and the eight-channel immersive audio was powerfully amplified by a distributed Meyer Sound system from Norwest, including hidden prac speakers in the cars. The Electric Canvas's Peter Janusz ran media, Resolution X's Chad Spencer programmed and operated the lights from a grandMA2, Rowan Thornton fired the pyros via an LSC Clarity, and Roy Jones of Norwest handled audio from a Yamaha QL1.



The Doofwagon



Peter Janusz



Roy Jones



The Doofwagon

"It was our content on most of our 10 sites," elaborated Peter. "We have a content creation team of 16, including four permanent art staff. Most of our contractors have worked with us for many years. The 'Deadly Questions' piece at the NGV was pre-existing pieces to camera of Indigenous Victorians responding to a selection of frequently asked "deadly" questions, which we combined in a creative way with artwork by Indigenous artist Marlene Gilson. The 'Mad Max Fury Road' event at the Royal Exhibition Building used footage from the Fury Road movie, to which we added architectural and expressive elements to support the live performance. All of the content considers the audience; not just the theme, but also where they are, how long for, where they are coming from, and where they're going."

Tools of the Trade

The most common software tools used by The Electric Canvas's creatives are Maxon's Cinema 4D and Adobe's AfterEffects, with some assistance from Adobe's

Photoshop. Each designer typically has their own collection of personal plug-ins that suit their workflow. How the content is eventually rendered for projection depends on what style of projection is being used, and which media server is best suited to handle the show. It could be 2D, 3D, or a combination thereof, point-of-view, or a 3D model. Considerations of budget, lead time, and appropriateness to the site also influence the choice. "Our preferred media servers are from Modulo Pi," reported Peter. "They're a French company established in 2010, and their server software has been used on many major events and installed in many museums and galleries.



They make two excellent, solid platforms – the Modulo Player, which is cue-list-based, and Modulo Kinetic, which is timeline-based. We have a large stable of Modulo Pi servers, with 30 channels of Modulo Player and 30 channels of Modulo Kinetic. We also have 30 channels of Dataton's Watchout."

Projectors

The Electric Canvas put their trust in Christie projectors, which were found on most of their sites at White Night Reimagined. "We have nearly 100 Christie projectors in our stock with outputs of 20K or more," Peter disclosed. "We recently added some laser phosphor

'Sensoria' – Dept of Education Building, Treasury Place.

12 x 25K Christie Crimson Projectors (Laser) - Total approx. 7000x1900 pixels

Modulo Kinetic Media server system delivering 12 channels of video plus 2 channels of audio

3D Model and content workflow

Visual content and soundtrack by The Electric Canvas

Artistic direction by David Atkins



‘Mad Max Fury Road’ – Royal Exhibition Building

7 x 30K Christie Boxer Projectors
 – Total approx. 9000 x 2000 pixels
 HD-BaseT signal/network transport
 Modulo Kinetic Media server system delivering 7 channels of video plus 8 channels of audio plus Timecode for Lighting sync
 100% live backup for server system
 3D Model and content workflow

Visual content by The Electric Canvas
 Film assets provided by Warner Bros
 Created by Director George Miller and Producers Kennedy Miller Mitchell
 Artistic direction by David Atkins
 Staged and Choreographed by Jason Coleman
 Music composed and arranged by Dave Pierce

models, which we used on the Department of Education site. We also utilised some mercury lamp 30K projectors that we acquired for the Commonwealth Games. Of course, you can’t mix different lamp sources on the one site, so there’s a management process to allocate the correct projectors and lenses to each location.”

After bump-in, a few days before opening night, all equipment stays in-situ until bump-out. As this means there’s a lot of sensitive, expensive electronics out in the extremes of climate. The Electric Canvas has developed a number of techniques and strategies to keep the gear safe and reliable.

“We’ve had many years’ experience with installing projectors in all sorts of climates and conditions,” confided Peter. “For example, most of the gear running on White Night has just come out of a winter installation at Sovereign Hill in Ballarat, which is notoriously cold and dusty. There, we have the gear in weather-proof enclosures with chassis heaters for the projectors, along with filtered ventilation so we don’t suck in ice crystals and frozen dust. At the other extreme, concurrent with White Night, we have a large deployment of our gear at the Singapore Night Festival. Video projectors and servers have to be well looked after; they’re all on UPSs, and some are running off generators. We’ve learnt a lot of lessons over 23 years!”



The Electric Canvas

creative concept development •
 technical design • content production •
 complete on-site technical delivery

SYDNEY
+61 2 9417 2077

MELBOURNE
+61 3 9338 8198



Peter Janusz
 Manager & Technical Director
 TEC Melbourne

Transforming places and spaces with images and light since 1997.

Australia’s most experienced authority on architectural and large-scale projection is thrilled to announce the opening of our Melbourne office and warehouse.

Contact us to discuss your projection needs for your next event.





Best AV for a Production or Event
 2018 Commonwealth Games

theelectriccanvas.com.au

Crewing

White Night Reimagined ran from Thursday 22 August, finishing in the early hours of Sunday 25 August. The crew were loading trucks the week before, and were onsite from the previous Saturday, setting up before rehearsals and tech runs starting on

Challenges on the Ground

With every site offering a different technical challenge, which ones stood out as noteworthy in 2019? “The Department of Education at Treasury Place was an interesting one,” Peter related. “The challenge was that the projectors were



‘Where Do Books Come From?’ – State Library of Victoria, Latrobe Reading Room

8 x 30K Christie Boxer Projectors
– Total approx. 8600x2000 pixels

Watchout 6 Media server system delivering 8 channels of video plus 4 channels of audio

3D Model and content workflow

Visual content and soundtrack
by The Electric Canvas

Artistic direction by David Atkins

the Monday. It’s a physically challenging production, with 55 projectors in towers across 10 sites. “We usually provide our own scaffold towers for accuracy and stability,” explained Peter, “but this year, for practical reasons, we utilised third-party providers, which reduced some of the physical effort on our part. During the event, there were 11 of us around the sites. Most sites could be automated, but there has to be provision for the activation of emergency messaging, which is a mandated safety requirement for large public events.”

quite close to the 80 metre wide façade, but we had to take into account that there were two audiences; one no more than 10 metres away, and another distant in Treasury Gardens. It came down to a combination of content, projectors, and lenses. Lenses aren’t that much of a concern, but lens manufacturers only guarantee accuracy of plus or minus 10%, which is a lot on a building at that distance with short, fixed focal lengths. It took some testing on-site to confirm that we were good for coverage. At the Royal Exhibition Building for ‘Mad Max Fury Road’



‘Story Tree... Bundjil Creation’ – Carlton Gardens

2 x Christie Roadster 20K projectors

Modulo Player Media server delivering 2 channels of video plus 2 channels of audio plus Timecode for Lighting sync

POV tree mapping

Projection content by The Electric Canvas

Production design and puppetry
by Balooa Entertainment

Design and story consultancy
by Deanne Gilson

Voice-over by Marlene Gilson

Story consultancy, song and voice-over
by Barry James Gilson

we made sure we did an onsite test in order to manage expectations of brightness and resolution. Cinematic content can appear a lot less bright when projected compared to graphic content, and the whole piece also had to consider the large vehicle props, the performers, lighting and pyro, so we wanted the producers and stakeholders to witness the tests.”



‘Deadly Questions’ – National Gallery of Victoria

10 x Christie Roadster 20K projectors

Watchout 5 Media server system delivering 10 channels of video plus 2 channels of audio

Visual production by The Electric Canvas

Film assets provided by Aboriginal Victoria

Original artwork by Marlene Gilson

Music by Stephen Oakes, Vocals and Lyrics
by Barry James Gilson

Artistic direction by David Atkins

Produced by DAE White Night, Aboriginal Victoria and the Victorian Department of Premier and Cabinet

COLOUR QUALITY IN PROJECTION

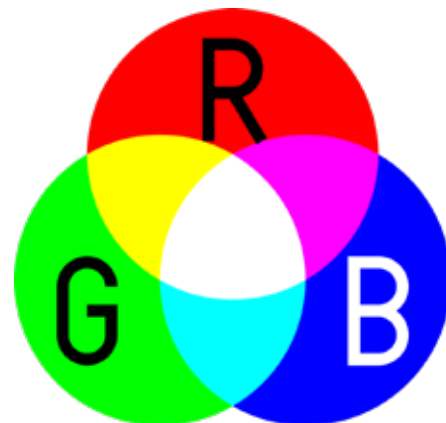
by Simon Byrne

As you are no doubt aware, all the colours we perceive are a mixture of three primary colours - red, green, and blue. The human eye has three types of colour receptors called cones that are conveniently sensitive to the redder, greener, and bluer wavelengths.

Talking of wavelengths, different colours of light, are simply light at different wavelengths. Red being the longer wavelength of approximately 670 nanonmetres, green approximately 540 nanonmetres, and blue being the shorter at about 470 nanonmetres. This is termed the RGB Colour Triple.

The RGB colour triple is correct in all technical aspects, but it has a couple of practical disadvantages.

Televisions, computer displays, and projectors produce colours by combining the red, green, and blue light in varying intensities. The resulting mixtures in RGB colour space can



Red, Green and Blue mix to make any colour


reproduce a wide variety of colours. However, the relationship between the amounts of red, green, and blue light and the resulting colour is unintuitive, especially for inexperienced users.

There was an even bigger challenge though. The main driver for a different colour model was in the early days of colour television. A way had to be found to broadcast the colour transmissions without making the millions of existing black and white televisions redundant.










Enter the HSL colour space which stands for Hue, Saturation and Lightness (or Luminance).

AVATUS

the exceptional IP console





AVATUS from Stage Tec, the exceptional IP console. Now being demonstrated in Australia for the first time.

P | +61 2 8011 0500
E | info@tm-systems.com.au
W | www.tm-systems.com.au

bringing technology together

Hue is the value of the actual pure colour, such as Red, Green, Blue, Yellow, Purple and so on, as represented on a colour wheel. The value is in degrees, from 0 to 360.

Saturation is how much of that colour is present in the mix. It's a percentage scale, from 0% to 100%. 0% saturation outputs a dull grey, meaning there's 0% of your hue in the mix.

Lightness is again a percentage value, from 0% to 100%. 0% means it's completely dark, in other words— pure black. 100% is, well, pure white.

The HSL colour space was invented as the method to add colour encoding to existing monochrome broadcasts, allowing existing televisions to receive the new colour broadcasts (in black and white) without modification, as the luminance (black and white) signal is broadcast unmodified. It was used in all major analogue broadcast television encoding and is in all major digital broadcast systems.

Conveniently, the HSL model is a more intuitive way to find colours. One of the main advantages of HSL over RGB colour is that complementary colours are located across from one another, which makes the whole system very intuitive.

Why am I boring you with this? Because the HSL model is also the foundation for describing the range of colours a display device is capable of, which is called gamut.

The term 'colour gamut' refers to the range of colours a device can reproduce - the larger or wider the gamut, the more rich saturated colours are available. As colour gamuts become smaller it is generally these rich saturated colours that are the first to suffer, a phenomena referred to as clipping.

Display devices like projectors have gamuts or ranges of colour they can reproduce. So in order to accurately display your images you would ideally like your display gamut to be at least as large, if not larger, than your source's gamut, otherwise clipping will occur.

A lot of things can affect a display device's gamut, the most important of which is the light source. All light is a mixture of colours and from this, you can derive a spectrum. Think of it as the frequency response of a light source. By way of example, daylight is very wide and even in its spectrum. A flame has lots of red in it, but not much in the blue range, and whilst fluorescent lamps produce 'white' light, it is terrible because their spectrum is so uneven. If a projector has a poor light source, the colour gamut by definition will have to be poor.

Generally speaking, it is a challenge to produce technically pure red, green and blue from most light sources. This in turn leads to a compromised colour gamut. The closest thing we have to pure light sources are lasers.

Therefore, the gold standard for projector light sources are RGB lasers. With precise,

individual red, green, and blue lasers, these projector illumination sources can dial into specific colour patterns for visuals that nearly match the perceivable colour spectrum of the human eye without sacrificing brightness or adding moving parts.

This is because the three RGB laser light sources are highly collimated and pure. It is the purity of the light that results in highly accurate colour mixing and therefore a wide, accurate gamut. Yes, they are bigger, they are heavier and run hotter. And yes they are the most expensive. But for the most part they are no-compromise in performance and maintain brightness and accuracy over their lifetime. If you need perfect colour matching, you can get it. If you need absolute colour accuracy, assuming you have the proper instrumentation, you can get that as well.

There is another category of laser projector, Laser Phosphor. Laser phosphor also use laser diodes as the light source, but the way these projectors make use of that light are very different.

Laser phosphor uses blue laser diodes only. To generate the necessary red, blue and green colours, the blue light from the laser diodes shines onto a spinning wheel that is coated in a phosphor compound. The laser light excites the phosphor and produces yellow light. The yellow light is then split into red and green using a dichroic filter while the blue light passes directly through a diffusion segment in the phosphor wheel.

The separated red, green and blue colours are then sent to an imaging surface like a DLP or LCD chip, which then sends the light through a lens and onto the projection surface. Since laser phosphor eliminates the need for traditional lamps, the major benefits include reduced consumables, lower maintenance and reduced downtime.

Due to their efficiency and lower heat generated, there are now single chip DLP projectors delivering well above 10,000 lumens brightness. They are generally about half the weight and size of their equivalent 3-chip brothers but they do lack in colour performance compared to a RGB 3 chip laser system. For a single chip device with sequential colour to have high brightness there is a lot of processing behind the scenes that have to do with the way our human visual system interprets and processes images.

There will always be a trade-off between colour and brightness and the processing in many cases is making decisions about which of the two is more important. Therefore, changes are occurring based on these decisions at the individual frame level, perhaps up to 60 times a second.

Projectors with traditional lamps as light sources will often have the poorest colour gamut. This is because the lamp spectrum is not as pure or stable as the laser sources.

Also a lamp's spectrum and brightness change as they age, further degrading their gamut.

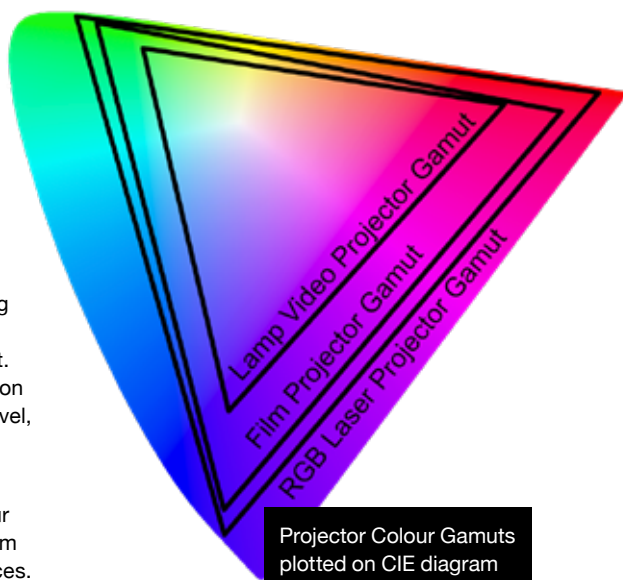
So how do you interpret gamuts? Gamuts are plotted as a triangle on a CIE Chromaticity Diagram. A CIE Chromaticity Diagram represents the mapping of human colour perception in terms of two CIE parameters x and y. CIE stands for the Commission internationale de l'éclairage (CIE), a 116 year old organisation that creates international standards related to light and colour. This is a highly complex topic which is way beyond this discussion (and frankly...me as well!). But you can be comfortable that a device's colour gamut can be plotted as a triangle on top of a Chromaticity Diagram and comparisons can be made. It is quite simple, the colour inside the triangle will be displayed faithfully, and those outside will not, and potentially clip.

Every display device can only represent a region of colours from the perceivable colour space and will be shown as a triangle of varying size on the CIE Chromaticity Diagram. Laser sourced projectors have the widest gamut (and therefore shows as the biggest triangle), traditional film is also very good, and lamp based video projectors are not quite as wide.

If a source's gamut is bigger than the display device's gamut, clipping will occur. As a result of this, Hollywood movies producers grade their movies depending on their final destination. Movie theatres with RGB laser projectors are capable of displaying the widest gamut, so a version to take advantage of that is graded for those, whereas home theatre's gamut is much less so versions are graded with a smaller gamut so as to ensure clipping does not occur.

A spectacularly good tutorial on colour science has been done by Dominic Glynn, a colour scientist at Pixar films. I recommend it if you want to improve your understanding of how colours interact. Check it out!

khanacademy.org/partner-content/pixar/color



RIVER OF LIGHT

by **Cat Strom**



A highlight of last month's Brisbane Festival was the free illumination spectacle River of Light held on the Brisbane River.

The 10-minute show ran three times a night for the duration of the Festival and included dynamic jets, giant spirals of water, full-colour lighting, rainbow-coloured lasers and incredible story telling via projections.

Following the phenomenal success of the 2018 telling of a Dreamtime creation story of the river – seen by almost 500,000 people – this new local story was again told by Yuggera and Toorabul man Shannon Ruska working with

Oracle-Liquid. This year Ruska and Oracle-Liquid told the next chapter: the arrival of Europeans.

Oracle-Liquid has earned a reputation as one of Australia's leading creators of water theatre spectacles involving fountains, lighting, lasers and projections. They design and manufacture high quality fountain technology, laser show equipment, water screen displays, turn-key automated installations and high impact stage performance technologies.



THE LOOK

DRAPE HIRE
www.thelook-sydney.com

New Address: 17 Greenfield St Banksmeadow NSW 2019
Email mail@thelook-sydney.com • Ph 02 9797 6068 • Fax 02 9798 9243



All the gear for River of Light was supplied by Oracle-Liquid except for one key piece of gear that they do not own - a projector.

"When we need video projection we usually hire the gear and of course we put that in the quote," explained Glenn Turner, Director of Oracle-Liquid. "You're talking considerable costs for video projectors which often is outside the client's budget and so we decided we had to get creative or lose the job."

On a mission to work out a way to project full colour imagery without using costly video projectors, Glenn and his team found a solution with Claypaky Scenius and custom glass gobos.

"Once we've sourced and edited the images, especially to the correct colouring for use in a lighting fixture, we get the glass gobos made," added Glenn. "We put them in the Scenius and then when we project them, we move

them and use the pan and tilt, oscillate, rotate and all those functions of the lighting fixture to make it look like it's a moving image. For example, a boat sailing along the waves rocks back and forth as well as moves from left to right and gets smaller as it sails away. All these parameters require many fixture functions to trick the audience into thinking that they're watching video"

The gobos were rear projected onto the fountains which were uplit by 140 submersible LEDs.

"The reason why we have four Scenius is that they can only take six rotating gobos, which makes it quite hard to create a show," said Glenn. "We had two water screens with two Scenius projecting onto each screen and that gave us 12 gobos per water screen, which is tricky for a 10-minute show where you're telling a story."

Twenty no-name Chinese beam and wash fixtures also had gobos which could be used to fill in gaps, as do the lasers. The story was occasionally transitioned into a dancing fountain, light and laser show, which not only made the story telling entertaining, it also allowed for a more theatrical experience.

"We purchased the Chinese fixtures because they're exposed to water and salt air, and we didn't want to buy or hire expensive high end products and put them at risk," Glenn remarked. "We added domes and special filtering to them and that worked really well so then we decided to start moving into higher end fixtures. Having said that, the Chinese fixtures are quite impressive especially as they do both beam and wash. In fact for their price, they've been fantastic."

Also of note were eight Claypaky Sharpys which featured Oracle-Liquid's custom laser fixture on them. A favourite in many productions, the Sharpy Laser combines a Sharpy and a powerful 6 watt colour laser resulting in labour and logistics savings.

Control was by Oracle-Liquid's custom fountain software which also features a full 3D visualizing system in it allowing the team to program nearly the entire show in the studio beforehand.

"Then when we get on site it's just a case of plotting everything and adding the extra magic," said Glenn. "Before we had the visualiser, we would spend a week of long nights programming which was very tiring after you've spent weeks installing the system."

The whole effect was created by a floating rig weighing more than 25 tonnes, with music switching between styles to give the 10-minute performance pace culminating in a burst of colour and fanfare.



by Cat Strom

TRAVELLING LIGHT

Illuminart bring their projections to the people of South Australia

Illuminart are a team of artists who bring communities together to experience after-dark light shows through permanent projections and temporary installations. Their mission is to bring the art of storytelling to light and to bring people together to share the experience of stories created about their own local place.

Their latest project is Travelling Light - touring projection art and storytelling around regional South Australia in Moby, a bus that has been restored and kitted out with high-powered projectors. As part of SALA (South Australian Living Artists Festival) they covered SA in a 4,000km round trip, sharing projection art storytelling with South Australians in 17 towns from Ceduna in the west, to Mount Gambier in the south east.

Silos, town halls, or large walls were each illuminated for a single night, with bold moving image artwork and stories collected over years of preparation for this touring production. The projections and stories changed for each location but all showcased animation about South Australia's maritime and coastal heritage and shared stories about regional communities, created by animators and artists from around South Australia.

"Our tour is helping to bring some excitement and happiness to people in winter time," said

illuminart director Cindi Drennan. "We aim to bring people together for a short burst of bright, colourful and invigorating creativity, combining history, humour and warmth, and celebrating creative storytelling. It has been the perfect way to bring communities together to share stories and heritage, and discover new things about their region."

Presenting in August meant that projections could start as early as 6 PM, enabling children to attend as it is billed as an all-ages family friendly event.

"We found that we get small audiences in the summer as it's too late for young children," added Cindi. "We also wanted to showcase that we're presenting moving image art, rather than movies, so we felt that to present during SALA put this in the right context for our artwork. As August can be chilly, we only run the show for an hour, which is enticing people

to rug up and be adventurous as they know they'll be home before 8 PM. We have had really good attendance everywhere, and great feedback and appreciation for bringing this tour to regional people."

Projection sites on the tour ranged from the very wide, such as the side of a town hall, to the very tall such as a lighthouse - with aspect ratios ranging from 3:10, to 10:3. With such varying proportions it was essential for the team to create content that would work in all cases.

"Creating narrative that was translatable to every single site was part of the challenge when we began working on the project," said Cindi. "So we developed a content production methodology that makes our storytelling projection work effectively on a huge variety of landmarks, and it has been very successful."

High-end projection mapped events in Sydney and Melbourne usually have at least two or three days to set up the projectors, getting them perfectly aligned and automated in their



Audio for Sport



Did you know that The P.A. People have been providing audio systems for Sporting Events for well over twenty years?

120 cabinets of Bose ShowMatch including Cardioid subs
Flown, ground stacked, tower lifter and Bose Cart options
Linea Research amplification | Yamaha consoles
Creative Audio monitor system

'STACKS AND RACKS' or COMPLETE SYSTEMS

Contact us to discuss audio for your next event!

Radios | CCTV | Wired Comms | Wireless Comms | SPL Net | Audio

papeople.com.au



purpose-built secure housing. These costs are a significant barrier for regional communities to be able to experience large scale projection.

“To make the production possible, we devised a system that enabled us to set up in half an hour,” said Cindi. “Our process had to be fast; show up, position Moby, aim the projectors, and have it very quickly aligned so the audience would not be waiting long for the show to begin. We streamlined the normal technical process down to hours instead of days, and we incorporated the ‘lineup’ routine into the show, explaining what we’re doing to the assembling audience. It’s really helped people appreciate the technological element to the show as part of the storytelling and overall experience.”

Although illuminart are well known for their permanent projection installations, their expertise has helped make Moby and the Travelling Light project possible as a new permanent projection touring system. By taking this approach, the team can arrive a mere two hours before show time and thus can visit many towns that cannot afford a crew and equipment for the usual multi-day set ups. This also enabled the team to put more of the budget back into the actual content creation.



“While we appreciate and value the technology and the power it gives to bring people together, the real legacy of these projects is in the narratives that are created, and these stories have a life long after the tour is over,” emphasized Cindi. “They will be part of a digital display that promotes all the towns and their unique heritage.”

“I’d say 99% of our content is done using Adobe products such as Photoshop, Premier, and After Effects. We also train others in these tools, as it’s not just our team that creates the animation. We also invite remote collaboration from the community, and we train regional creatives and employ freelancers. There must have been close to 60 people involved in this project as remote digital collaborators around SA.”

Illuminart installed 12,000 lumen Epson projectors and an on-board permanent projector rack for Moby the bus, providing safe projector travel and operation with tilting and panning options. There are sets of Epson lenses (wide, standard and zoom) for each projector.

According to Cindi, the Epson projectors have a great contrast range and were fantastic on the tour. As they use a laser light source, they can be mounted portrait as well as landscape providing perfect flexibility for the wide range of sites.

“Before a show a lot of site planning is done so we know exactly where to position the projection bus and which lenses will be used,” said Cindi. “We align to cover the object, so for example if it’s a very tall silo and we’re quite close, one of the projectors has to be tilted at quite an angle. Our standard set up in Moby involves two projectors, one above the other, in a flexible configuration. We arrive in daylight, set the projectors, open the window bay, point through and calibrate as the sun sets. We are usually picture

perfect within 15 minutes.”

The bus has a four-point jack system to overcome the normal suspension bounce that would occur as people stepped in and out of the bus during show operations. The bus also features solar panels with a large battery bank that allows a full time operational internet and mobile office system, alleviating many hurdles of remote and regional projects. The projectors can also run off the battery bank but usually are run off either local power or a 3.3 KVA generator.

“Although this is similar in process to guerilla projection, the expectations are higher, so preparation prior to the event is vital,” explained Cindi. “This may include getting lights on in the building turned off or streets closed. Our efficient same-day set-up process works so well because we do a huge amount of work and consultation in advance and have great local partners on board with us to ensure it’s a success.”



Being fast and self-sufficient means that the illuminart team can run the show with a tiny crew, making the large scale activation easier for the local partners and co-hosts to support. The benefits for the partners (usually regional councils) go beyond a free public event that may be attended by hundreds or thousands of people, to local opportunities (training, employment and exhibition), fundraising (as local businesses and charities step in to feed the hungry audiences) and local placemaking digital stories being produced that live on after the event.

Audio and music are integral to the digital stories and the events, helping to create the sense of presence and immersion.

“In addition to music and sound effects in our soundtracks, we like to include voices to help create a sense of connection and add to the opportunities for heritage interpretation,” explained Cindi. “We have a 1200w outdoor audio system and sound desk which is ideal for audiences of around 300, and add on to this for larger shows. We also tour with an MC microphone, four LED wash lights and fairy lights for a bit of fun.”

The tour is the culmination of illuminart’s multi-year Port to Port project, assisted by the Australia Council for the Arts and partners and sponsors including Flinders Ports, District Council of Streaky Bay, City of Onkaparinga, Arts SA, Country Arts SA, COTA and many regional towns and businesses over the five years since the project began.

NEW ZEALAND'S ONE-DAY A/V EXPO RETURNS IN WINTER 2020

ENTECH

ROADSHOW  GLOBAL 

Featuring the leading providers of

**AUDIO,
LIGHTING,
VIDEO & STAGING**

**DON'T MISS OUT
Book Your Space Now!**

For more information contact steve@juliusmedia.com



AUCKLAND
THUR 30 JULY
GRAND MILLENNIUM HOTEL



WELLINGTON
TUE 4 AUGUST
TSB ARENA



CHRISTCHURCH
THUR 6 AUGUST
TOWN HALL

www.entech-roadshow.com



Clipped Music Video Festival

presented by Digital Projection

Clipped.TV hosted its annual Clipped Music Video Festival in June as part of Vivid Festival, Sydney. This Festival showcases music videos produced by local talent with screenings, talks, exhibitions and a trade show for the industry, along with an awards evening.

To create an outstanding, visually memorable event, Clipped.TV required a selection of strong, high quality projectors with the ability to project music videos onto a large screen throughout the exhibition and awards. This included projection in areas with high ambient lighting, so projectors specified for those settings needed to have a high light output in order to avoid compromising image quality.

Event Installation

Endframe, the content and events production company responsible for production at Clipped, worked closely with Amber Technology to install Digital Projection's range of E-Vision, M-Vision and HIGHlite projectors across the exhibition and awards venues. Four projectors were chosen and installed to present the featured music videos using the highest quality projection, onto the largest possible screens.

Jack Crombie, event producer and technical director, Endframe said: "The duration of

Clipped Music Festival was only one day and the event space didn't include any AV equipment, so all installations were temporary with setup the day before. With this in mind, the projection equipment we used had to be versatile enough to setup within a short space of time, but not compromise on projection quality"

Each projector was selected because of its outstanding performance and colour accuracy. Amber Technology was able to provide a variety of solutions from Digital Projection, each specific to the individual requirements of different areas, from dark theatre style spaces to areas exposed to bright sunlight.

Projectors

The Clipped Theatre housed the Digital Projection 4K-UHD HIGHlite projector to show the evening's music video awards. With its remarkably bright 12,500 lumens, each music video was projected with ultimate clarity and precision. Developed with a fit and forget

directive, and a diverse selection of fixed and zoom lenses as well as an extensive lens shift, Endframe was provided with complete flexibility with HIGHlite projector placement to fit within the theatre space.

Digital Projection's M-Vision Laser 21000 projected a selection of Australian music videos within the exhibition theatre, while the E-Vision Laser 11000 4K UHD was installed into the international music video exhibition space. Both areas needed a flexible solution that could provide high quality colour to a large screen. Both single-chip projectors delivered stunning detail for the ultimate viewing experience.

The projector used in the cafe / bar and atrium area needed to be powerful enough to achieve outstanding colour performance in a natural light setting. The E-Vision Laser 13000 provided a compact, high colour performance solution delivering music video content without compromising image clarity.

Outcome

"We were very humbled by the incredible support Amber Technology and Digital Projection provided across the setup and during the event. The projectors selected delivered exceptional imagery and were amazing, wowing everyone at the festival," added Crombie.

"Digital Projection allowed us to exceed everyone's expectations and raise the bar for future Clipped Music Video Festivals."

Sometimes it all gets too much...



The *Support Act Wellbeing Helpline* is a free, confidential counselling service that is available to anyone working in Australian music who needs to talk to someone about any aspect of their wellbeing.



THE SUPPORT ACT WELLBEING HELPLINE IS MADE POSSIBLE WITH THE SUPPORT OF:

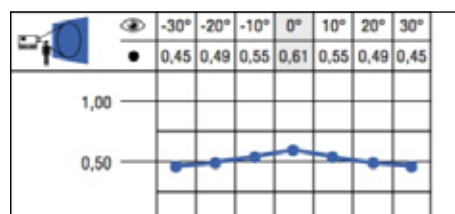


The perfect projection surface for blending applications

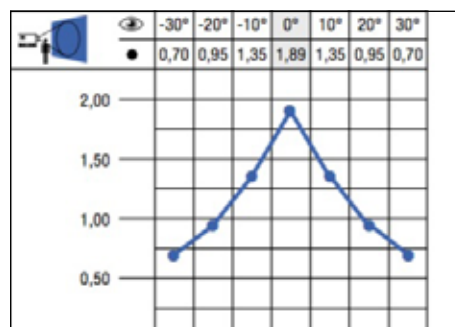
Is there an ideal projection surface for blended shows?

by Norbert Schmiedeberg,
Managing Director, ITI-Image Group

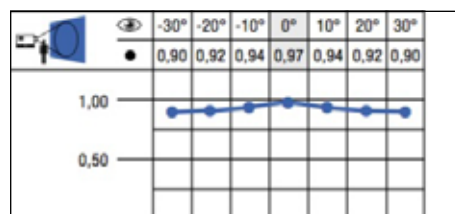
Front Projection



Gain and distribution of a Grey surface



Gain and distribution of a high-gain surface



Gain and distribution of Matt white

Front projection is easy. Most Matt White surfaces in the gain range between 1.0 to 1.5 are suitable for blending applications. However, high gain surfaces create problems, because their reflection angle is narrower and blending areas can appear darker, regardless

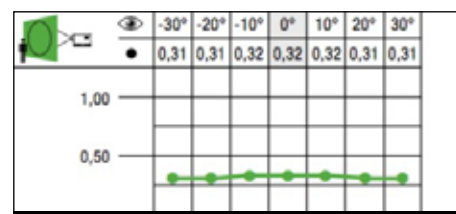
of the viewing position of the audience. A standard Matt White surface should have a viewing angle of 165° to 180°. This guarantees an evenly bright image from almost any viewing position.

On a curved screen, immersive (projection surfaces facing each other), corner projection, circular and dome projection, the Matt White surface may not be as ideal. The light hitting the surface is reflected back. But this reflected light may impact opposing surface areas and reduce the contrast and brilliance. Or the reflected light may increase the overall light level within the presentation space; an aspect often ignored and most critical if a very high screen brightness is desired.

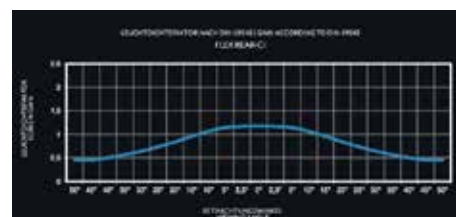
At ISE in Amsterdam we discussed this with Emanuel Zueger from VIOSO during the viewing of their dome projection. The projectors used were 6000 lumen units, but to create a better image and improve black levels, the light output was throttled back to 1800 lumens. This provided a very smooth image across the projected night sky, a particularly difficult subject, and more than adequate brightness for comfortable viewing. So highest brightness in curved and immersive environment may not be the most desirable.

To reduce cross reflection, the use of grey or black projection material has to be considered. Grey and black material absorbs light and increases the black level, while at the same time reduces the reflection of light on to opposite surfaces. Black dual material for front projection may also be suitable. But it must be considered that light travels through dual material in the front pro mode and may show up behind the screen on adjacent walls. In any case, cross reflection should be avoided at all cost.

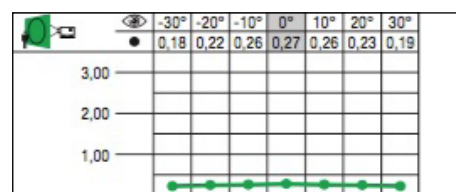
Rear projection: Dual Projection material vs normal rear projection PVC



Gain and distribution of a Dual surface



Gain and distribution of a rear projection surface - image courtesy AV Stumpf



Gain and distribution of Black

Dual material is designed for front and rear applications, and is coated to reflect light if used for front projection. But here we ignore the 'front' part and will focus on the rear part only. In general many Dual materials have a lower gain factor and a much flatter light distribution curve. This of course benefits the evenness of the projection and the blending. Some Dual surfaces have a lighter beige colour tint compared to the grey of standard rear projection materials. Standard rear projection materials usually have a higher gain and a more centre focussed light distribution, making them less ideal for blended projection.

“Essentially there are five core types of surfaces for blending projections: Matt White, Grey, Rear Projection, Dual, and Dual Black.”

The Projector

One of the most critical aspects lies in the projector. Not only can the light distribution vary considerably amongst ‘standard’ projectors with many units experiencing a light fall-off towards the edges, which makes blending already more challenging.

The use of wide angle and ultra-wide projectors can provide real challenges, in particular in rear projection set-ups. The very wide angle optical systems often have significant light drop off towards the edges. The way light travels through a projection surface makes this factor even more critical. It may be possible to adjust the light distribution within the projector system or the blending technology, but in general much consideration must be given to the use of such projectors in blended applications.

For best performance, the correct selection of the projection surface is vital for the best blending quality.

Hardware or software-based blending?

At the recent Integrate show we were asked about the benefits of both technologies and what to use in certain circumstances. Let’s have a look at some criteria which should determine the selection of the technology:

Convenience: Software-based systems are more convenient to use, in particular if camera-based auto calibration is involved. If the camera is mounted independently from the projectors and left in place, auto recalibrations can be easily performed by the press of a button with no other user interference.

Presentation environment: The installation environment can play an important role for the selection of a system. Projectors can get out of alignment simply by changing temperatures in the environment. Steel beams expand, timber changes during the day with the warming of presentation spaces, vibrations, user

interference, etc. So the issue of re-calibration needs to be considered and a software-based system may have benefits. However, if the environment is stable and controlled, hardware-based systems may provide a cost saving.

Format changes: Here the hardware-based system can have significant benefits, due to the easy switching between stored profiles. The system can be set-up for different presentation formats and saved in a separate profile. The profile settings can be accessed by RS232, for example, and integrated with the control system, allowing best use of the available projection area.

Flat, curved, dome: Flat blending surfaces are of course the easiest to handle. This changes dramatically for curved screen and dome applications. For the latter case, software-based systems with camera-based auto calibration make life so much easier. In respect of curved screens, the depth of the curvature, the diameter of the circle, and the projector type all must be considered, since alignment can take up considerable time. Software-based systems may have advantages.

One aspect which may have to be considered in the technology selection is the number of adjustment points. A grid of 17x17 or 32x32 points provides fewer adjustment and correction points than a software-based system, which can correct down to pixel level.

Why is this important? Various applications, such as high level 3D or simulation can require a very accurate correction to guarantee the perfect display. Consider that many curved projection surfaces are not 100% flat and that curved screens can have a belly or flat spots, which need to be corrected to avoid distortions. In simulation it may also be important to correct the eyepoint. Software-based systems can have clear benefits here.

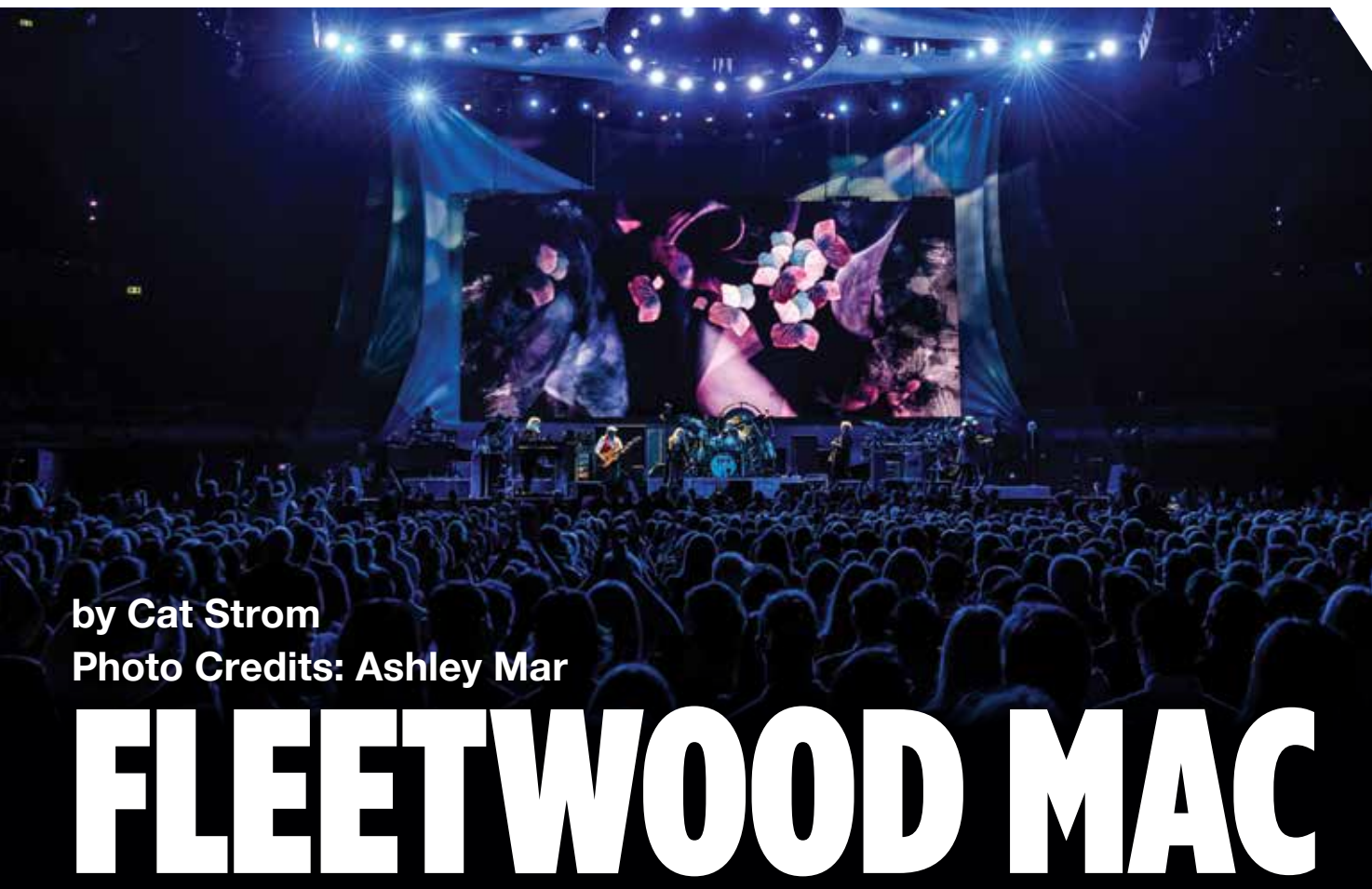
Versatility: A hardware-based system may

have some benefits, since changing the configuration or increasing the number of projectors or displays can be much more costly in software based systems. Another point is the easy doubling of the output with separate blending and image adjustments.

Cost: Hardware-based systems can be cheaper than software-based systems. Aspects, such as service, maintenance, cost of ownership, staff and support cost must be carefully considered. Each system has their own benefits and, in particular in a country as vast as Australia, access and support may influence the cost factor. Software-based systems, provided internet is available, allow Teamviewer support and remote service.

In summary, there are pros and cons for both technologies. But blended, large sized shows have something magical, and are worth the investment. Due to laser projectors with long service life and low ownership costs, blended shows should take a much greater preference in installations, from corporation to museums and other public display.

“One of the most critical aspects lies in the projector.”



by Cat Strom

Photo Credits: Ashley Mar

FLEETWOOD MAC

It's been all change in the Fleetwood Mac camp with Lindsey Buckingham replaced by Neil Finn of Crowded House and Mike Campbell of Tom Petty & the Heartbreakers, and their long-time lighting designer replaced by Paul Normandale who also designed the set and video content for the current tour. Apparently Mick Fleetwood went to a Coldplay concert designed by Paul and the rest is history. So, all you lighting designers out there, remember; you never know who may be in your audience.

Lighting director Fraser Elisha has worked alongside Paul since the 1990s, working on acts such as Coldplay, Shakira, Bjork, Scissor Sisters and Depeche Mode, and he enjoys the amount of input that Paul is happy to receive from him, saying "I actually really enjoy the programming side of things as well."

This tour was programmed by Chris Lose, with just the one song added since his departure. Chris, who has worked with the band for many years, had the luxury of three weeks of production rehearsals in Los Angeles.

A key consideration when designing lighting

for Fleetwood Mac is that they will not allow smoke or haze, so the lighting tends to be about lighting the band and providing colours. This is where 22 GLP JDC-1s come into their own.

"The rider asked for TMB Solaris Flares but here in Australia we have the JDC-1s," commented Fraser. "They give us movement without physically moving the lights. You can create colour and have shapes happening. It's quite a strange one as I've never done a show like this before. You have to build something quite pretty but without the advantage of haze and hence beams."

Paul has always been a fan of Martin fixtures and this tour is no different with 44 Martin MAC Viper Profiles, 16 MAC Viper AirFX, 12 MAC Quantum Wash, and 44 MAC Aura XBs.

"In Australia, we've had to use a mixture of MAC Aura XBs and normal Auras," said Fraser. "Martin MACs are always good and very reliable. The Auras do a nice wash whilst a lot of the Viper Profiles are used as key lights for the musicians whilst the Viper AirFX add colour."

The front and rear truss are angled slightly either side to embrace the stage with both trusses housing MAC Viper Profiles and AirFX. The front truss also has 17 Prolight Arena COBs, and 18 4-Lite Par 36 Blinders facing the audience. On the other side of the truss, facing the stage area, are some MAC Auras. The back truss houses some of the GLP JDC-1s facing the audience. Between these two trusses are eight PRG BadBoys, four of which are on PRG Ground Control Follow Spot systems.

A straight centre truss holds MAC Vipers and Auras and in the middle of this is a circular truss housing more of these fixtures plus JDC-1s. Above the centre truss are two sails which move a couple of times during the show and make an excellent projection surface. Occasionally, a large chandelier descends from the centre of the truss circle, as do decorative lamps.

The floor package is minimal with only four MAC Viper Profiles and a handful of Auras.

Fraser runs the show on two grandMA2 full size consoles with two NPUs and also has an MA2 light onstage as a tech console. PRG Australia provided the tour.

Video Director Jerry McReynolds, who is on his third tour with the band, was dealing with a large 13.8m x 6m Roe CB-8 LED wall as a backdrop which is softened by three separate scrims. Upstage and downstage are fabric scrims whilst the middle is made of netting. There are two side projection screens strictly Imag, with two Barco 20ks converged on each screen. Four Barco UDX U32 laser projectors, two each side, hang from the truss from where they can project onto the two different surfaces. The sails that move up and down are another projection surface with their UDX laser projectors to the side of the stage shooting upwards. A disguise d3 media server warps the content so that it fits the space. When the content on the LED screen matches and blends with the projection around it, the effect is quite stunning.

Jerry utilised four FOH manned long lens Sony HSC300 cameras, which run on fiber, five Panasonic AW-HE130 robecams, and four Toshiba POVs, for a total of 13 cameras to capture everything that needed coverage.

Paul Normandale and his team of 'Stevie's Angels' (Judy Jacob, Anna Boberg and Emma Bull) created most of the video content from scratch except for two pieces the band really

liked from the last tour which were updated.

Absolutely everything on the LED wall and scrim surfaces runs through a disguise d3 media server which sizes and manipulates content, and effects are done by Notch. All the stage projection is sized/warped by the disguise media server which in turn is triggered by the MA2 FOH.

Big Picture supplied the LED Screen and the projectors whilst NEP Screenworks supplied all the front end equipment such as mixers, switchers and cameras. Both are part of the NEP Worldwide Network.

This is the first Fleetwood Mac tour for veteran sound engineer David Morgan, although he has mixed for Stevie Nicks in the past as well as James Taylor, Paul Simon, Steely Dan, and The Doobie Brothers, to name a few. As David has been mixing for many legends over forty years, the band knew they could put their trust in him.

"We're all around the same age; we grew up with the same music, so I know what their songs are supposed to sound like," David said. "We're all old friends and as such, trust each other implicitly. We've actually had surprisingly few discussions on how I should structure the mix. Neil Finn has been a brilliant addition to the band - instrumentally, vocally and personality wise - and he's always upbeat and extremely easy to talk to."

JPJ Audio supplied the tour with a Clair Cohesion CO-12 PA comprising 88 CO-12, 8 CO-8 and 18 CP218 Subs. The band has been a Clair client since the Seventies and after a few decades, David is not changing anything.

"The CO-12 covers in a beautiful way with the sound distributing so evenly, I feel that nearly every seat sounds the same in the room, though we do spend a lot of time during the day to ensure that," added David. "The CO-12 throws really well and it's my favourite arena PA. Since their inception, line arrays have always done a good job of covering horizontally but not so much vertically, with the top cabinets sounding different to the bottom ones and a sweet spot in the centre of the rig. With the mathematical manipulation of the components within the Cohesion series, this does not happen."

David remarked that the Cohesion Series might possibly be the least complicated modern line array on the market, with component choices and design elements of the cabinet having far greater importance than the dedicated electronics that are built in to running it.

"I'm just so impressed by Clair's ability to knit high frequencies and mid frequencies together because that's always been a problem in earlier line arrays," he added. "It's so smooth. We can make a huge building like this sound like you're listening to the big monitors in

SILVER STAR
Professional Lighting

NEPTUNE SERIES

LED IP65 MOVERS
SUPER TOUGH, COMPACT, EFFICIENT!

SHOW
TECHNOLOGY

Find out more at www.showtech.com.au/showpro

SHOWPRO

ROADSKILLS

a studio control room. We try to sound as though we're playing back the records on a large, fat stereo system. I don't do the kick drum 30dB louder than the rest of the band trick that everyone seems to be hooked on. It's become a cliché. Personally, I've never heard a record where the kick drum is that much louder than the rest of the band. But I'm now 70 years old and it's become a "been there, done that" scenario for me. For this stellar vocal and instrumental band, we are far more interested in presenting a very high energy, yet still sonically accurate representation of the original recordings."

David was running a DiGiCo SD5 console with a Waves server, saying he's had nothing but good experiences since they separated the two platforms. Vocal, guitar and bass compressors are all Waves. If it's a musical instrument, it's going through a Waves plugin.

"The only outboard gear I carry is a Bricasti M7 reverb, which I love, dedicated to the lead vocal, and a TC Electronics 6000 with four stereo cards in it running guitar, piano, percussion and background vocal reverbs,"

remarked David. "I have about 100 inputs and I usually run the show at 97 – 103 dB (with peaks at 107-108dB) which sounds big and fat but won't hurt anybody. If you're really careful how you set up compressors and such, you can make 100dB sound like 108dB. You need to display subtlety and exercise mastery over your devices in order to keep things up in the mix, yet not dominate the arrangement whilst still leaving plenty of room for all the vocals. That's a benefit derived from 40 years of mixing."

In microphone world, Christine McVie sings into a Shure KSM8, Stevie Nicks and Neil Finn use Sennheiser e935s, whilst the background singers also use Shure KSM8s. Mick Fleetwood has a very traditional drum set up with Sennheiser 421s on toms whilst Taku Hirano is very modern with nearly all Earthworks mics on his various percussion instruments.

"We have a nice blending of old and new," said David. "The only unusual microphone we have is a personal mic of mine – a first-run Soundelux U195 on John McVie's bass

cabinet. I'm just in love with it. I could turn the DI off and I could easily get through a show with just that microphone. I've been using it exclusively for the past 10 years on bass cabinets."

For monitoring, the band use a combination of wedges (Clair 12AM, Clair ML-18, Clair R-4) and Shure PSM1000 IEMs with all the singers on IEMs, except for Mike Campbell who prefers wedges. There are two monitor engineers, divided up into boys and girls with Myles Hale on a DiGiCo SD10 doing the girls and Blake Suib does the boys on an Avid S6L.

"It's a great arrangement that has worked out really well," commented David. "We do sound check every day and as we have the luxury of having no support band, not a whole lot changes within the mix on any given night or any given venue. Our consistency is our main ally and therefore we can do very short sound checks, sometimes only 10 - 15 minutes and we're good."



David Morgan



Jerry McReynolds



"We have a nice blending of old and new."



IMMERSIVE LISTENING

by Andy Stewart

Sometimes it pays to push aside everything you think you know about audio, turn off the studio lights, the computer screen and your phone, and listen deeply to some of your favourite music. Setting aside time for your own listening pleasure is not only a must for your own sanity, it's a great way to recharge your batteries for upcoming productions and fuel your imagination. Some of the greatest insights into sound occur when you indulge in deep, immersive listening.

This is not a gimmick, by the way, nor is it a new-age hipster catch phrase for what everyone else would simply call 'listening to music'. No incense is required to be burnt during an immersive listening session, and it demands nothing of you apart from your full focus, for your own sake. Call it self-indulgent if you like, that's fine. In many ways that's exactly what it is!

Immersive listening is all about enjoying the thrill of listening to music again with no professional strings attached. One rule, however, is that it can't be something you've worked on yourself. It has to be music created outside your orbit.

What's awesome and inspiring about immersive listening is that, for many of us, the ritual teleports us back to the days when



STARTING, BUYING, SELLING OR RE-STRUCTURING A BUSINESS?

Julius Partners provide expert analysis, strategy, risk assessment and advice to new or experienced business owners.

Most businesses operate on less than 5% net profit, often with inbuilt risk that is hard to see from the coalface. Some re-structuring is difficult and needs careful management of teams and owner mindsets.

If selling, our fees are less than most business brokers. We can negotiate and refer to expert lawyers and accountants.

Operating a diverse variety of businesses since the 1970's, we offer complete confidentiality secured by a deed, and transparency in our dealings with you.



JULIUS PARTNERS

Call Julius on 0408 498 180 or email julius@juliusmedia.com juliuspartners.com

listening to music was our favourite pastime, not a job. Do you remember those days? The love of listening to music was something that got almost every one of us involved in this business in the first place. Indeed, I hardly know one person in this industry, be they a studio or FOH mix engineer, producer or engineer who didn't play in a band or have a favourite album that they rave about all night at parties.

Unfortunately, for many of us, our job, somewhat ironically, has largely replaced listening for pleasure as a familiar pastime, and that's a real shame. What's less obvious to most of us pros is that 'listening without pay', as it were – as quaint a notion as that may now seem to some of us – is also a hugely untapped well of insight into our incredible world of sound.

Diving Down Deep

You see, immersive listening is all about listening to something without distraction, preferably in a darkened room – even if it's your studio's control room – and letting your mind run free, so it's not something you can do with others present, particularly clients.

If years have past since the days when you listened to music for pleasure – before it became a career – then you're in for a real treat here.

What typically happens when you revisit this pastime now that you're a seasoned professional engineer, is that you hear with greater depth of insight than ever before. The experience can be mind-blowing because you now carry with you a capacity to hear with a tuned ear, both technically and emotionally, and this may be something you've not tapped into for years, in some cases. The insights gleaned from immersive listening can be profound, for you can now perceive the inner workings of another person's process – not simply hear a band playing a song. This insight allows you inside the mind of a fellow engineer's techniques, and in many cases inspires you to try them for yourself, or put on them your own spin.

I did this recently here at The Mill where I sat in the dark for several hours late one night listening to a piece of music called Immunity, by Jon Hopkins – an English producer/DJ/multi-instrumentalist. I'd only recently discovered this piece, and had quickly grown to love it.

There I was in the studio, with the lights off, my awesome Genelec 8260s in full flight with a sub, and Immunity playing over and over at a considerably high volume. I spent most of that night with my jaw on the floor, as the waves of insight and amazement crashed over me. It was incredible.

My insights into the Immunity piece have triggered a reawakening of techniques I've not used for years, others I'd forgotten entirely, and whole processes that have laid

dormant in me for far too long. Jon Hopkins's use of backwards audio, for instance, is truly inspired, his capture and repurposing of creaks and clunks into drum loops, from the mechanical sounds of pianos and pedal organs, quite incredible. His ability to craft noises and sound effects into pieces with seamless skill is breathtakingly musical, rather than 'tacked on'. His own deep insight into the power of filters to create mystery, depth and texture are all there to be marvelled at in astonishment, especially when you know what you're listening to and how it's put together. It makes the whole experience all that more fascinating, and pleasurable.

My hat goes off to John Hopkins for achieving greatness in this piece of music, and although I know everyone reading this has their own likes and dislikes when it comes to music, I would urge every producer and engineer out there to listen to Immunity, up loud, with the light off, and no distractions... I'd love to know what you think.

Reinvigoration

As you might have noticed, my most recent immersive listening experience has turned me into a 16-year-old Jon Hopkins fan-boy. But that's exactly the point of the exercise in the end. Listening deeply for pleasure's sake has countless benefits to every audio professional. It reinvigorates the mind, clarifies certain techniques in your own head, and inspires investigation into new ones. It triggers the imagination in countless ways, and rekindles a love of music and listening itself as a worthwhile pastime, not a chore.

Personally, I derive great pleasure from hearing the work of other people, who, like you and me, have sat in front of a pair of speakers for days on end somewhere out there in the world, to achieve great audio outcomes for others to enjoy. I'd like to think I do that for other people, too, of course, in some form or other, as do most of us reading this, but I can never enjoy my own mixes in the same way as others can. So it help me to listen to the work of others, if only to know that there are other crack-pots out there slaving away with filters and reverbs in the hope that others will enjoy, and can appreciate, their deep insights into what happens in the worlds between speakers!

So regardless of how you manage it, if you're a professional engineer, producer or mixer, I'd urge you – if you don't do it already – to dive deep into a piece of music that's not yours, and listen with focus and intent, for pleasure's sake, your own indulgence, and for the insights that may come your way as a bonus. You deserve it.



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



Advertising opportunity - CX December/January 2019

'THE RECORDING ISSUE'



If you supply any of the following, contact us now via jason@juliusmedia.com to advertise your product or service and get your editorial material published:

- Audio recording hardware or software • Microphones, processors, preamps, or any other part of the signal chain • Recording or editing services • Recording education
- Tech for recording other signals; DMX, automation, comms, or anything else!



Urgent

November 2019 'The Communications Issue'

Email us urgently via jason@juliusmedia.com to secure your editorial and advertising space.



Soon

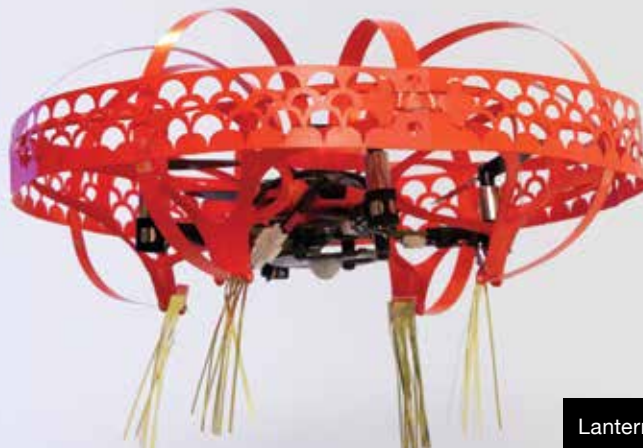
February 2020 'The Collaboration Issue'

March 2020 'The ENTECH Issue'

Book your space via jason@juliusmedia.com.

Drones in Drag

by Jenny Barrett



Lantern close up

Drones are not just busy conducting military strikes, spying on far off countries or, on good days, transporting medicine to isolated populations. They are also firmly establishing themselves in live entertainment. And we're not talking capturing footage. These days drones are getting in on the act itself.

Katie Cullen Montgomerie, Kiwi born and bred, is now Head of Marketing for Verity, the world-leading provider of indoor drone shows. Based in Switzerland, we caught up with Katie when she recently travelled home to give a keynote address at the Entertainment Technology NZ Conference.

From Flying Scenery To Drones in Drag

Verity's drones have completed in excess of 150,000 flights in over twenty countries and more than one hundred venues. The drones are more commonly used for special effects or a lightshow but in some instances Verity's costume designer Léa Pereyre gets the nod, and lo and behold you have a drone in drag.

Think lanterns. Picture eighty-eight micro drones flying over performers in red Chinese lantern costumes for China Central Television's New Year's Gala, the world's most-watched TV program with 1 billion viewers. The drones were choreographed to coordinate with LED screens, seventy dancers' movements and two famous Chinese pop stars. Or lampshades, "We started on Broadway in Cirque du Soleil's Paramour in 2016 with drones dressed as lampshades."



Paramour Cirque du Soleil 2016

Katie describes other recent work, "Our drones also feature in Andrew Lloyd Webber's Starlight Express in Bochum, Germany. Off land, our drones are used in five stage productions on cruise ships. We're yet to deploy costume drones in a permanent installation, but we did debut silver-painted drone guards on one of Royal Caribbean's ships. Nick Weir, Royal Caribbean's VP of Entertainment has been a fantastic advocate for Verity's drone technology and is always looking at different ways of using it."

Katie believes costume drones will soon be touring with productions too, "Tours are very challenging environments because everything needs to be loaded-in, loaded-out, transported and loaded back in every few days. Adding an extra element like drone costumes to this process requires careful thinking and clever design to ensure the costumes are robust and easy to handle. But we're not far away!"

Drone Choreographers, Drone Dressers & the Drones Themselves

The company generally works with the show designer to come up with a big idea, then the technical team plan every detail with the production manager. Next it is over to the drone choreographers to develop the flight patterns and lighting effects and lastly they work with the show's production team to provide live support.

Where costumes are required, the world's only dedicated drone costume designer creates the costume design in CAD software before laser-cutting the materials and assembling the costumes. The drones feature special guards that have pre-defined slots to easily attach costume elements, making it easy to quickly create large numbers of costumes and transform drones into moving pieces of scenography, props and even characters.

The company's flagship offering, trade named the Lucie micro drone, are ultra-light weighing only 50g each. They carry RGBW LEDs with 140 lumens on the white channel and each drone has a three minute flight time per one hour charge. Katie explains, "We've also developed a special charging station with ease of transport in mind. It's an all-in-one transportation, storage and charging solution within a standard flight case. Each charging station holds forty Lucie micro drones in five drawers. To deploy the drones, you take the carrying trays out of the drawers and place the trays on stage. Each tray holds eight micro drones, so it's easy for one person to deploy a reasonable number of vehicles quickly. After the show, the operator, usually a stagehand or freelancer, will collect the drones on the trays and place them back in the charging station."



Charging Station



Charging Station cased

Because of the Lucie micro drones' small size, they are very quiet, "This was one of the main concerns for Starlight Express as the drones are used in the Starlight Sequence, which is a very peaceful moment in an otherwise loud and energetic musical. But even in such a quiet scene, you can't hear the drones when you're sitting in the audience."

All the software, choreographies and hardware is developed by Verity in Zurich, Switzerland. And the software is impressive.



Australia's One-day AV Expo

ENTECH

ROADSHOW

ENTECH 2020 EXHIBITORS

HAPPY HOUR SPONSORED BY CHAMELEON TOURING SYSTEMS

ENTECH 2020 DATES

| | | | | |
|------------------------|---------------------------|--------------------------|----------------------------|----------------------------|
| PERTH THURS 5 MARCH | ADELAIDE TUES 10 MARCH | SYDNEY THURS 12 MARCH | MELBOURNE TUES 17 MARCH | BRISBANE THURS 19 MARCH |
|------------------------|---------------------------|--------------------------|----------------------------|----------------------------|

DON'T MISS OUT - BOOK YOUR SPACE NOW! EMAIL STEVE@JULIUSMEDIA.COM

If a motor were to fail on a Lucie micro drone, the drone would detect this, switch off its motors and land on the stage but for other drones such as the 1kg Stage Flyer drones deployed in Paramour on Broadway, Verity needed to be sure that no one would be injured by a technical failure. The engineering team developed 'Failsafe', a control algorithm that ensures if a motor were to fail, the natural spinning behaviour of the drone would be leveraged to maintain elevation and control. Verity's drones fly autonomously, so when a failure is detected, Failsafe automatically kicks-in and safely lands the vehicle on stage. During the run on Broadway, the Stage Flyer drones completed 398 public shows, including more than 7,000 autonomous take-offs, flights, and landings, in front of an audience of up to 2,000 people per show, all of them without safety nets. The system was entirely client-operated, with the theatre staff providing routine maintenance and the show's automation carpenter running all shows. Verity Studios provided maintenance services twice per year.

Equally amazing is how they manage the drones on cruise ships, "Most venues aren't moving while you're working in them but of course cruise ships are constantly in motion, so we had to develop special software to estimate the movement of the cruise ship to enable reliable drone flight inside these challenging venues. This is crucial for autonomous drones as they need reliable and accurate localisation data to fly."

One of Verity's most impressive new productions is 'The Effectors' on Spectrum of the Seas, a Royal Caribbean cruise ship. In 'The Effectors', the villain in the story, Crash, uses Verity's Lucie micro drones as his minions, and they swarm out over the audience to impressive effect, surging back and forth seemingly in response to the actor's waving arm movements.

Just a gimmick or here to stay?

Katie oozes enthusiasm for this technology and whilst admitting that "drone shows" in themselves could be a fad, she strongly believes that the versatility of drone technology will stop it from becoming a gimmick, "If you look at the technology as a way of moving objects, whether lights, scenery, props or characters, around in space, then there are endless possibilities."

Verity's drones are about to hit the headlines again with two large events taking place in September, along with a couple of smaller ones, all illustrating the versatility of drone technology, but only one of which Katie could talk about when we met, "Our drones

will perform in Season 3 of Apologue 2047 at the National Center for Performing Arts in Beijing." Produced by China Kingway and directed by Zhang Yimou, who also directed the opening ceremony of the 2008 Beijing Olympic Games, this cutting edge concept theatre explores the relationship between humans and technology, "The Lucie micro drones were dressed as plastic bags to symbolize the impact our consumer behaviour has on the environment. As you can see in the images, the drones melt away into the background and it appears the bags are floating, twisting and turning in the wind. There's so much potential with this technology, it's impossible to say where our creative clients will take us next!" The plastic bags costume came with its own set of challenges.

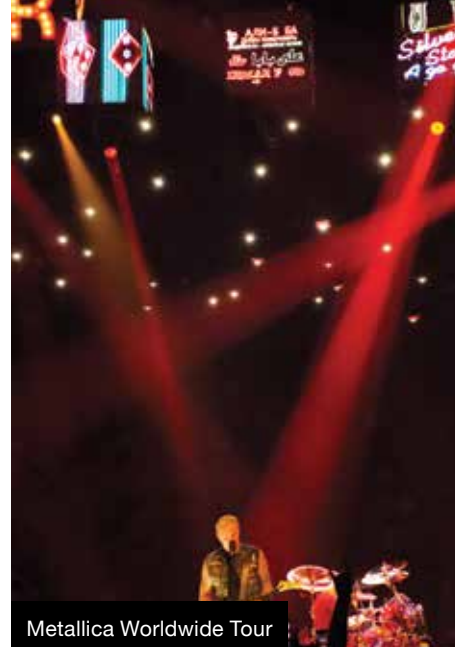
In Katie's eyes the key to embedding the drones' place in a show designer's technical arsenal is improving the integration of Verity's technology with the live events ecosystem, "When designers have more control over the technology, we believe they'll find myriad possibilities of using it creatively. In tandem, we're also working on new applications for our core technologies in live events. There's a lot of exciting stuff in the pipeline, so watch this space!"



Apologue

Coming soon to a place near you...or not

Metallica's 'Worldwide' tour, arriving in Australia and New Zealand in October, had incorporated ninety-nine of Verity's Lucie micro drones swarming around the band during 'Moth Into Flame'. Unfortunately the tour will be minus drones for the Antipodes due to it being a stadium tour and the drones being too light to be used outdoors. Back in 2017, this was the world's first autonomous drone swarm performance in a major touring act, "We collaborated very closely with TAIT on integrating the drones because they take off and land in stage lifts." Not to mention factoring in the 360-degree stage, the band, video projections and lighting.



Metallica Worldwide Tour

Since then other acts have caught on to the potential of drones for raising the stakes of a stage show. Katie herself saw Drake perform at Madison Square Gardens with Verity's Lucie micro drones, "It was a pretty special feeling seeing our technology on stage with such a huge artist. The drones have a presence that is hard to communicate with just pictures and videos; you need to experience it live."

Verity's drones are going to start touring with a new yet to be announced artist very soon, but in the meantime offshore is your best bet, "You" have to hop on the Majestic Princess Cruise Ship. Sadly, there is nothing in the way of costume drones down under as yet, but it does mean there is a big opportunity to be the first!"

For those wanting to get a bit more hands on, Katie was busy promoting Verity as a career avenue during her visit to New Zealand, "It would be great to have some more Kiwis and Aussies on board. We're always looking for people with experience in the industry, whether it be in sales, project and

stage management, or engineering. We're also always on the look-out for reliable freelancers." If that sounds like you visit <https://veritystudios.com/careers>



Katie Montgomerie

HILLTOP HOODS

by Cat Strom

Photo Credits: Troy Constable



Australian hip hop group Hilltop Hoods formed in 1994 in Adelaide, South Australia, and over two and a half decades later they are one of the country's most popular live acts.

In support of the release of their eighth studio album *The Great Expanse*, which debuted at #1 on the ARIA Album chart, the Hilltop Hoods have embarked on a world tour, playing in 14 countries across the globe. The Australian leg had them returning to play five capital city


headline shows, including two huge shows at Rod Laver Arena.

CX caught up with the show at Qudos Bank Arena where FOH engineer Andrew 'Muggs' Kelly, who has mixed for the band for over

ten years, utilised his favourite PA; a d&b audiotechnik J-Series comprising 18 J-Series mains and 14 J-Series sides over 20 SL-Subs, all processed on D80 amplifiers. Added to that were d&b audiotechnik M2 monitor speakers and d&b V8 for side fill. All audio was supplied by JPJ Audio.


"The d&b J-Series has the headroom, the cabinets have the grunt, and basically they surpass all other systems," he noted. "We used a fairly standard arena set up for that speaker system and it sounded great. Qudos Bank Arena is a really live room and my biggest

SHIPPING NOW




HELIOS TUBE
0.5 METER

- 8 Pixels
- 36 Watts
- 1.340Lm




TITAN TUBE
1 METER

- 16 Pixels
- 72 Watts
- 2.900Lm




HYPERION TUBE
2 METERS


- 32 Pixels
- 144 Watts
- 5.800Lm




MEET THE TITANS

DISCOVER THE COMPLETE RANGE OF THE TITAN TUBE FAMILY







100% Wireless



Up to 20 hours seamless runtime




IP65 waterproof housing



Astera App intuitive Control

ASTERA NOW AT ULA GROUP

1300 ULAGROUP | INFO@ULAGROUP.COM | ULAGROUP.COM





“The brief was to create a starry look within the arena.”

challenge is to get the band over the noise of the crowd; the Hilltop Hoods’ audience must be the loudest in the country! Fortunately the nature of the sound in this arena has a great response and it’s a good space to mix.”

The Hilltop Hoods require a big, bold live sound and Muggs commented that the band has to be mixed from front to back and from side to side so the person in the boondocks gets the same vibe as the person in the front row.

“The best thing about d&b at the moment is its Array Processing, which I believe is the best out there,” he added. “It just dials PAs in beautifully and it’s a big part of my ability to deliver so well. It gives output control across the system and every element. Essentially they align across the whole arc and effectively blows soft into the most immediate part of the direct field, which is the crowd on the floor, and it punches harder in the arc where it’s got to reach further.”

When it comes to the FOH mixing console, Muggs admits he’ll use anything and for this tour he had a DiGiCo SD10.

“The DiGiCo’s interface is quite handy and efficient to use plus they still feel like a console - not like some other digital consoles,” he added. “The EQ on them is pretty good, as is the master buss. I have a D2 as a delay unit and a comp as a master over the master mix but everything else is onboard. The effects on the DiGiCo have certainly got better over recent years and their reverbs are pretty cool.”

Microphones include Sennheiser clip-on mics for the toms and regular Shure 57 on the snare top with Muggs saying he won’t use anything else. He also prefers pencil mics for overheads as he favours a more direct sound. Shure Beta 58 URs are spec’d for wireless as Muggs finds them to be really robust and sturdy, and more natural than the Sennheisers which have a tighter bandwidth through mid and high-mid.

“But again I can use anything,” Muggs commented. “It’s not the microphone that’s making the noise. Your signal flow starts from the performer and you have to manipulate that to make it sound as true as possible. There are different natures or nuances to different components of mics, consoles etc but essentially you try to achieve that same end

result. There are a lot of really good mics and consoles out there - I know what ‘bad’ is and I don’t like using it. You get familiar and used to how different mics, or combinations of mics, work for you.”

Monitor engineer Hayden ‘Snips’ Ineson was on his first tour with the Hilltop Hoods experiencing their hefty SPL on stage.

“They can shake down a lot of monitor engineers, that’s for sure!” laughed Muggs. “They only have wedges, although they have tried IEMs in the past. I think IEMs are difficult for hip hop and rap acts as they need an attachment to the crowd and feed off that energy. They need volume and interaction and no matter what treatment you use with IEMs, it just doesn’t feel the same. The female guest vocalists use IEMs because they can pitch and position themselves in the mix more accurately. When I used to do monitors for the band, I knew if my ears were hurting they were happy!”

“As the band members are very mobile on stage running from side to side, they need a full range and a lot of coverage in their monitor mix. Consequently you have to pump



THE MULTIPURPOSE POINT-SOURCE

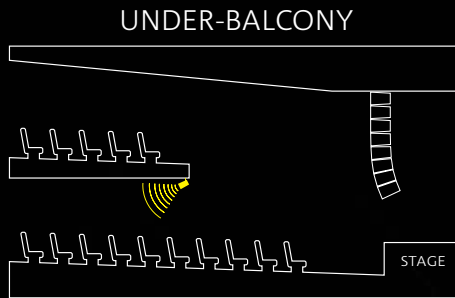
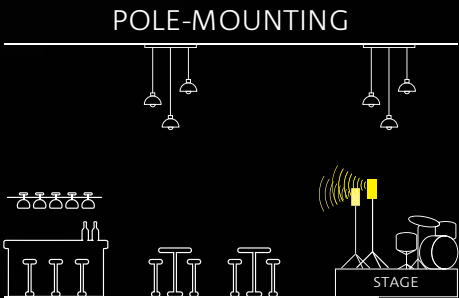
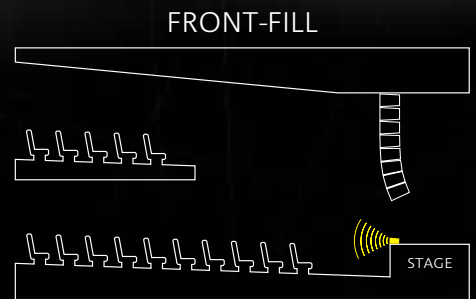
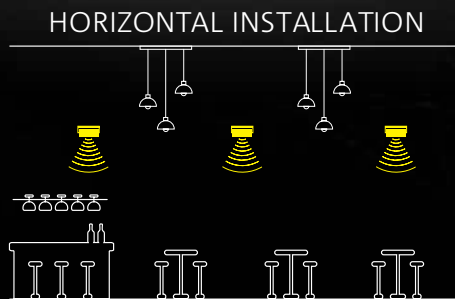
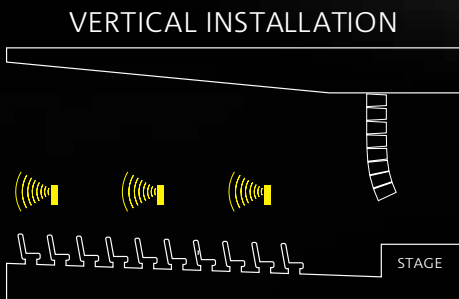
400W RMS ACTIVE 2-WAY SPEAKER

LF 2x 5" (1" V.C.), HF 1x 1" (1.4" V.C.)

AVAILABLE WITH **60° x 60°** OR **100° x 100°** COVERAGE

MOST COMPACT **RNET CONTROLLED CABINET**

MAXIMUM VERSATILITY IN TOUR-GRADE APPLICATIONS OR FIXED INSTALLATIONS



VIO X205 2-WAY ACTIVE POINT-SOURCE SPEAKER

| | |
|--------------------------------|--------------------------|
| Max SPL..... | 126 dB |
| Frequenc Response [-6dB] | 80 - 20,000 Hz |
| HF | 1x 1", 1.4" v.c |
| LF | 2x 5", 1" v.c |
| VIO X205-60 Directivity..... | 60° x 60° |
| VIO X205-100 Directivity..... | 100° x 100° |
| Amplifier | 400 W RMS |
| Processing | FIR Linear Phase Filters |
| Width | 150 mm [5.9 in] |
| Height..... | 485 mm [19 in] |
| Depth | 240 mm [9.4 in] |
| Weight..... | 7.8 Kg [17.2 lbs] |

dBTechnologies



1800 441 440 | www.nas.solutions

it everywhere so no matter where they're standing they still feel the punch and position themselves in that mix."

Pauly Owen, who has been lighting the band for many years, likes to design an arena lighting rig that looks interesting before you even start the show and this time around he didn't disappoint.

The band wanted to theme the stage to the album *The Great Expanse* and Pauly racked his brain on how to do this, opting for a central focus point with a large truss configuration expanding out from it.

"The central point is a diamond-shaped truss which is filled by video screen," explained Pauly. "When I spec'd the screen, I said to Brad Hurlé, our video guy, that I wasn't looking to do anything special or amazing with it – just logos and a few character heads."

The trussing houses 16 Ayrton MagicPanel-R fixtures of which Pauly is a big fan but he is careful not to overuse them, in fact they don't put in an appearance until nearly half way through the show.

"When I do I create some really big looks with them and they certainly capture everyone's attention," he added. "It's really a wow moment."

Radiating out from the diamond truss position are eight large stretches of truss each housing a combination of 34 Martin MAC Viper Performance, 32 Claypaky Sharpys, and 36 GLP Impression X4 LED washes. The two front trusses provide front lighting as well as multiple layers that Pauly can play with for different parts of songs.

"Essentially I need them to cover the guys on stage as front wash, but I'm big on layers, so everything in the rig has a multiple use," he said. "I angled the trusses so I can get a good front, mid and back truss arrangement across the stage to cover everyone I need to. I look at where the Sharpys sit first because there are one or two looks where they all project straight out from the stage so I wanted an even coverage of them, although different and dynamic because of the way they're sitting from the truss. Then it's essentially spot then wash all the way through the rig."

Pauly has always done Hilltop Hoods shows in the spot then wash manner, saying they're the fixtures that fill in the gaps, do all the colours and beams. That tried and tested formula allows him to light the band properly, and then build on the design.

Scattered through the rig are 32 Martin Atomic 3000 strobes whilst GLP JDC-1s are located on the stage floor to light the band and fill dark spots with colour, especially up on the backline which can seem dark due to the surrounding bright video screens. They do the occasional strobe effect with random chases thrown in.

A catwalk that juts out from the stage has eight Elation SixBar 1000 to provide footlight and make the band members feel closer to the

crowd when they're out there!

Two massive pods, similar to stadium sports lights, echo the album cover adding an incredibly dynamic element to the stage lighting. It's a big look that Pauly cleverly does not overuse. Each pod contains 32 Martin RUSH PAR2 RGBW, with Pauly utilising the zoom function, and five Martin MAC1001s suspended from beneath the pod. Ten more MAC101s are located in front of the backline riser.

Pauly decided to incorporate GLP KNV Dots into his rig as the band have incorporated stars into the cover artwork of several albums, including the recent release.

"The brief was to create a starry look within the arena. I scratched my chin over this for a little while," Pauly said. "Initially I thought of using a bit more outrig pipe and random lengths of cable with the SGM balls which come in a string of eight. The question was whether they would be bright enough for an arena. Then I heard that Above & Beyond had just acquired the GLP KNV Dots and they suited the bill to a tee."

Unfortunately they were only able to get 60 units so there were probably a few spots in the arena that didn't get the starry look but from FOH it looked very pretty! Twenty of the KNV Dots are on droppers hung at different heights randomly through the front four trusses, as well as around the diamond, filling in the centre.

As with most hip hop acts, interaction with the audience is paramount hence a large number of 2-light and 4-light molefays are used to light up the audience to make them feel a part of the show.

"Not wanting to overuse them, I spread them throughout the rig to give a lot of range," explained Pauly. "That way, each song can have a different grouping and look to the molefays."

Control was an Avolites Sapphire along with an Avolites Tiger Touch console as backup with Pauly being one of the LDs waving the Avolites flag in Australia.

"People can be skeptical when they first see the console, but by the end of the show they're more than impressed," he said. "I'm just very familiar with the platform as I've been using Avo ever since I first started programming and running moving light shows. It just works for how I approach a light show plus it's very intuitive. It's easy and fun to play with – it feels like you're playing rather than clunking over stuff. It's as deep and powerful as an MA console can be but you don't have to take 10 steps to achieve the same thing!"

The tour lighting was supplied by PRG, with Above & Beyond Production Services supplying the KNV Dots, Ayrton MagicPanels, and Avolites Tiger Touch console.



ROAD CREW

What to do with your skills?

by John O'Brien

If nothing else, life in the high intensity, prolonged stress environment of live production is character building. Prosper at this and you're good for anything. However, it can be difficult to sell this as a virtue if you transition to another career or industry.

I've just finished Stuart Coupe's excellent book "Roadies" and it got me to thinking about what I got from roadie life. Primarily, it fed me for many years and I had some great times while learning a lot about myself and

others. Cool. I've made lifelong friends. The tech and general practical skills learned on the road were an invaluable platform for my later career. All good. Most valuable though are the traits of inner resilience, perseverance

and calmness under pressure fomented while doing all the crazy things that are needed to get a show on day after day.

A quandary unique to those moving from production to corporate or other roles is convincing the interviewer that being involved with <insert mega-gig here> or getting 28 acts on and offstage in 90 minutes is a good sign of your temperament, dedication, adaptability and ingenuity and just how that will benefit their organisation. Sometimes they'll get it, sometimes not. They may think that you are just showing off, so you will have to adjust your pitch to give concrete examples of your attitude and aptitude. It's up to you to gauge what the prospective employers are after and



PHOTO BY ALFRED

AUSTRALIA'S No1 SPECIALIST LIGHTING COMPANY

chameleon-touring.com.au

tailor your approach to suit.

Staying in a closely related area like a production house is the easiest step because you keep working with the same gear and people without having to explain yourself too much. Further afield - careers in corporate AV, film / TV, installs or distribution are options for keeping current technical competencies alive while learning new ones. It might be a bit trickier to get in the door but chances are that you will have mutual interests or contacts. If you move to a completely different industry, your hard tech skills may not be of much direct use. Mixing a cake or a batch of concrete require radically different techniques to those for mixing a band.

The underlying dilemma is the difference between 'soft' and 'hard' skills. Hard skills such as stage management, lighting rigging or audio console operation are relatively easy to qualify but don't necessarily transfer well to other job descriptions. Certificates, endorsements or tickets - you either have them or you don't, so list these on your resume (but don't make any up!).

Hybrid skills like budget or people management are less easy to define precisely but are still valuable assets worth highlighting, particularly if you can show how they relate to the role that you are after.

The most difficult to sell skills are the soft ones. Problem solving, trouble shooting, time management, efficiency, flexibility, teamwork, independence, lateral thinking ... the list goes on. For mine, these are the greatest strengths that you will get from live production work. Unfortunately, it's tough demonstrating the depth or value of those soft skills and attitudes to folk who have come through more linear or traditional career paths.

A great illustration: I applied for the same technician role twice. First time, the interviewer I knew socially but it was awkward

at best. My approach meant little and another candidate won out. 6 months later, they moved roles and the job came up again. This time I met with the new tech manager and he asked what I knew about video. "Not much, but I know that you need to get signal into those black boxes, it will get altered and you then get the correct signal to the next point." His reply: "When can you start?" A gig veteran himself (R.I.P. Syko), he saw that my general attitude was more important than any explicit aptitude with their gear.

One of the best skills you can demonstrate is that you don't need to know everything but do know how to find out how to do what you need to, when you need to. You need to be adaptable - a trait sharply honed in live work - but you need to demonstrate that too. That means tailoring your resume and approach to each job you apply for. As an interviewer, I often eliminated CVs from the shortlist if they were cookie cutter with little effort made to personalize the application for the particular job. Do some research on the company you are pitching to - it shows you care enough to be worthy of their team.

Some recruiters see listing soft skills as resume killers but there are competing schools of thought in this area so you'll have to wing it there. I can confirm how difficult it can be to explain to the uninitiated HR rep just how valuable your soft skills and resilience are. A good way to get around this predicament is to illustrate some examples of how you solved a particular problem or overcame a time critical issue in a high-pressure situation. Show them a measurable accomplishment and prove those skills.

One personal example that I've used in interviews is resolving a critical DMX failure 10 minutes before the headline act was due on stage. With a packed house, no way of getting a new cable to FOH and no lines free on the audio multi - I grabbed the house dimmer and

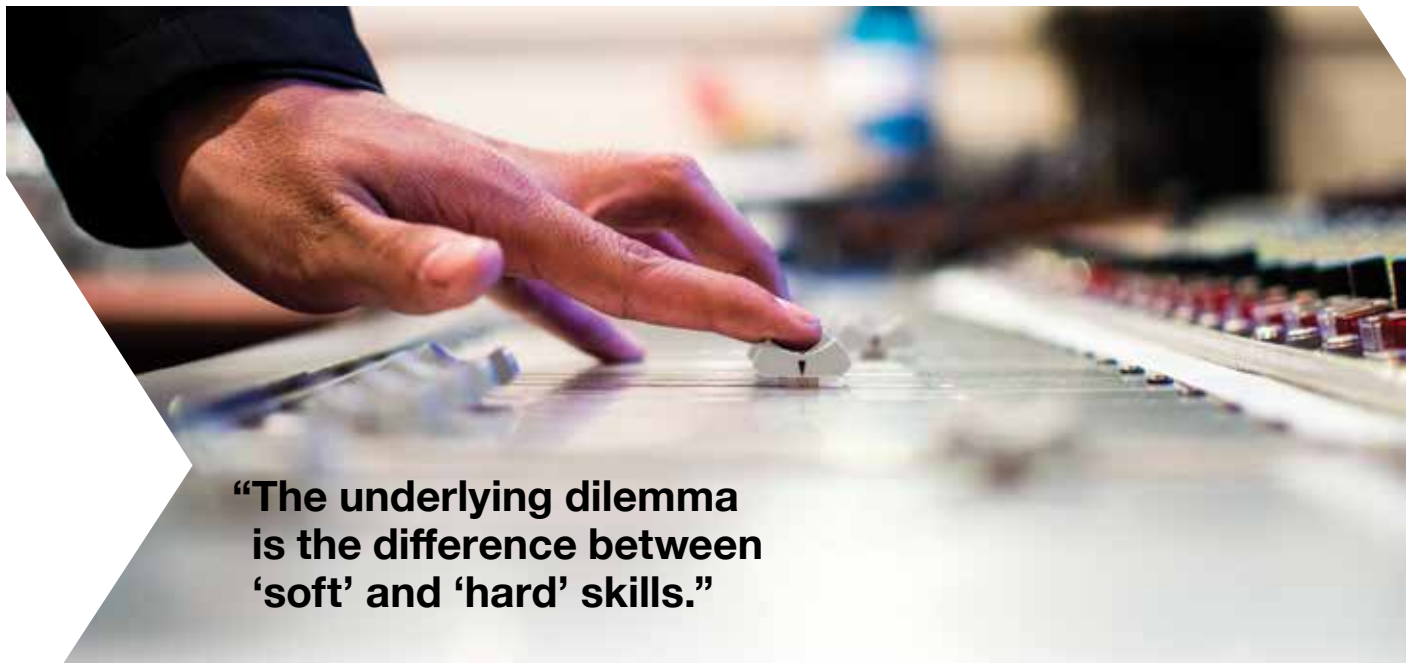
ancient theatre desk, smashed in handfuls of plugs from the touring rack, setup the board side of stage, ghosted up every channel to work out what had ended up where and gave the stage manager the thumbs up with 30 seconds left. Phew ... a few deep breaths and we are GO. I use this example not to show off (and they only get the truncated version) but to highlight calm problem analysis and decision making during a highly stressful time critical situation.

Be careful not to big yourself up too much though. Just because you were a runner on a show does not make you a showrunner in the TV sense. Honesty and humility can be just as important to a prospective employer as any assertiveness. There's a big difference between confidence and cockiness so keep it real and be yourself. As a hirer - above everything else, I always looked for personal integrity in the candidates and was always rewarded with good workers.

So, what else did I get from roadlife? Boxes of tour shirts and gig ephemera - a dubious form of superannuation at best. Some desk tapes of questionable legality and endless carefully anonymous war stories to tell the easily impressed (or bore my dearest - who's heard them all by now!) A perverted sense of humour (or was that a prerequisite)?

Levity aside, moving from live work into other areas taught me how to sell myself as someone who can analyse a problem, form a solution and execute it in a timely manner, all with a smile. I may be jack of all trades but I'm now a master at transitioning between them and part of my new trade is telling you all about it! Thanks road skills...

I firmly believe that life on the road helped hone my greatest professional assets to a level rarely found in other industries. The puzzle has been selling that prowess - an ongoing lesson to this day. When your time comes, hopefully you can sell yourself well too.



"The underlying dilemma is the difference between 'soft' and 'hard' skills."



› JOIN THE CX NETWORK

Join the biggest network of like minded people across Australia at cxnetwork.com.au and enter your details for FREE access to almost 3 decades of our magazines including CX, Connections and Channels Magazines going back to 1990!

› GET INTO PRINT

We are committed to print, and each month our paid subscribers get access to our glossy Magazine the old fashioned way - In the mail.

You can subscribe online at cxnetwork.com.au OR - fill in the form below and email to office@juliusmedia.com or mail to **Locked Bag 30, Epping NSW 1710.**

PRINT SUBSCRIPTION ORDER FORM

Name _____

Email _____

Address 1 _____

Address 2 _____

Suburb _____

State _____

Postcode _____

Trading name _____

Phone _____

Our direct debit details: **BSB: 633 000 Account number: 167384981**

VISA MASTERCARD

Card number _____

Expiry date _____

CSV _____

Name on card _____

Card holder phone number _____

Card holder address _____

Tax invoice required? YES NO

PLEASE TICK ONE OPTION BELOW

Prices are in AUD.
Magazine's mailed to Australia only.

1 Year \$59 2 years \$99 3 years \$129

You are doing business with JULIUSMEDIA GROUP PTY LTD, an Australian family owned company. Publishing since 1990.

SHURE AXIENT DIGITAL

by Marcello Lo Ricco



Marcello Lo Ricco is the director of LSS productions. LSS was formed in early 2000 to service the musical theatre market, with a range of clients across independent theatre companies, school performing arts as well as community theatre groups.

When LSS was engaged for a touring production of 'StarWogs: The Ethnics Strike Back' starring Nick Giannopolous and Mary Coustas, it served as the perfect opportunity to update our wireless inventory to include Axient Digital. The main appeal for using Axient Digital for this production was the systems wide 116MHz tuning bandwidth. This allowed us to use the same system across Australia trouble free, whereas previously we would have had to use multiple systems in frequency blocks tailored to the local RF landscape. After the flawless performance of these initial eight channels on tour, we decided to increase our inventory to 24 channels, consisting of 6 AD4Q quad receivers, 24 AD1 bodypack transmitters and two AD2 Beta58 handhelds.

In Use

The quad receivers are a real space saver, with 24 receiving channels fitting into just 6RU. This helps us to get in and out of the venue fast, and keeps our footprint small. On shows where we are patching the units via their Dante interface, we can also do away with 24 channels of analogue patch and stage boxes, which further contributes to a neat

and hassle-free setup. The Dante interface is also useful in being able to easily monitor the audio from all receivers via Wavetool, which is a third-party application designed for theatre RF monitoring.

The RF performance has been outstanding. The range is excellent, and we are finding that we can fit at least double the amount of channels into the same spectrum as we could with our other analogue systems – even without engaging Hi-Density mode. This is a huge advantage in theatre productions where there may be up to 40 channels of microphones and wireless comms fighting for an ever-shrinking share of the spectrum.

Control

We are using Shure's Wireless Workbench to interface with the receivers and perform frequency coordination. Once the frequencies are calculated and deployed to the receivers it is as simple as syncing the bodypacks. It is worth noting that the bodypacks reliably sync instantly via their IR interface. Wireless Workbench also alerts and timestamps any interference encountered at the receiver, which is great for tracking down intermittent sources of interference that weren't present when doing the initial scan.

Performance

The first thing we noticed was the dramatic reduction in noise floor. That's a really critical and noticeable thing in theatre, where you

may have 20 open microphones at any one time. All of our operators have commented on how clean and neutral the sound is, which is a perfect pairing to our range of DPA microphones. The physical construction has been flawless on concealed placements and coping with the inevitable sweat, and the bodypack lock features also come in handy here. The front panel UI is really well laid out, and you can pretty much do everything from the receiver menu if required.

Support

Jands have been of great assistance throughout our acquisition, going above and beyond to ensure we had the system ready for the first tour. They also extended the opportunity to demo some additional pieces of the ShowLink system. It was the clever ideas within the ShowLink system that really sold us on Axient Digital. These forward-thinking features would be a huge benefit to our workflow, such as changing bodypack settings remotely rather than trying to wrangle it out of a costume. We are definitely looking at adding the ShowLink technology to our inventory when we invest further into Axient Digital in the future.

Brand: Shure
Model: Axient Digital
Product Info: www.shure.com
Australia: www.jands.com.au
New Zealand: www.nsl.co.nz



The Specs

AD1

- Two transmission modes: Standard for optimal coverage and new High Density for maximum system channel count and robust coverage
- Encryption-enabled, secure transmission
- Two connector options: TA4 and LEMO3
- Detachable ¼-wave antenna
- AA or SB900A lithium-ion rechargeable batteries for convenient power options
- External contacts for docked charging

AD2

- Offers more than 11 hours of continuous battery life with Shure lithium-ion rechargeable batteries or 8 hours with AA batteries at 10mW
- Two transmission modes: Standard for optimal coverage and new High Density for maximum system channel count and robust coverage
- Rugged metal construction in black or nickel finish

- Backlit LCD with easy-to-navigate menu and controls
- Low-profile, lockable power switch
- Encryption-enabled, secure transmission
- AA or SB900A lithium-ion rechargeable batteries for convenient power options
- External contacts for docked charging

AD4Q

- Wide tuning range up to 184 MHz
- True digital diversity reception per channel for drop-out resistance
- Front panel headphone jack enables Dante™ Cue and Dante™ Browse monitoring
- Redundant Dante or AES67 digital output
- Switchable XLR for Analog and AES3 outputs
- Channel Quality meter displays RF signal-to-noise
- DC module version available to support redundant power

VUEPIX
INFILED

**THE INDUSTRY'S PREFERRED
RENTAL & PRODUCTION LED DISPLAYS**



DB - Deep Black

DESIGNED FOR FINE PIXEL PITCH
RENTAL APPLICATIONS

- Pixel pitch 1.5-3.4mm
- Ultra-black LED technology
- State-of-the-art image quality
- High refresh rate • Fast locking system
- Cable-free connection (optional)
- Straight or curved



ER - Rental Series

DESIGNED FOR RENTAL APPLICATIONS

- Pixel pitch 2.9-10.4mm
- Exceptionally high brightness
- Black LEDs for ultimate image quality (optional) • Ultra slim
- Convenient handling • Fast build
- Easy alignment • Hot swap
- Indoor & outdoor options



AC - Air Carbon

THE MOST ADVANCED TOURING
SYSTEM ON THE MARKET

- Pixel pitch 3.75-5.35mm • Fast build
- Super lightweight • Rapid transport
- Intuitive coupling system • IP65 rated
- Easy maintenance • Straight or curved
- Full range of accessories

VISIT VUEPIX.TV FOR FULL SPECS

Contact ULA GROUP for a VUEPIX demonstration today!
1300 ULAGROUP | INFO@ULAGROUP.COM | ULAGROUP.COM



LUMINEX GIGACORE SWITCHES & LUMINODE DMX NODES

by Ash Nuendorf, High Impact Lighting

Ash Nuendorf has been in professional lighting for more than 14 years, and established High Impact Lighting in 2015. High Impact Lighting work on a wide range of shows, from classical to rock concerts, the worship sector, and have recently covered outdoor theatre productions.

I've had mixed experiences with DMX nodes in my career. They all have their own minor weakness or eccentricities. But at High Impact Lighting, we recently had an incident where nodes locked up during an album recording for one of our church clients. Not good, and not something that I want to repeat. On high profile events, you can't say to a client "Yeah, we've had that failure before!"

The Great Outdoors

Recently we'd been engaged to do the lighting for EkkaNites, part of the Royal Queensland Show. It is a mixed outdoor show in the arena with horses, monster trucks and fireworks. Not an especially complex lighting gig with only eight DMX universes, but the distances were huge as we had to get data to the four towers around the RNQ Showgrounds, as well as out into the middle. The arena is an

oval 160 metre by 180 metre paddock so it is a monster area to cover. We've used various Ubiquity wireless technologies in the past, but I'm increasingly uncomfortable sending mission critical data across wireless links with the radio spectrum congestion getting uglier nowadays. I want my networks to be rock solid reliable.

The Goods

This led me to look closely at the Luminex range of network switches and nodes. I came across them in the USA and they have a lot of good reviews over there. I caught up with the PAVT guys at ENTECH Roadshow and said "let's do something". We now have in our inventory GigaCore 10s as well as some LumiNode 1s, 4s and 12s.

Delivery was going to be a critical issue for us. We had the gig coming up and this hardware was the crucial backbone of our entire production. To PAVT's credit, I know they had some stock challenges due to model updates but they understood the nature of our order and got the gear to us in time.

Out of the Box

I took the gear home and programmed it up that night, ready for installation the next day. The first thing I noticed is that this gear is really built for the rigours of the road. They feel well-made and the packaging (which I'm generally not a fan of) hints of a quality product inside. The GigaCore 10 switches are heavy! I chose the 10 version because that is the first model that features a fibre connection on either SmartBeam or Opticalcon connections. A big feature for us is the PoE powering of the LumiNodes directly from the GigaCore 10 PoE enabled switch. This means less cable runs and connections, which of course means greater reliability.

A pleasing surprise was that every device shipped with a different IP address. Most devices ship with the exact same default IP address (usually 192.168.1.1) which means you cannot daisy chain the gear without having to manually change the IP on each device first. The LumiNodes, with their unique IPs combined with the POE meant that all I had to do was connect them to the GigaCore and I was ready to configure my network.

Smarts Inside

An interesting feature of the LumiNodes is that they have a brain. That is, you can do protocol conversion on the fly in the box. For example Art-Net to sACN, DMX in to DMX out, DMX through etc. So in terms of nodes, it is best to think processing power, not just DMX.

The configuration is done via a web page. It is clear and easy to use. For our Ekka event, we had Art-Net, DMX of course with some RDM, Spot Track data as well data for lasers (they have their own protocol) and we even had video using NDI.

Connectivity

Our connections were a mixture of Cat5 and fibre using LC connections. We already have a lot of fibre terminated this way so it made sense to order the GigaCore switches with Opticalcon connections which are LC compatible. Our control position was behind the 1st tower, and we ran Cat5 to the first LumiNode there. From that location, the next run was 140 metres so we ran fibre to

the next GigaCore switch. We had primary and redundant networks and the video was eventually put onto its own VLAN using the same connections.

Show Time

We ran the network for two weeks straight in a hot and dusty environment. The system was completely stable. We had one ongoing problem though - during the days, the show entrants would unplug the power to our remote GigaCore Switches to plug in their

hairdryers to dry their cows and cats for showing! It doesn't matter how much labelling or taping up, they still would do it! Fortunately they were fairly easy faults to find because the power and data indicators on both the LumiNodes and GigaCores made it an easy process to trace the issues.

Conclusion

Luminex gear is well made and is designed to stand up to the abuse our industry dishes out. The built-in software is validated against

all common protocols in the AV industry and it is firmware upgradeable, so it is future proof which is important to us. It is easy to configure and on our gigs, is rock solid!

Brand: Luminex
Models: Gigacore 10, Luminodes 1, 4 and 12
Product Info: www.luminex.be
Australia and New Zealand: www.pavt.com.au



LUMINODE 1

POE Powered

USB port also works as an ethernet dongle

2 processing engines & 1 DMX port



LUMINODE 2

POE Powered

Ideal to use on any fly-bar in a fixed infrastructure or to be wall mounted

4 processing engines and 2 DMX ports



LUMINODE 4

POE Powered

Mount one or two units in a 1U rack space

6 processing engines and 4 DMX ports

M10 insert and safety ear for truss mounting



GIGACORE 10

Ethernet connectivity: 8 x Shielded Neutrik Ethercon connectors

Fiber connectivity: 2 x slot for rugged fibre connectors

Ethernet port speed: 1Gbps

Supported protocols: Dante®, RAVENNA/AES67®, Ethersound®, Q-LAN, REAC®, sACN, ArtNet, MANet2, HogNet, RTTrPL (BlackTraX), IEEE 802.1p CoS (Class of Service), DiffServ (DSCP), PoE (802.3af) (optional), PoE+ (optional), IEEE 1588 PTP V2

Ethernet compliance: IEEE 802.3, IEEE 802.3u, IEEE 802.3x Flow Control, IEEE 802.3ab Gigabit Ethernet



LUMINODE 12

POE Powered

19" rack unit with the highest density of DMX/RDM ports on the market

16 processing engines and 12 DMX ports

Are you concerned about your mate's mental health?

FACT: Most Australian tech crew and roadies have attempted or considered suicide¹!

Support those around you and register for free mental health training



www.entertainmentassist.org.au

Supporting the mental health of Australian entertainment industry workers

¹Passion, Pride, Pitfalls Dec 2014



SB-GPO-W10

SB-GPO-P



Omega Tech Stage Boxes

STOPPING THE SHOW STOPPERS

by Simon Byrne

Omega Tech is a small West Australian manufacturer specialising primarily in power distribution products for the live event production industry. Their Stage Box series power products have been designed as a robust distribution system for stage power and getting power into truss and so on.

With numerous models and options to choose from, the flexibility is over the top, so most applications are covered and where they are not, Omega Tech will provide custom solutions based around their highly configurable stage box shell system.

The most popular model features PowerCON in, with eight GPO outlets and two PowerCON loop through outputs. There are Wieland models which take advantage of the four circuits on a Wieland loom too, giving you the capacity to shift large amounts of power in an efficient, neat way. Most models have an integrated switched circuit breaker with red neon which provides confidence that the supply is energised, and of course overload protection.

The housing is constructed in 1.2mm zinc-treated and powder-coated steel that feature an integral M10 thread to enable the box to be hook-clamped to a stage leg or hung from truss. Customers have the option of having their own custom nameplate made when ordering.

Why are they so useful? The obvious reason is that they are zillion times more reliable than the ubiquitous "Showstoppers", those cheaply

made and unreliable powerboards. But where they really shine is in keeping things neat, especially the loop-through versions, because you can loop through from one stage box to the next.

Australian standards compliance is important for most things, but critical for anything that could potentially kill. All of Omega Tech's products are standards compliant, including AS/NZS 3002:2008, the standard for shows and carnivals.

But this is a CX Road Test, what are the real users saying?

Derek Peterson - Totally Sound, Bunbury WA

Totally Sound are a staging, lighting, and AV production hire company, servicing the South West of WA.

The Omega Tech Stage Boxes are a simple but unique product that fill a hole in the market. The PowerCON connections cannot fall out and we wanted to get away from Showstoppers. Showstoppers are crappy and unreliable, but up until Omega Tech's Stage Boxes, there wasn't an alternative.

We mainly use them for stage power running from a 3phase distribution board (also from Omega Tech) using PowerCON cables to the first, and then loop through to a second and so on. We like PowerCON cables because they are a locking connector.

Very reliable. We'll be buying more.

Geoff Politt - Twisted Pair Productions

Twisted Pair is Queensland's largest DJ Backline supplier, and also a full service provider servicing corporate through to festivals and concerts whilst focussing on boutique events.

We primarily use the boxes on live performance stages for backline power. We'd been looking for a while to move away from Showstoppers. We looked at getting something custom-made or adapted from the US, but that was cost prohibitive, especially to ensure they were compliant with Australian regulations.

We've had our Omega Tech Power Boxes for just over eighteen months and we have them in packers of six with various PowerCON links.

Our three-phase dizzys have PowerCON out (which we bought from Omega Tech at the same time). Being PowerCON, we don't get air gaps, and the link through is a great feature.

Their construction is great! They get dropped quite a bit, and apart from a few dents, they are fine. The M10 bolt holes on the back are really useful for hanging.

I've seen the internals; everything is immaculately done. They are robust and do exactly what they say on the tin. We can't fault them.

SB-GPO-CF

SB-GPO-T



Rosh Bellen - Brisbane Sound Group

In addition to their sales and installations arms, Brisbane Sound Group offer complete technical solutions for all types of events, specialising in sound, lighting, and video systems.

We've got about thirty units utilising either PowerCON or Wieland inputs, with loop throughs.

We find the Wieland versions are great for distributing power to multiple upright trusses. Using the M10 bolt hole, we mount stage boxes on the back of them, and use the Wieland loop throughs to the next trusses. Because everything is LED now, our loads are well within the capacity of the four circuits within the Wieland looms and using two GPOs on each box, we pick up one of the four circuits locally. It is much neater than tails and we can label everything up clearly. They also have a power present indicator light which is handy.

For stage power we use the PowerCON versions. No Showstoppers!

Before coming across this range of products a couple of years ago, everything had to be

custom-built, which is a challenge. Omega Tech's gear already complies with the relevant safety standards, and is built out of steel, which means it doesn't fall apart.

When people see them, they often comment "Oh wow, that is a great idea!" And they are; they really fill a need, the quality is good, they are fully compliant, the price is fair, and their service has been fantastic.

Stage Box Versions:

- SB-GPO-P
Powered Stage Box w/ PowerCON Input/Thru
- SB-GPO-T
Powered Stage Box w/ TrueCON Input/Thru
- SB-GPO-CF
Powered Stage Box w/ CeeForm 16A Input/Thru
- SB-GPO-W10
Powered Stage Box; 8x 10A GPO; 10pole Wieland Input
- SB-GPO-W10/T
Powered Stage Box; 8x 10A GPO; 10pole Wieland Input/Thru
- SB-GPO/PCON-W10
Powered Stage Box; 4x 10A GPO & 4x PowerCON; 10pole Wieland Input / Thru

- PowerCON; 10pole Wieland Input
- SB-GPO/PCON-W10/T
Powered Stage Box; 4x 10A GPO & 4x PowerCON; 10pole Wieland Input / Thru
- SB-GPO/TCON-W10
Powered Stage Box; 4x 10A GPO & 4x TrueCON; 10pole Wieland Input
- SB-GPO/TCON-W10/T
Powered Stage Box; 4x 10A GPO & 4x TrueCON; 10pole Wieland Input / Thru
- SB-PCON-W10
Powered Stage Box; 8x PowerCON; 10pole Wieland Input
- SB-PCON-W10/T
Powered Stage Box; 8x PowerCON; 10pole Wieland Input / Thru
- SB-TCON-W10
Powered Stage Box; 8x TrueCON; 10pole Wieland Input
- SB-TCON-W10/T
Powered Stage Box; 8x TrueCON; 10pole Wieland Input / Thru

Manufactured and distributed by
www.omegatech.com.au

((bssound))

BAND PA SYSTEMS, VOCAL PA SYSTEMS, LIGHTS

Pick up and do it yourself, or Delivered, Set up and Operated by experienced Crew.

Mark Barry; (03) 9889 1999 or 0419 993 966

www.bssound.com.au
mark@bssound.com.au

RFID

Instead of spending hours and days, opening cases and bar code scanning, before you know what is missing

Spend minutes! - Reclaim missing assets - Save money!

Properly configured **RFID**, the right **software**, the right **tags**, the right **team!**

RentalPoint SOFTWARE has the expertise!

Watch our video now!

www.rentp.com/RFID | Sales@rentp.com

CX NEWS

Get the latest industry news, views, and jobs direct to your email every Wednesday.

Register at **juliusmedia.com**

Cry havoc and let slip the junkyard dogs

by Duncan Fry

According to Jim Croce, Bad Bad Leroy Brown was meaner than a junkyard dog. That's a bit harsh on junkyard dogs – we had one next door to us at ARX for quite a few years, so draw close you youngsters, and let me explain.

As I've probably mentioned before, we have dogs the way most factories have rats. There are always a couple of them roaming around looking for some action, annoying the passers-by, razzing up the reps and chasing the couriers! At the moment we have Charlie the WonderWhippet, AKA the Snapper, and Sultan the Doberman, in the position of Head of Security.

Our current factory is what we still call the 'new' factory, despite being here twenty years or more. Prior to that we were in what we call the 'old' factory (no prizes for guessing that). This was around the corner a couple of streets away, and was one of a group of factories built early last century with concrete bricks and angled asbestos roof. Mmmm – smell the ambiance! On one side was a building wrecker's junkyard, guarded day and night by a big black dog, and opposite was a large empty block of industrial wasteland.

The whole area was owned by the junkyard owner, who took a benign un-interest in anything we did, apart from collecting the rent from all the factories. This left us free to park any number of old trucks in various stages of disrepair on the vacant block, and also salvage anything useful to us like wood and partitions etc from the junkyard.

But wait, I hear you say, what about the junkyard dog?

Well, originally there were two dogs, the big black one previously mentioned, and a brown one, which just wandered off one night. Either that or the big one ate it, but one morning it just wasn't there. This must have made the big one a bit lonely, because a day or so later he wandered up to the fence to have a look at us, wagging his tail. I cautiously put out a hand for him to sniff. He gave it a good going over with his nose, and wagged his tail some more. Must have been the McBreakfast I had munched on the way to work. He wandered down the fence line for about 10 metres, poked his nose against the wire fence, pushed his way through a secret hole, then wandered up to have a good look at us, still wagging his tail.

When I say big, he easily came up to my hips. He stopped, and then leaned against me. I hung on to his neck to stop myself from falling over. An old leather collar around his neck had a metal tab on it with 'Johnny' engraved on it,

so Johnny it was. From then onwards he would wander out anytime we were there, and come and lay down in front of the factory. As a guard dog, he certainly looked the part, but had no idea what the job entailed. Anyone who came in could quite safely walk past him, around him, or even over him and he wouldn't bat an eyelid.

We had been in the factory for about five years when the owner of the junkyard (and everything else) died. His widow sold out a couple of months later to some grasping developer who did a deal on buying the whole lot from her for some meagre pittance, intent on throwing up a whole lot more factories on our nice convenient vacant block next door. Which he eventually did.

But what was going to happen to poor old Johnny?

When his owner died he had nowhere to go. All he knew was life in the junkyard, and having never been inside a house it was unlikely he'd settle down back home with the widow. But luckily Dom the panel beater next door to us took him in, and he became his factory dog. It was a real tough life for Johnny then. Mooch around the factory, or yard, or driveway all day, sleep inside the factory in winter, and in an old car out the front in summer.

If I came back as a dog, it sounds like the sort of life I could get used to, especially as Johnny had not been subjected to the old 'nip and tuck' operation and had quite an impressive collection of family jewels!

A paint company rep came into the factory one morning.

"I'm just looking for Dom next door," he said. "I'm supposed to see him at 10 o'clock. I can't see him anywhere - is he in today?"

"He can't be far away," I replied. "Why don't you wait in his office - I don't think he'll be long".

"Thanks," he replied, and went next door. Thirty seconds later he was back, looking rather pale.

"Jeez I can't wait in there, mate," he said. "There's this bloody big dog lying there under the desk, and it's eating some small animal!"

That sounded interesting, so I went next door with him to have a look. I peered under the desk in the gloom of Dom's office, where I could just discern the shape of Johnny with something small, furry and pink clutched between his front paws. I bent down towards him.

"What have you got there, Johnny?" I asked. His tail thudded against the floor, and he



pushed something round and glistening with dog slobber towards us.

"Ah, jeez, he's ripped the bloody head off it!" yells the rep, who promptly ran outside for a good heave in the gutter.

I picked up the offending object, then started laughing. It was indeed a head, but not of an animal but some small child's soft toy doll, which Johnny had found and decided to adopt.

I took the head outside to show the rep, but he was gone. Who would have thought that paint reps had such tender stomachs?

One day a friend of ours - let's call him Rod (since that's his name!) - came down to the factory to show us his new red Mazda RX7 sports car. We all wandered outside to go ooh and aah over it, then went back inside to have a cup of our infamous coffee.

About half an hour later, Rod gets up to go, climbs in the car and zooms off down the laneway at the front of the factory, while we enviously watch.

Suddenly the car screeches to a halt, the driver's door flies open, and Rod leaps out, yelling "Shi-i-i-i-i-t!" He stands there white faced, pointing to the inside of the car, then slowly Johnny's head pokes out, looks around, then he climbs out and wanders down the lane, wagging his tail.

What had happened was this: after we had gone inside with Rod when he arrived, Johnny must have gone over to have a good look at the car too. Deciding that this was a whole lot nicer place to have a snooze than the beaten up old car he normally slept in, he had climbed in through the open driver's window, wedged himself in the small back seats, curled up and nodded off. Not used to being in a car that actually moved, he had woken up when the car started, and stood up to see what was happening!

As Rod told us, "I looked in the rear view mirror to wave to you guys, and all of a sudden the only thing I could see was the Hound of the Baskervilles staring back at me! Scared the living crap out of me!" Dom sold up his panel beating business, retired and took Johnny home to guard his grappa plantation, we moved to the new factory, and that was it. But next time a junkyard dog latches onto your arm and won't let go, don't worry - he's probably just looking for a bit of company!



Australian Commercial & Entertainment
Technologies Association

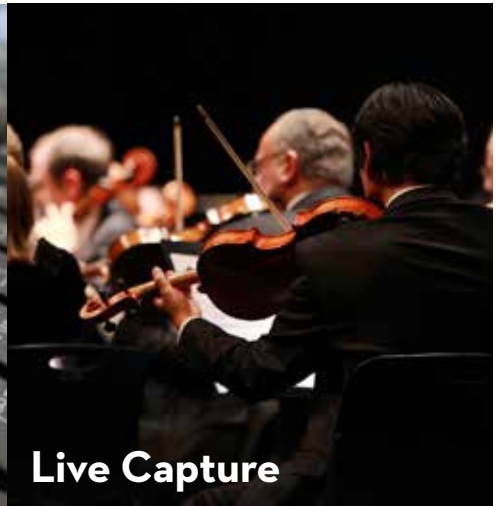
One Industry, One Voice.



Rigging



Audio



Live Capture



Manufacturing



Lighting & Drapes



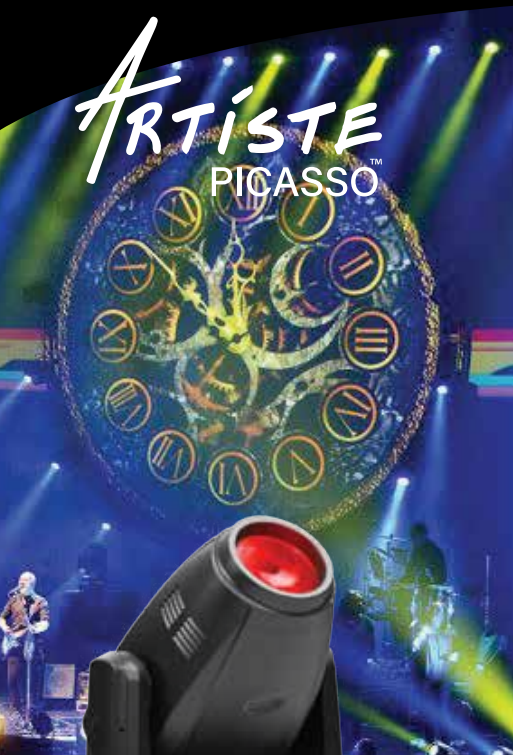
Filming

Your industry, working for You.

Please support us
by joining ACETA:
aceta.org.au



THE MOST COMPLETE LIGHTING ENSEMBLE

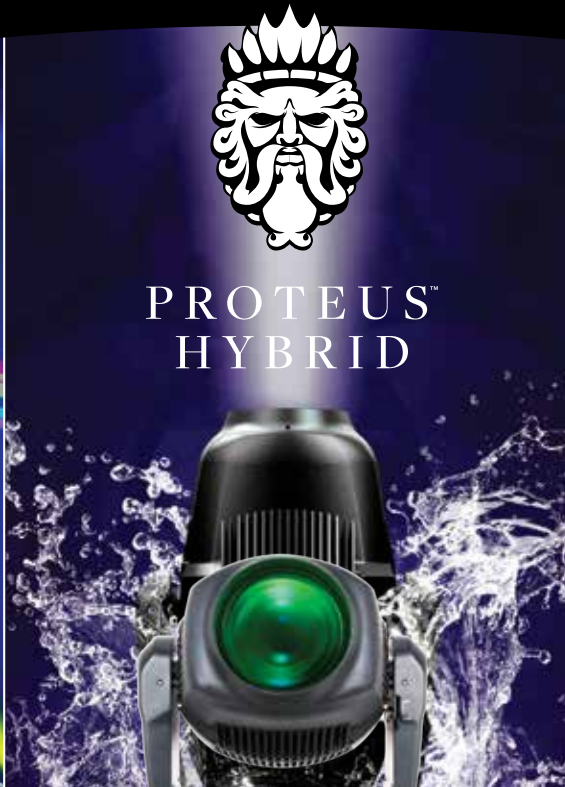


ARTISTE
PICASSO™



ARTISTE
PICASSO™

- FULL CMY COLOR MIXING & LINEAR CTO COLOR CORRECTION
- 8-FACET AND LINEAR ROTATING PRISMS AND 4-BLADE ROTATING FRAMING SYSTEM



PROTEUS
HYBRID™



PROTEUS
HYBRID™

- IP65 RATED 3-IN-1 HYBRID BEAM, SPOT, WASH LUMINAIRE
- FULL CMY COLOR MIXING AND LINEAR CTO COLOR CORRECTION
- 8 ROTATING INTERCHANGEABLE AND 14 STATIC-STAMPED METAL GOBOS



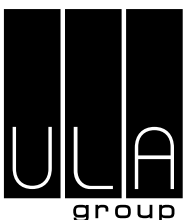
DARTZ
36🎯



DARTZ 36🎯

- TRUE LED BEAM/WASH MOVING HEAD
- 15 STATIC GOBO'S
- 6 FACET LINEAR AND 8 FACET INDIVIDUAL ROTATING PRISMS

**CREATE THE VISION
DELIVER THE EXPERIENCE**



NOW AVAILABLE AT ULA GROUP

1300 ULA GROUP

| INFO@ULAGROUP.COM

| ULAGROUP.COM