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THE TOURING ISSUE

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David Byrne
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Jim Jefferies

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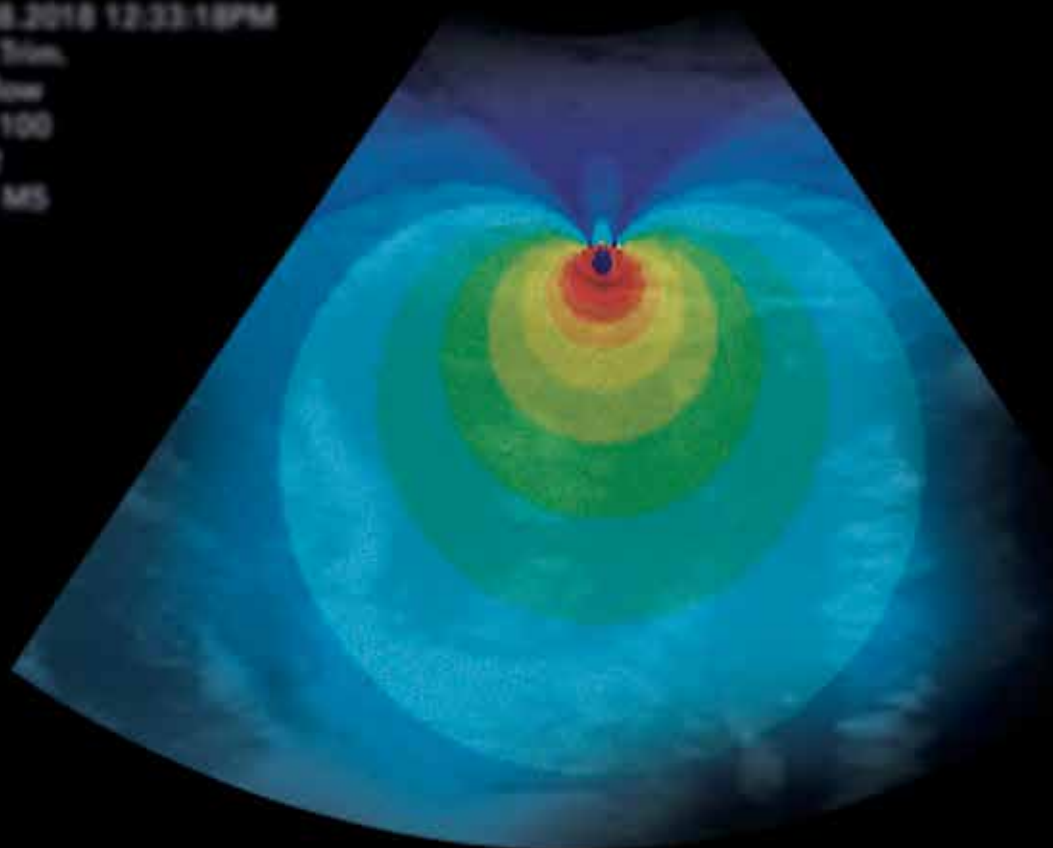
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Roady4Roadies

Roady4Roadies is a charity walk for crew that takes place nationally in Sydney, Melbourne, Brisbane and Perth on Sun 10th March and Adelaide on Sun 24th March. It's open to the public and industry alike, with 100% of ALL profit going to the Support Act 'Roadies' fund for road crew who may have fallen on hard times.

The day commences with a leisurely walk in each capital city to their chosen venue, culminating in a family day of fun, education and entertainment. Following a BBQ, the Crewathlon, prizes and Roady Games for the kids, there'll be educational presentations on the vital and creative roles crew play in live music performance, concluding with live entertainment from participating artists.

The walks will be monitored by a volunteer crew and paramedics. So put on some walking shoes and put your hand in your pocket for this worthy cause, an often forgotten sector of the Australian concert/touring business.

Tickets are now on sale through Moshtix at www.moshtix.com.au/v2/search?query=roady4roadies&v2=1

All walk participants receive a free t-shirt, laminate, lanyard and R4R wristband, with water and sunscreen provided along the way. Tickets just \$30.00 plus booking fee!

All proceeds from the Roady for Roadies walk will support the work of Support Act, an Australian music charity which helps artists and music workers who are experiencing some form of crisis. The Support Act Wellbeing Helpline is a free, confidential 24/7 counselling service that is available to anyone working in Australian music who needs to talk to someone about any aspect of their wellbeing. #1800 959 500.

How You Can Help

Buy a ticket and share if you care. Roady4Roadies is intent on bringing public awareness to the pivotal role crew play in live music in this country, the talents and skills 'roadies' bring to any live performance, highlighting the critical issues surrounding their wellbeing, and raising desperately needed funds to help those in crisis.

Design Quintessence take on Protos

Established in July 2018, PROTOS Load Monitoring Systems specialise in load and force monitoring systems for the entertainment industry.

"The entertainment industry is constantly and quickly adapting to keep up with the latest developments. While the audience's hunger for state of the art shows keeps growing, concerts, plays and shows are constantly evolving and it seems like each iteration has to be more spectacular than the last," says Jasper van der Sluis, director and co-owner of PROTOS along with his brother Cor van der Sluis. "Through our work with Prolyte and Doughty Asia Pacific, we have noticed a strongly growing demand for force measuring equipment on a global scale. A demand for a system that is easy to set up, understand and above all, a system that ensures a safe working environment."

PROTOS was founded to cater to these needs. Because of the unique features of

the force monitoring systems, in conjunction with the global service they offer, the newly established company has already acquired partners in various countries around the world such as Holland, China, Canada, Australia, India and counting.

PROTOS is now exclusively distributed in Australia by Design Quintessence Pty Ltd. (Tel 02 9649 2266 / Email info@dq.com.au). For more information visit protos-one.com or email info@protos-one.com



Ken Sanders and Tony Chamberlain

PSAV gobble up Encore Event Technologies

DALLAS: The Freeman Company and PSAV just announced that Encore Event Technologies, the in-house AV Goliath owned by Freeman, is now part of PSAV. In other words, the United States in-house AV business is now utterly dominated by one firm. This will cause much pain in the USA.

It means Australia's Encore Event Technologies now has a new owner. PSAV almost snagged the business here when they were the under-bidder to buy Staging Connections, back in mid 2015. (Freeman won Staging Connections, and changed the name to Encore a year ago).

The new combined business in the USA will now reap considerable benefit within the walls of hotels and convention centres where it controls how much anyone spends on anything from a white board to an entire event.

The prices they charge are mind boggling. I spoke to 25 venues across the USA over the last year and compared events costings. Some unionised venues with a PSAV or a Freeman branded in-house AV supplier quoted triple prices compared to others,

with the gold standard in price gouging applying at almost all Vegas venues – where the common complaint was that no event could set a firm budget, because everything is a surprise. Not a nice one, a nasty one.

While PSAV (1,500 hotels) and Encore (450) were competing, Hotels at least had a choice. There is no national 'third player' in the market in the USA, and a deal such as this would not pass anti-competition laws in Australia. Here, Encore are the leader in-house, but have stiff competition from AV Partners, Microhire and AVD.

The hotel industry has been brutalised by the big aggregators – who are setting terms and conditions and interrupting the market. They see the Audio Visual offering as an answer, and are leaning hard on the in-house suppliers to ratchet up the everything, especially consumables and non-discountable line items like labour and transport.

Prior to now, Freeman and PSAV had been gobbling up smaller firms. By example, PSAV had digested the gloriously named SWANK AV while Freeman took over AVT.

What does it mean in Australia? Probably not much for now, but given that PSAV is controlled by the delightful Blackstone Private Equity vulture fund (Motto: "We see things other people can't"; which makes CX think we probably need to get to Specsavers real soon now) you can bet that Encore Australia CEO Tony Chamberlain will get some pressure to earn more, more, more. They may also try to buy some of their annoying competition down under.

But thankfully, they can't buy too many more, without falling foul of our competition laws.

by Julius Grafton



New speaker cart

More Audio for Sport - The P.A. People prescribe Bose and Linea Research for Sydney FC.

Sydney's The P.A. People have recreated their iconic 'Speaker Carts' that were originally designed two decades ago to provide quality sound reinforcement in stadiums, and in the process, have significantly expanded their inventory of Bose ShowMatch Delta-Q cabinets and Linea Research amplification.

"Shortly after we deployed our first Bose ShowMatch system for the Sydney Kings in Qudos Bank Arena in October, we were approached by Sydney FC to look at providing a system for their home matches at Jubilee Oval in Kogarah and Leichardt Oval over the next three years," commented Chris Dodds, Managing Director of The P.A. People. "We were very happy with the sound of the ShowMatch system for the Kings, so we set about working out the best way to deploy a system around a football field on a weekly basis. The end result is a reimagining of the Speaker Carts that we built for SuperLeague over twenty years ago."

Each Bose 'Cart' is designed to house an array of ShowMatch cabinets flanked by two SMS118 18" subwoofers. Under the rear sub cabinet is an amplifier sleeve that houses a Linea Research 44M20 four channel amplifier and a network switch. Under the front sub is the steering axle, while the space behind the array cabinets houses a flip up panel

concealing the mains and signal connector panels.

The 'Carts' leverage ShowMatch's unique Delta-Q array technology. In its standard configuration each 'Cart' array comprises a SM20 20degree, SM10 10 degree and an SM5 5-degree cabinet. As the vertical coverage decreases the output of each cabinet increases, providing a natural gradient of SPL without having to shade the power applied to each box. Coupled with the selection of wave guides the ShowMatch system is able to provide a high-power full range solution with exceptionally even coverage both vertically and horizontally. Array cabinets and subs can be added to the 'Carts' to achieve appropriate vertical coverage and sound pressure levels for entertainment applications.

Mechanically the Bose 'Carts' ride on four turf tyres and feature a front retractable draw bar and a concealed rear hitch enabling the units to be towed in a line. These are towed into place behind a Kubota diesel UTV which forms part of The P.A. People 'Cart' package. Each unit is 2400mm long, 800mm wide and sits at around 900mm high, and comes complete with a full set of 75mm sports grade padding to the rear and ends, to reduce the risk of player injury should they inadvertently come in contact with the system.

The system has been matched with amplification from Linea Research in the UK. Celebrating fifteen years in business, the team from Linea have developed an amplification platform second to none. Both of The P.A. People's ShowMatch systems are powered by Dante-enabled Linea Research 44M20 amplifiers, each capable of developing 20kW of power over four channels in a 2ru high chassis. As you would expect, the amps feature comprehensive signal processing and management, and their own control application.

The P.A. People have again opted for an entirely Dante-based signal distribution system for the Cart system. The system is in and out of the venue every match so being able to connect a single loom for signal distribution and power is great. Each unit is interconnected with a loom comprising a 32A Ceeform mains cable and a single mode OpticalCon four core fibre cable. Optical interconnection was chosen for electrical safety, eliminating the possibility of earth loops from different mains sources, as well as providing a second fibre path that can be utilised for video or comms applications.

The system for Sydney FC is supplemented with a comprehensive Clear-Com Communications system centred around a HelixNet digital partyline system and a FreeSpeak II wireless solution.

"The P.A. People can now field a 120 cabinet ShowMatch system from our own inventory. The options of ground stacking, flying in an arena or using our new 'Cart' system means we are able to provide the highest quality sound reinforcement for any sporting venue or fixture. It is great to be back in the large-scale sound reinforcement market with a new market leading sound system. We look forward to letting our customers hear what it can deliver for them" Chris Dodds concluded.

"The P.A. People have been excellent partners for Sydney FC in both the provision of fantastic sound and audio systems for Sky Blues Members and fans at our home. We are delighted to have them as a Sydney FC partner and are excited about continuing to work with them on our Sydney FC events," said Danny Townsend CEO of Sydney FC.

Soundwave liquidators pay out - less than 1%

Late in 2018, the cheques arrived in the mailboxes of those who lost out when Soundwave went under. After all was said and done, there wasn't much left for the creditors. CX was sent confidential copies of some cheques and the accompanying letters from the liquidator. They were not even able to get to 1% of monies owed - the cheques are for an underwhelming 0.987%.

On downloading publicly available documents relating to the liquidation

from ASIC, the list of production and rental companies in the hole covers most of Australia's big players, more than a few of the mid tier, right down to small specialist companies and individuals.

While most will recover, some have not. Debts owed to companies range from \$300,000 down to \$400.

We assume the \$3 million owed to the ATO was collected. Headliners Soundgarden,

trading as 'Stage Mutha Fakir' were owed an astonishing \$2.2 million. What really intrigued us, though, was why international ticket shysters Viagogo are listed as claiming a cool \$585,000, with \$100,000 agreed as owing by the liquidator. What possible truck could the festival have had with that nest of vipers?

All up, \$17 million was claimed as left owing, with \$10 million agreed by the liquidator. The majority of that was to Australian businesses and organisations.

by Jason Allen



RIP Peter Hassall 30/06/1965 – 12/12/2018

The theatre and special event industries were shocked at the sudden and unexpected death of industry pioneer, Peter Hassall, at just 53. Peter made such an impression on so many. He was an icon and an inspiration.

Peter started dabbling in lights at roller discos back in the early 80s. He became the Technical Director of the Cairns Civic Centre before travelling the world with Tjapukai Aboriginal Dance Theatre from 1988 and starting his own AV company 'Stageworks' at just 23 years of age. He went on to partner with national chain Staging Connections and opened offices in not only Cairns but Port Douglas, Townsville and Hamilton Island. He purchased local Cairns businesses Double Up Video and Progear. "Peter would do anything for his team and likewise they for him – he created such an amazing work family and through that, they collectively created one of the most successful and dynamic businesses in Far North Queensland with Stageworks Australia," said long-time friend and employee Dior Yarwood.

Peter developed relationships with the tourism and convention bureaus to drive business into the region and showcase the best of the far north.

Inspired to live and work in Greater China, Peter sold the empire he'd built to the Staging Connections Group and ventured to Macau to work with Offsite Connections.

Nick Millis recalls "In 2013 Peter was instrumental in the successful merger of Offsite with the MCI group. Within MCI, Peter was like a rock star – always entertaining, and so hospitable. He was known as the 'talented Aussie' and was legendary in Macau, both as a sensational creative director and producer of spectacular events. He was a leading expert to global enterprises and brought his authentic generosity, boundless energy and leadership to mentoring a newly formed team, inspiring them with his charisma and sense of fun. You always knew where Pete was – surrounded by a throng of 'fans' hearing the tales of a true event supremo."

In March of 2017, Peter decided to leave the expat life of Macau and return to Aussie soil. COO of MCI Group Asia Pacific Oscar Cerezales recalls "he realised he wanted to prioritise the things that meant the most to him – returning to Cairns, being closer to his family and friends." Oscar describes Peter as a frank, honest, professional man, who is greatly missed in Macau.

It was in December of 2015 when Peter was seeking a high-end producer to open St Regis in Macau and engaged the services of Patrick Mist. The two hit it off and decided one day they would partner together in a business of their own. That happened in late 2017 in the shape of Corventus. Peter was in a great place, working out of Australia again, motivated and excited to be opening a new office in Singapore this year.

Peter's ability to visualise a concept and create something so memorable, so unforgettable, and be able to communicate that to people and get them excited about a concept, was nothing short of brilliant. He made lycra chair covers a must-have item at any event, purchased fabric in downtown LA to have costumes made for the Tourism awards and brought floating stages and aerialists to Cairns, well before it was 'a thing'. He was an absolute legend and, without a doubt, well before his time.

What he dreamed, planned, realised and achieved, and the lives he shaped and changed in his 53 years, is simply inspiring. He wasn't afraid to try, even if he failed. Ben Elliott, now the Managing Director of LIVE Events Sydney, came to work for Peter in May of 2000. He recalls "Peter was one of a kind and taught me so much. His leadership style was one that I really enjoyed – employ people you can trust, that know what they're doing... and let them do it. He taught me to do things properly as you are judged on the process, not just the outcome. I will forever be grateful for the opportunity and experience he gave me."

Peter was a mentor to so many and well respected in the theatre and special event industries. It's because of Peter that so many have gone on to work internationally, to travel and tour the world, and to manage and build their own businesses and careers in the events industry.

Notably, Paul Whitby (Freelance Lighting Designer), who started volunteering at the Cairns Civic Centre as a 13 year old. His first job for Peter was sorting gel colour, which Paul thought at the time was the worst job in the world. It taught him the lighting colour spectrum and launched his career. Dior Yarwood (Senior Producer, Kojo) started working for Peter in 1990 and became Peter's Operations Manager, then General Manager and his closest confidant for more than 28 years.

Dior said "Peter was an amazing leader. He had this incredible knack of being able to walk into a ballroom or venue, like a ringmaster. The crew would be absolutely exhausted, nothing seemed to be going right. He would bring everyone together, more often than not feed them, listen to their concerns, make them laugh (or at least smile), give them a quick rub on the back and re-energise them. When doors opened on an event and the client and guests were gobsmacked – it was all worth it".

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Shure MV88+ Video Kit

The MV88+ Video Kit features a digital stereo condenser microphone that provides content creators with an all-in-one solution for capturing professional-quality recordings on-the-go. The kit also includes a Manfrotto PIXI tripod, phone clamp, and mount, as well as iOS and USB-C cables. Compatible with iOS and other selected devices, the MV88+ Video Kit equips users with a variety of new and improved accessories, arming them with the tools and versatility needed for recording on-the-go.

Australia: Jands www.jands.com.au
or (02) 9582 0909

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



EAW RSX212L

The EAW RSX212L is a 2-way self-powered loudspeaker, part of the Radius Series, and fitted with 2 x 12" in the LF with 2.5" voice coils, and 2 x 1" exit, 1.7 in voice coil compression drivers in the HF. The LF is vented and the HF horn-loaded. The unit is bi-amped, and features EAW's Focusing and DynO processing. Its operating range is 50 Hz to 19 kHz, with a nominal beamwidth of 90° horizontal and 12° vertical. It produces Peak SPL of 142 dB LF,MF, HF. Designed to streamline setup and deliver maximum results in minimum time, RADIUS couples unique and intelligent features with EAW's signature acoustical design to deliver solutions for rental firms and system integrators. The RADIUS articulated array features OptiLogic, providing automatic array self-detection and instant optimisation including air loss compensation and more.

Australia and New Zealand: PAVT
www.pavt.com.au
or +61 (0) 3 9264 8000



NEW

WorkPro LightShark LS1

LightShark is a cross-platform lighting control system, with up to 8 DMX universes, which has an ultrafast web-based User Interface, being able to connect up to 3 devices at the same time to create your own multiscreen control system. Thanks to this concept, LightShark features a plug & play solution, avoiding the inconvenience of having to install any software or driver on a computer. A web browser is all you need to have complete access to the software, no matter the Operative System (iOS, Android, Linux, Windows, macOS).

Australia and New Zealand: TLC
thelightingcollective.com.au
or +61 (0) 7 5539 2142

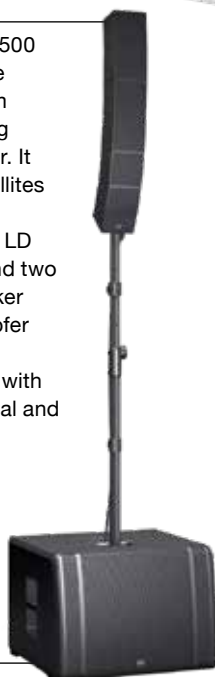


LD Systems CURV500 TS

The compact, highly portable CURV 500 Touring Array System is fully scalable with up to four interlocking aluminium unibody line array elements operating on a SmartLink plug and play adapter. It comes with two standard CURV satellites that feature a single 4" midrange and triple 1" high frequency drivers using LD Systems' WaveAhead technology, and two duplex satellites with twice the speaker complement. The ported 15" subwoofer base includes the CURV 500 Touring Array System's class D amplification with multiband limiter, short circuit, thermal and overcurrent protection.

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

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



Mackie DRM Series

Mackie's all-new flagship DRM Professional Powered Loudspeakers are available in 1600W 12" DRM212, 1600W 15" DRM215, 2300W 15" 3-Way DRM315, 2000W 12" DRM12A Array, and 2000W 18" DRM18S Subwoofer. All models are available as passive boxes. DRM Series Loudspeakers offer all the configuration options expected for professional applications, equipped with M10 flypoints, dual angle pole mounts and available in line array configurations for maximum versatility. Both the DRM212 and DRM215 feature angled cabinet designs to allow use as high-powered floor monitors. At the heart of every DRM Series loudspeaker is Mackie's Advanced Impulse DSP module. Precision crossovers, transducer time-alignment, and meticulously tuned FIR filters overcome inherent physical attributes that can contribute to poor sound, especially at high SPL.

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

New Zealand: Music Link www.musiclinknz.co.nz or 09 250 0068

Chauvet DJ Intimidator Spot 360 White

The Chauvet DJ Intimidator Spot 360 White is a 100 W LED source fitted with dual rotating prisms. Beam angle can be decreased to 5° using the manual zoom. Motorised focus gives you the ability to create sharp gobo patterns from almost any distance and Totem mode lets you keep the beams forward. Intimidator Spot 360 lets you set, save, and recall one scene manually, directly from the full-colour LCD display. Wireless non-DMX control is available using the optional IRC-6 remote. Intimidator Spot 360 uses powerCON-compatible power input/output connections for power linking.



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

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

Prolights AIR5FAN Batten

Prolights AIR5FAN is a pixel-FX moving head, able to control the spread of its pixels through the motorised lens system, passing from a sharp linear beam effect to a multi-ray effect. Powered by 5x40W RGBW/FC LEDs, with a 2° beam each, delivering brightness for large setups and featuring infinite rotation over pan and tilt. AIR5FAN allows for the mounting of a mirror on its housing for added effects, as the moving projecting surface bounces beams from other light sources.



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

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

GEAR

GLP Impression FR1

Using a single, high powered 60 Watt homogenised RGBW LED, the impression FR1 has a 3.5° to 35° zoom range. Featuring 16 bit dimming and 16 bit position control through a range of 540° of pan and 220° of tilt, the FR1 also has bi-directional continuous pan rotation at varying speeds from slow and gentle, to extremely fast. A variety of dimmer curve options, along with a full PWM range and other settings, are available from the on-board menu with critical functions also available to control via DMX.



Australia: TLC thelightingcollective.com.au or (07) 5539 2142

New Zealand: Kenderdine Electrical kelpls.co.nz or (09) 302 4100

Maxell 5000 Series

Four new laser light source 3LCD projectors are available in this new range, offering both WXGA & WUXGA resolutions and 5,000 and 6,000 ANSI lumens, and with approximately 20,000 hours (normal mode) of operation time and being virtually maintenance free, offering a dramatic reduction in total cost of ownership. 6,000 ANSI lumens brightness and 1,500,000:1 contrast ratio results in a super bright display with outstanding image clarity and uniformity. Additionally, these projectors come with lens shift for easy installation and a suite of advanced features including High Dynamic Contrast Range (HDCR2), 2 HDMI ports, and Hitachi/Maxell's original technology Accentualizer. For added peace of mind, they are backed by a generous 5 year / 10,000hrs warranty.

Australia: Hitachi Australia
www.hitachi.com.au
or 1800 448 224

New Zealand: Hills
www.hills.co.nz
or 08001 44557



HRT Huddle Hub One

HRT's Huddle Hub One is the first multi-session wireless presentation system in the industry, supporting up to four concurrent sessions on the same hardware. Huddle Hub One supports both legacy-style (device to display) for traditional meeting room use, and BYOD (device to device). Beyond enhancing the traditional presentation experience, lowering the cost per concurrent session, and unleashing new huddle spaces, HHO offers advanced videoconferencing integration. By connecting a USB Webcam directly to HHO you can reduce USB cable clutter on the conference room table.



Australia and New Zealand: AV Glue
avglue.com.au or
+61 (0) 7 3376 4745

Tannoy VLS 5

The VLS 5 is a 480-Watt passive column array loudspeaker ideally suited for challenging acoustic and architecturally sensitive spaces where speech reinforcement is required. Applications include airports, train stations, conference centres, houses of worship, stadium concourses, museums, theme parks and hotels. The vertically arrayed mid-range drivers provide high-intelligibility speech reproduction packaged in a slender and narrow profile, aesthetically refined, painted aluminium chassis that facilitates quick and easy installation, including ceiling mounting in long narrow corridors.

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

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



NEW GEAR



Kramer ASPEN-32UFX

The ASPEN-32UFX is a 32-port matrix switcher for SDI signals of up to 12G SDI. Each SDI port can be defined as either an input or output, enabling flexible configurations such as a 1x31 distribution amplifier, 31x1 switcher, 16x16 matrix switcher or any other possible input-output combination. ASPEN-32UFX is easy to operate and control through the network using the intuitive web pages and through RS-232 using a serial controller.

Australia: Kramer

www.kramerav.com/au or (07) 3806 4290

New Zealand: Kramer

www.kramerav.com/nz or (09) 215 8083

Riedel RSP 1232HL

Featuring multiple full-colour multitouch displays, 32 hybrid-lever keys, the ability to leverage apps for multifunctionality and adapt easily to various workflows, the RSP 1232HL's connectivity includes AES3 digital and AES67 via two fiber SFPs and two RJ45 connections. Other features include stereo speakers, front-panel mic mute and sidetone adjustments, front/rear USB, Bluetooth and NFC connectivity, GPIO and 4-wire ports, and a light sensor for auto-calibration of screen brightness in changing light environments.

Australia and New Zealand: Riedel Australia

www.riedel.net.au or +61 (0) 2 9669 1199

Sennheiser SK 6212

The Sennheiser SK 6212 is a mini-bodypack transmitter for the Digital 6000 wireless microphone system. The mini-transmitter is an inconspicuous, ultra-compact and lightweight package with the same reliable and spectrum-efficient transmission as that offered by the other Digital 6000 transmitters. With comfortably rounded corners and edges, the mini-bodypack is about 63 x 47 x 20 millimetres in size and a weight of approx. 112g including battery. The engineer has full control over the mini-transmitter via an OLED display and function buttons. As with all Digital 6000 transmitters, the SK 6212 can be IR sync'd, saving time and hassle – especially in live environments. The flexible antenna is detachable and field replaceable.

Australia: Sennheiser
en-au.sennheiser.com
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DAVID BYRNE



by Cat Strom

Photo Credits: Rob Sinclair

American Utopia utilises a flexible lighting design, chosen to light people and objects, and not for effect

What happens if musicians are free to move around the stage and are not tethered to a drum riser or mic stand?

That was the question that David Byrne posed to his collaborators designing his American Utopia show.

The result is deceptively simple; a big empty stage with three walls around it. It's an illusion

of simplicity as behind the walls are 150 percussion instruments, all stored off stage, and above, a complicated method of lighting.

During the show, the completely bare stage houses 12 people constantly on the move. There is no backline, no light fixtures, and no set.

Within such parameters, lighting designer

Rob Sinclair had to stretch his imagination and draw on his vast experience to create a design that would satisfy David Byrne's creative picture. There were three overhead trusses; front, midstage and upstage with Martin MAC Viper Performances and Atomic LED strobes. The Atomic LEDs create a work-light look and strobe only in the final chorus of one song. A large horseshoe shaped truss from which the chain curtain hangs, was on Kinesys so it could fly during the show.

The Scenic Chain Curtain that forms the three walls offers infinite exits and entrances and is also a beautiful texture to light. Two rows of GLP X4 Bar 20s, fitted with custom top



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hats made by Upstaging so you don't see the source, enable him to light the top and bottom in different colours.

David requested no tricks or light beams moving around, no haze, in fact, no light show per se. The 12 performers onstage are lit by the roof of 66 Martin MAC Viper Performances all running on the BlackTrax tracking system.

"This meant that any light in the rig could be assigned to any person, change any of the parameters to follow them around wherever they go," said lighting director and associate designer Douglas Green. "Everyone wears the

same grey suit for each show into which two BlackTrax beacons are sewn, one on each shoulder. A 'centroid' is created between the two trackers which becomes the point that the lights follow. The system only needs to see one beacon (they work by line of sight to cameras in the rig) to work but a live backup is necessary in case one goes down or someone flicks their hair over it, for example."

Douglas admits that it took quite a bit of fiddly programming but fortunately he was working with Sam Augustus, BlackTrax programmer on the road, and Oli Metcalfe who programmed the show initially.

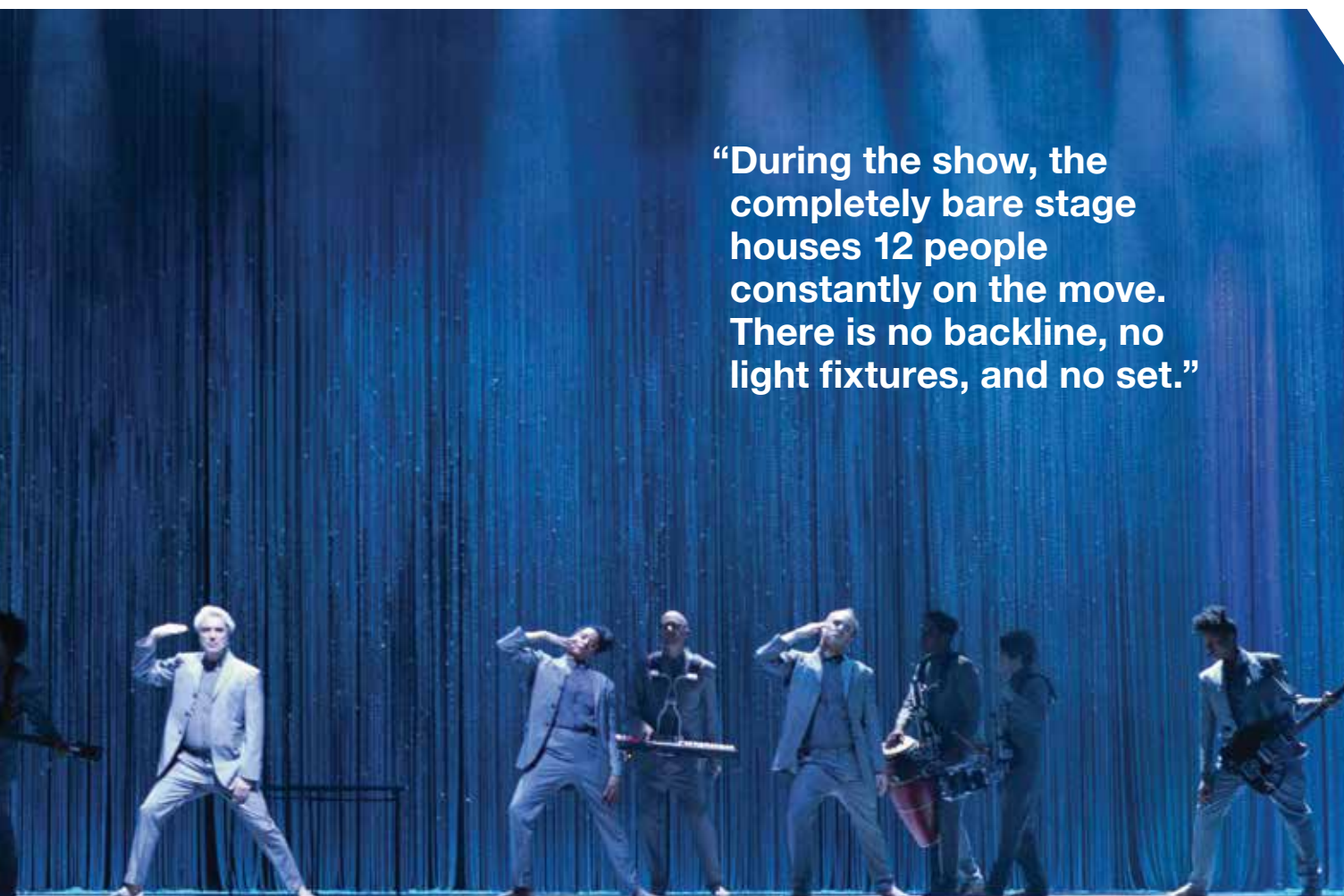
"BlackTrax is incredible but it does add another layer to the programming," he said. "What's been really good about it is that it allows us to do things with moving lights that you couldn't ordinarily do with followspots. Without it, we would need 12 truss mounted followspot operators just to get a front light on each person. Plus we have gobos, colour changing and framing - it's not a followspot replacement, rather a whole new creative tool."

Also in the rig was a single theatrical ghost light that David holds for one song, a custom made footlight for a song, and two X4 Bar 20s on a boom to the side of the stage which shine through the chain.



Douglas

“During the show, the completely bare stage houses 12 people constantly on the move. There is no backline, no light fixtures, and no set.”



With a background in theatre and corporate work, Douglas has enjoyed his foray into concert touring. Having trained as a dancer, Douglas has a keen interest in dance and theatre lighting and he was able to bring those skills to the American Utopia tour, which is essentially a choreographed rock show.

“Obviously it’s Rob’s design but as his associate, having an idea of how people move in space and how to light them has been very helpful,” commented Douglas. “Chris the backing singer and dancer also operates as a dance captain while we’re out. We talk every day about what’s changed

about the rig and the space and how it’ll affect the performance that day.”

Rob and Douglas worked closely with choreographer Annie-B Parson and David Byrne to collaboratively build the show rather than just apply a lighting design to a band. All the design and production elements are very closely knitted together to create a cohesive piece.

Douglas ran the show on an MA Lighting MA2 fullsize with two NPUs onstage. Again for a show that looks so simple, there are quite a lot of complicated tricks in the programming – subtle video mapping across the X4 Bar

20s create entirely unique looks, and the BlackTrax is a whole new element.

“The lighting is run very much like a theatre show with a cue stack,” explained Douglas. “The set list is not changed often, visual narrative and flow of the show is integral and the changeover of instruments between songs is quite complicated. I operate the whole show live — there is no timecode or any sort of triggering. We do however use some features within BlackTrax to deal with some of the potentially impossible cueing challenges.”

Sydney Dance Company

BOGOTA TO CARACAS, 1992

by Roderick van Gelder



Loading the truck in Caracas

In 1992 Sydney Dance Company performed ‘Some Rooms’ in Bogota and Caracas as part of a world tour. I was the production manager and lighting designer. The challenge was to get the sets for ‘Some Rooms’ from Bogota to Caracas on a 3 day turn-around. The roads are notoriously bad. Many trucks are held up, and if nothing of value was found, would be burned, so it had to be airfreight. What complicated things is that the set for “Some Rooms’ consisted of large mesh panels, each 2m wide and 4m high, that were covered with rear-projection material.

We had built large crates to safely freight them around the world. Other interesting items were a wall of changeroom lockers, a double sized bed that was flown in during the show with dancers on it and the pièce de résistance: a cast-iron bath tub. The bath tub was used by Janet Vernon and replacing it with anything else was not an option. And obviously we travelled our own Tarkett. It was mainly the size of the panels that caused the problems in freight, it would only fit in a 747 (this is well before Airbus came in the picture) or a Hercules, neither are on a regular route between Bogota and Caracas.

But we had some luck. Circus Oz was performing in Caracas and had to get to Bogota, facing very much the same problems. The solution was found by the Caracas Festival who managed to arrange a Hercules from the Venezuelan Air Force to take Circus Oz to Bogota and collect us on the way back. Awesome! I had decided to fly with the freight because, hey, how often do you get a chance to fly in a Hercules? The only drawback was that the plane had to leave at 7AM and we were told to be at the airbase no later than 5AM to load. Not ideal after bumping-out the night before but you did what had to be done to make things happen.

During the bump-out the production manager from the Bogota Festival came up to me and explained that he had been in touch with the airbase and the flight wouldn't leave until midday so we only had to be there by 10AM. Perfectly fine with me so we could have a few drinks with the local crew.

The company and the rest of the SDC crew were travelling later that day on a commercial airliner and I was picked up by the Festival guy at 9:00AM. There was a small problem with a flat tyre on one of the trucks. They used two smallish trucks to freight things around, but we still made it to the airbase by 10AM. And that is when things turned for the worse. The sentry at the gate would not let us in. There was a lot of to-ing and fro-ing until a bloke with an awful lot of gold on his uniform popped up. Trying to explain to him that we were booked on the Venezuelan Hercules that was on his airbase he uttered the words I really did not want to hear: “El avión que salía a las siete” or in English: The plane that left at 7? The Festival had f****d up and the plane was gone. I expanded my collection of Spanish swearwords substantially before we headed back to the Festival office.

They were very apologetic and promised to start organising a different plane straight away. They also suggested that I should go back to the hotel, have a swim, and they would be in touch as soon as they had a plane. I politely declined, and explained that I would be more comfortable sitting in that chair across his desk and monitoring progress. And yes, I spoke enough Spanish to follow his phone conversations. They did try very hard but by the end of the day, still no



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Unpacking projection screen



Cutting the panels

So opening night was cancelled, the festival director was furious, but we kept the high professional level of the performance. In hindsight I guess I am lucky I made it out of Caracas alive...



View from the aircraft



Loading the plane



Unloading in Caracas



On stage in Caracas

solution.

Back the next morning, pretty much the same scenario. Me sitting in one corner, them calling everywhere trying to find a plane. I am getting nervous because we are opening the next night in Caracas. I managed to get hold of the crew who were now in Caracas, having a wonderful time around the Embassy swimming pool, and told them to start bumping in the next morning regardless so that if I made it in time, we had something to work with. Just after lunch, a breakthrough; they had found a plane! One small problem, it was a DC3, not quite the same size as a Hercules. But it was all there was so off we went to the airport. The big problem was the size of the loading door on the side of the plane, 2 metres wide and only 1.8m high. The crates with the set were never going to fit.

The solution: on the tarmac next to the plane, open the crates, take out the panels, very carefully cut the projection material from the frame and cut the frames in half with an angle grinder. To make matters more fun, it had started to drizzle. All of this was taking a lot of time but we managed to get everything loaded onto the plane. At that point I learned something new about the DC3; it has a payload of 2.5 tonne. It was the pilot who told me this and then asked me how much stuff we had on his plane. From the carnet I knew it was a little over 3 tonne, maybe a quite a bit over 3 tonne, so I lied and told him around 2.5 tonne. He looked at me, looked at the plane suspension, looked at me again, and looked at his watch. It was getting close to 5PM, and he told me we couldn't leave today and had to wait for sunrise the next morning. No discussion was entered into.

Back to the hotel for a final night rest. I also took the opportunity to raid the hotel mini-bar (and the room dolly trolley) of mini bottles of vodka, bourbon, cognac and rum because the second thing I learned that afternoon was that there were only two seats on the plane, one for the pilot and one for the co-pilot. I would be travelling in the unheated cargo hold, sitting on a skip.

The next morning I met the pilot and co-pilot at sunrise and that is when I learned the third nugget of information, Bogota, already at 8500ft above sea level, is surrounded by a 17000ft mountain range. With the plane being overloaded it would take quite a bit of time to clear the Cordillera Oriental! But finally we are off and flying, I settle in on my comfy wardrobe skip with my selection of grog and sandwiches I snatched from the hotel. A good hour and a half later we are still circling trying to clear the mountains, it is becoming obvious it is not going to happen. The pilot called me to the cockpit and explained the situation. He also explained the solution. Instead of clearing the mountains, we will fly in between them. I already had firm suspicions on how he usually made his money, this pretty much confirmed that. From my skip I could see outside through a small window, I swear I could see the wings touch tree tops. I have forgotten how long it took to clear the mountain range. I was in complete survival mode and locked out the whole time/space continuum.

On the other side of the mountain range we had to find an airport to refuel the plane; we were running on empty. We landed safely on a minute remote airfield. They scrambled to find a Customs officer because the freight and I had to enter Venezuela here or the paperwork would be a nightmare once we got to Caracas. Luckily I had scored the whole touring petty cash and the money earmarked for per-diems on me. I had to pay for the fuel in cash (US\$1200) and grease a few official's palms to encourage a speedy process without too much inspection of goods. Confirmed my thoughts about the income sources of the pilot.

We finally made it to Caracas by 5PM on the day we were supposed to open. There was a whole team of welders and set-builders standing by to put everything back together again but I stood firm in my refusal to run the show without a proper dress rehearsal. Remember the flying bed? That was only one of the many things that moved on and off, up and down on stage whilst dancers ran around.

So opening night was cancelled, the festival director was furious, but we kept a high professional level of the performance. In hindsight I guess I am lucky I made it out of Caracas alive...

The collage features a variety of wall panels and a stage scene. At the top left, a man in a tuxedo stands next to a **Honey Wall** panel. To the right is a **STEALTH WALL** panel. Below Honey Wall is a **GEO WALL** panel. To the right of Geo Wall is a **Ripple Wall** panel. Below Geo Wall is an **Infinity Wall** panel. To the right of Infinity Wall is a **Mode Wall** panel. Below Infinity Wall is a **Lux Wall** panel. To the right of Lux Wall is an **ORB WALL** panel. Below Lux Wall is a **KLOUD WALL** panel. At the bottom, a stage scene shows a large audience and a backdrop with the text **2018 AWARDS**. The phone number **1800 737 037** and website **www.backdrops.com.au** are displayed, along with the **BACKDROPS AUSTRALIA** logo.



THE TOURING GAMES

by John O'Brien

It's tour time. Passport, itinerary, toiletries - check. Let's rock and roll... Wave goodbye and hit the road for endless partying. It's all sex, drugs and TV smashing, isn't it?

Outsiders might romanticise it that way but most CX readers know something far different. Long days of sweat and toil, endless lack of sleep, unhinged from home life and any routine beyond hotel - gig - airport / road then rinse and repeat - this is the game that you are playing now.

Touring a show has all sorts of ups and downs. Traveling the world but missing home. Hanging out with the cool crew but getting stuck with that irritating so-and-so that is the Tour Manager's pet. Not having to make the bed but waking up every day wondering just which bed you are in. My trick was to make a game within the game.

Accommodation Games

The first round is finding your daily abode. If it's a regular hotel that you've been to before - you're sorted. But, if you are in a new town, with some faded copy of the itinerary, lacking sleep, grumpy, tired and maybe hungover it can be an epic journey just to stake your roof for the night. And you haven't even unpacked the gear yet ...

Even when you do have a place, don't forget the room key. Several times, I've found myself



having to climb up the outside of a hotel to get back to my bed for the night. First time that it happened, the whole band and crew had kicked on after the show and couldn't find a key between us. Hotel management caught several of us scaling the outside, gave us the 3rd degree and frogmarched us to our rooms. We weren't allowed back there again!

Once, I'd been out for a few too many brews and got back to the big old hotel we were staying in. No key - no big deal. Wide awning all around the outside but no access. I stacked a couple of empty kegs, swayed off a street sign and managed to grab the awning, spilling the kegs on to the street. Hanging

in space, it took everything my somewhat compromised body had left to drag myself up and over. Found a mate's room and got in through their window. Did I learn my lesson? Well, no! A tour or two later, different band, different hotel, same dilemma. This time, my room-mate was busy snogging a local and didn't want to be disturbed. I watched the stars for a bit...

Road Games

Another night, my lift home to Melbourne from a show in Geelong disappeared without notice. Faced with a huge taxi bill, I took the option of an hour as the human load bar in the rear of the windowless gear van. Unable to communicate with the front seats, I was reeling from carbon monoxide by the other end. Never again...

One band I was with cut costs by buying their own trailer for stage gear. All good until I got the speed wobbles heading downhill @ 120 kph. Got to 150 before it straightened out and then I slowed to a stop on the next hilltop. Put a jack under the side and the wheel fell clean off. The whole hub had seized and fried itself - and not fallen off at speed! Of course, this was a Saturday afternoon halfway between Sydney and Newcastle. The band in Sydney had a friend traveling up in a van, so we cross-packed on the side of the road and I looked for a wrecker who might have some Ford spares. Duly found, the yard owner threw me a shifter and sent me out back to find a hub. Found one, went back to the trailer and

it didn't bloody fit. Back to the wreckers and they just laughed. Fortunately, a local farmer took umbrage at that and offered to bring his oxy-set over to help get the remains off and new hub on. Only 5 hours late to load in ...

Mind Games - The Tour Bubble

On the road, you spend all your time with the same people every day. The interpersonal dynamics can get pretty interesting and mind games come into play. A bit of casual banter is fun and you often end up with ongoing in-jokes and rituals. Jokes and pranks can be great team builders. On the flipside, I have seen that degrade from harmless fun to outright bullying. Nothing kills a tour vibe quite like tantrums and bitching, making a hard gig even harder.

Which brings me to my favourite tour ritual. If I could, every day between setting up and dinner, I'd try to find 1/2 hour to walk away from everyone and do a lap of whatever block we'd found ourselves on. A great way to get some perspective on an otherwise claustrophobic bubble. One tour, we had a pro crew who weren't into shenanigans, so our daily respite was a reading from American Psycho by our scary system tech. Got us all in the right mindset before the show.

I was definitely not in the right mindset when, in front of everyone, I unloaded on the tour manager first day of a short tour. I'd been

on the road constantly for nearly 2 1/2 years without a break, bouncing from one tour to the next. I really didn't see how fragged out I was and chucked a hissy fit over something completely inconsequential. It cost me a great gig, a 6-month lap of the US and several close friends. Also took me several months of reflection to see just how out of line I was. Some lessons are hard learned.




Sometimes though, it's not your fault. One poor monitor engineer got his marching orders only because the artiste was having a 'moment'. Stage sound was bloody awesome but the talent insisted, so we changed hands mid tour. The new sound was certainly no


better but the artist / paymaster was happier, so we kept our heads low and trucked on.

Relationship Games - Bursting The Tour Bubble

Relationships within the touring party are not the only ones affected by life on the road. You do have friends outside the entertainment / hospitality industries, right? Keeping old

mates inside can be difficult if they think that you are living the high life, hanging with the stars. It's hard to relate back to outsiders that touring is actually long, hard, dirty, stressful, and messes with your mind in all so many ways. I've farewelled far too many at far too young an age for this not to be a real issue.


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As for keeping up a relationship with significant others - you're never home and when you are, you spend the first few days sleeping, maybe settle a bit or just run amok for a while and then piss off to the next gig. Long suffering families can feel a bit left out of the loop. Life still goes on for others when you move to the next venue, blithely ignoring the mess left behind! Treat home like a hotel and there may be no home to return to.

For many, there comes a point when living out of a suitcase gets old. Waking up in a daze, wondering where you are, what hotel / city / country you are in, what day is it again?

Time to take that house gig you were offered a while ago perhaps? Or a sideways career move into the corporate AV world. Same tech after all. Fancier hotels, better dinners and other perks are a nice upgrade but corporate touring still has long days and plenty of dislocation from stable home life. There's nothing quite like arriving home on Christmas Day after 36 hours of transit!

Scheduling Games and Things That Just Go Wrong

Some promoters love scheduling dartboard tours. During one particularly dense schedule, we'd already done a matinee show down in

the Shire, had a support slot in East Sydney and were then due for a late headline out in the west. I just took a quick rest during soundcheck number two and was left there catching zeds. Woke up in the middle of the venue floor with punters streaming in for their big night out. And half the day still yet to come!

I booked loaders for a touring production that I was lighting. One phone call and four bods confirmed with local crew boss. Venue doors open, truck arrives and no crew. Great! We unload and setup ourselves, making the rest of the gang pretty cranky. I call the crew boss to find out that the loaders were actually early and thought they'd "do a quick burg" while waiting. Needless to say they got nicked. We also got eight crew for loadout at a substantial discount and I never used that mob again.

Sometimes, your health gives out unexpectedly. I had a root canal go bad just as I got back to the hotel after a long gig. No amount of painkillers could stop me groaning and after a sleepless night we found an emergency dentist who could fix the offending mess. The relief was immediate but the drugs finally kicked in and I was then far from 100%. The other lighting guy on this tour was even worse - laid out flat with a nasty flu. So I was propped up in a chair and directed a local friend of the band how to rig a lightshow. I still don't remember much of the actual gig that followed...

Encore

There are lots of good bits to life on the road. Seeing the world, getting the show buzz every night, making deep forged bonds with fellow crew and, if you are lucky, getting paid well to do a job that many dream of. Unfortunately, as much documented in these pages, there can be a significant toll on health and sanity. Some deal with this better than others. More power to them.

Personally, I got out before I got too broken. Amongst many other things, I really just wanted to wake in my own bed more often. I still have a passport but have not used it in years and find the sedentary life just grand. I don't regret a moment of road life though ...



by Julius Grafton

BLOWING UP (IT WASN'T JUST PYRO)

The things that went wrong resonate same as the golden moments. Gold when everyone is happy, the show is sold out, sounds and looks great, and money flows where intended. But the sticky brown moments are our great test and they could come hard and fast. All these stories are old, but the lessons learnt apply today.

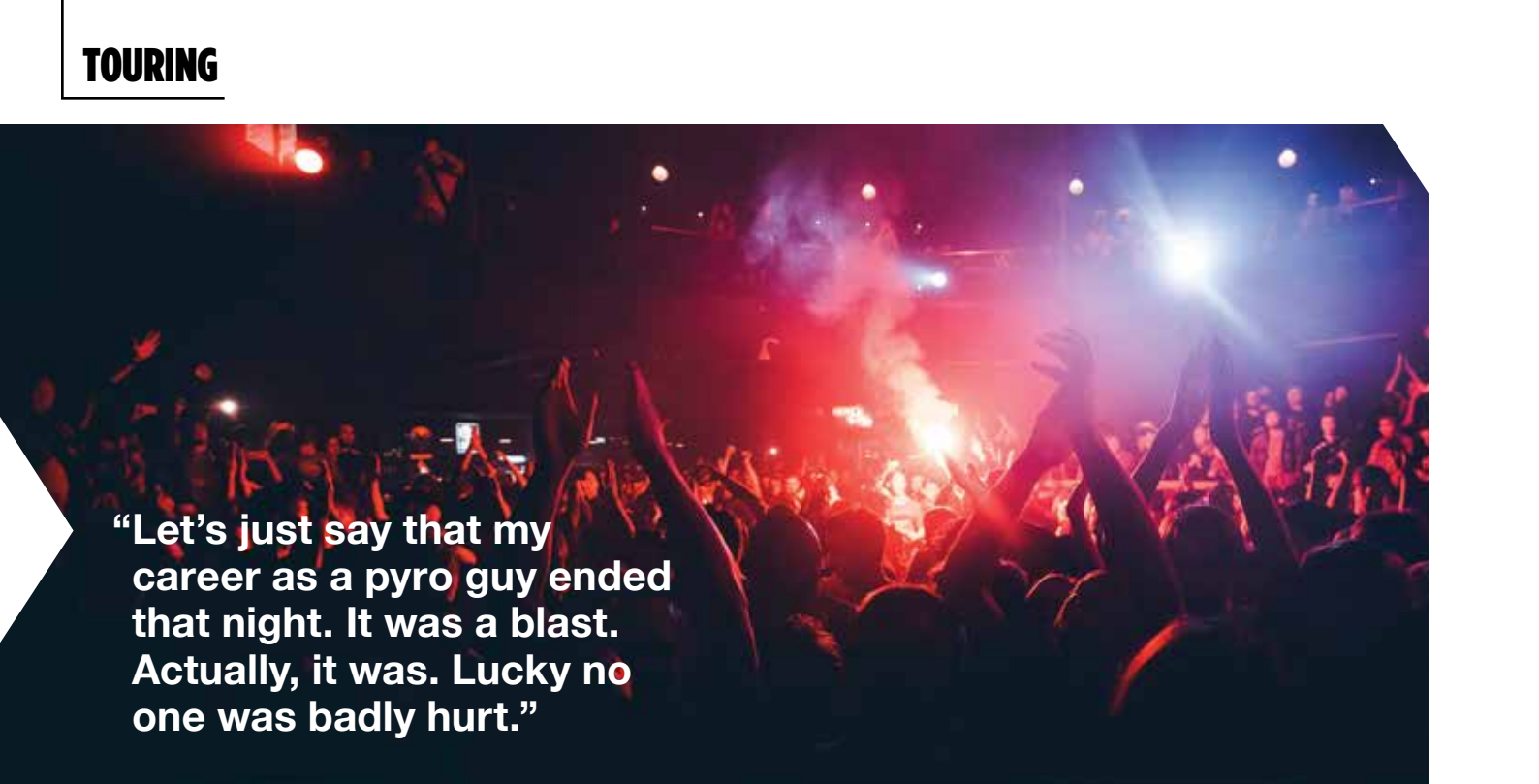
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“Let’s just say that my career as a pyro guy ended that night. It was a blast. Actually, it was. Lucky no one was badly hurt.”

Owning several production rigs I took a lot of trouble looking after the trucks. Early exposure to several of the best that the Ford Motor Company could build led me away from large displacement petrol engines, inadequate brakes, leaky everything, and surprise headlight failures. These along with adding on extra rear springs all cost me time and money. I went upmarket and got some Isuzu 5 tonners. These were incredibly reliable, assuming you did the right things, like put proper tyres on them and not let the bottom fall off the air filter intake stack - while traversing an enormously flooded road. Diesels react the same as an LED when filled with water. They stop.

The trucks were fine so long as the drivers were fine too. I had a rule: ‘no overnights’ which one fine crew disobeyed out of Canberra and headed to Melbourne. Many accidents happen at sunrise, which was exactly when Dopey Michael fell asleep and side-swiped a bridge. Woken by the phone, I had to (a) wake up, (b) gather facts, and (c) make a plan - all before morning coffee. From the inadequate descriptions it seemed we were a couple of wheel rims and tyres down, with a fairly rude section of pantech peeled open like a sardine can. Best I could tell, the equipment was probably OK.

I rang Dave Suttor at Orana, a good man, who gave me the name of a truck tyre joint in Albury. Calling them and using only Dave’s introduction, they loaded rims and tyres (I’m still amazed they had spare 16” Isuzu rims in the shop) and bolted down the Hume. All on the promise I would pay the invoice they would mail to me later! I was now sitting in the dark, since the mobile phone was not invented yet. I got down to business and arranged extra loaders for a late load in at the gig in Melbourne, and called the band. Several hours later, Dopey called back to say they were mobile. The truck joint had cut

away the jagged aluminium, and gaffed plastic over the holes. The truck was pulling hard to the left, but it would do 80kmh. Now we were back in business. I hired another truck for the load out, and paid the extra loaders and the gig went up just in time.

Another tour we had a second truck - a petrol Acco - driven by ‘She’ll Be-Right’, who decided ‘E’ on the petrol gauge meant ‘ENUFF’ and sure enough ran out half way between Tarcutta and Wagga Wagga. That cost us 90 minutes and screwed the sound check on a difficult tour with an international band who were hard to deal with when things were running well. Adding to the torture, that same Acco dropped its differential just a mile after we loaded out.

Circumnavigating Wagga Wagga I spot a rental Isuzu outside a servo, and I’m on their doorstep at 7am hiring it. We leave the Acco behind and are only 90 minutes late for the next sound check at Chasers in Chapel Street. By now the tour manager hates me real bad.

Back in the Ford 350 days I did a rescue run for Kevin Borich Express, and managed to find Gerry Georgettis and the bass player in a hotel room in Holbrook at 3.30am. Bit of trial and error, knocking on doors waking sales reps until I found the right room! Then we drove to their broken down Dyna (a slow, small 2 tonner) to crossload their stuff and drive to the gig in Sydney.

There were so many broken truck tales, and even more broken systems.

I fast learned about redundancy when early on, my one and only front of house crossover expired in Lismore, leaving me to innovate with a couple of equalisers. Then the reality of 220v Soundcraft power supplies in industrial towns like Lithgow, Port Kembla or Newcastle when the industry switched down a gear and

the grid spiked at $240v + 10\% = 264v$. That extra 44v wasn’t appreciated and the console supply would go up in smoke.

Another big lesson was that any new combination of equipment really did need to be properly introduced rather than thrown into full use. We built an entire touring set of speakers to a revolutionary design by a guy who worked sound for Moving Pictures. His compact front loaded designs were completely unsuited to my choice of transducers and crossover points, and it Just Didn’t Work. Huge loss of time to pull all those 12” and 15” drivers, and horn drivers out and put them back in the old double four way boxes.

Of course, the ‘Idiot Check’ was intended to make sure we didn’t leave stuff at the gig. But we still did. Being separated from the microphone case by 160kms is character forming, as is leaving the step ladder AND the follow spot stand at the same place. Plenty of times we would roll up for load in and find random stuff someone had left the previous gig. Some of it just sat there unclaimed!

Later on there was a terrible situation in which one of my production staff soldered up thirty mic leads and decided - why, I never found out - to connect the earth pin (1) to the shell termination on the XLRs. While this is done elsewhere, it was not our policy, and those cables went out as system patch on a major gig with a brand new set of processors, amp racks and boxes. The resulting earth loops drove the crew insane.

Which brings me to blowing stuff up. Shame and continued fear of damages lawsuits prevents me fully explaining what happened one Summer evening at a certain Sydney venue in the mid 1970’s. Let’s just say that my career as a pyro guy ended that night. It was a blast. Actually, it was. Lucky no one was badly hurt.

Get out there.

TOUR SMARTLY

by Simon Byrne

Touring is different to one-off gigs in that when you are on a tour, you roll out the same production repeatedly. Therefore it pays to do it an efficient way. Efficiency gives you the gift of time which gives you the opportunity to refine your event further, fit more into your day, or even just chill!

Time is your most valuable resource. For me, that means lots of preparation before heading out, so that on the tour we are only delivering on our plans. We are not working out how to do things on the road.

It starts with systemising and processes. By systemising as much as you possibly can, friction is eliminated from your processes, and things get done more quickly. And by having standard processes, you don't have to think as much.

Checklists and documentation can help. Ask yourself this, with the preparation that has been done, can someone else step in and do my job right now? If the answer is no, what are the areas that stop that from happening? Put some solutions in place and you've achieved planning enlightenment.

Packing - I've done countless tours where I've taken too much of both personal luggage as well as production gear because "I might use that" or "this could be useful". It turns out I'm nearly always wrong! So now I only take what I know I am going to use, combined with an appropriate amount of spares and nothing more.

Size and weight are huge and often hidden costs. If you think about it, size and weight adds cost everywhere. More fuel to truck it

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around, more crew to push and lift it, more storage, more excess luggage charges and so on.

For example, I know of a few companies that package up just three dual radio mike systems into a steel thirteen unit rack on wheels with some lovely steel draws for the accessories. Very neat and tidy but those racks weigh about seventy kilograms and take up valuable space in the venue and the truck. Just for three rack units of radio mics which could be packaged up in one third the size and weight. Over an entire tour, the savings would add up.

Smart packaging and systemisation saves an enormous amount of time out on the road. Looms, pre-cabling, drop boxes, integrated power distribution are all examples of things that save time, and money too.

Case management - empty case storage should be done so that on the load out, the right cases are in the right location, in the right order and ready for use. I even stack cases in the reverse order to the load out so I don't have to double handle. My pet hate is to find that I need to get into the case at the bottom of the pile!

Cases should be labelled with what it is, and where it is to go so that the local crew know where to push it without the need to ask someone. "Stage left on stage", "Front of house", "Balcony" and so on. Similarly, if the label says what it contains, you can say to the local crew "find the DMX splitter" and they can without opening each case up. One important note though - do not label up your

cases with the "Famous star's name" because that makes it especially attractive for thieves, particularly at airports.

And talking of airports...oh we love the airlines don't we!

Firstly, as most of you know, both the major airlines have special music industry arrangements for extra luggage, three pieces totalling sixty-nine kilograms on Qantas, and four pieces totalling sixty-four kilograms on Virgin. To access these arrangements you need to be a bonafide member of one of the music industry bodies (link at the end).

Irrespective of how many items you take, no single piece can be greater than thirty-two kilograms.

Discount airlines. This is simple, avoid them if possible! They are not set up to accommodate touring event crews.

I was forced to fly Jetstar the other day (don't ask) and that was the first time I came across the "Jetstar Carry On Baggage Compliance Officers" or as I call them, the JCBO. The JCBO were weighing all of the passenger's cabin baggage to confirm they were less than 7 kilograms and charging \$10 per kilo extra. Considering that two laptops and a few cables easily weigh more than seven kilograms that can be a problem. My advice: fly another airline. Failing that, wear as much as possible of your carry on (phones, cables in pockets, iPad inside hoodie and so on). I recently came across some guys and gals in the US who buy special jackets just for that purpose from a brand called Scottevest (link below). Perhaps get to the gate as late

as possible, without risking boarding, so the JCBO don't have an opportunity to weigh your bags.

A lot of damage to equipment is done during air travel, in my experience, by far the most. But what can you do? Other than packing your equipment properly, not much. You just have to accept that it is going to happen, get appropriate insurance and plan for it. I do seal production cases with cable ties. It means a thief needs at least a knife to look inside cases, and you know if it has been opened.

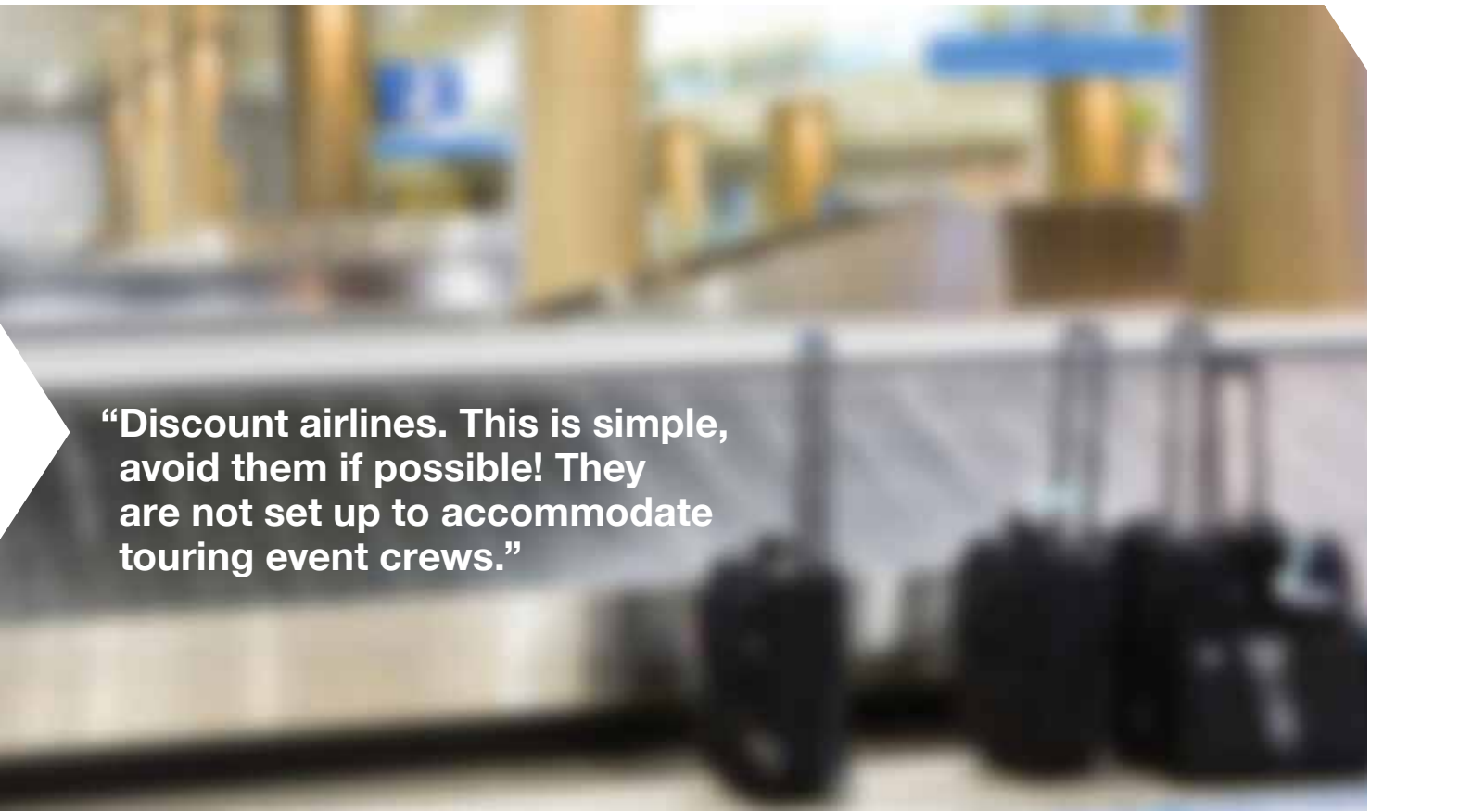
Interesting side story. Years ago I did a tour with Tommy Emmanuel. Seated on the plane, Tommy observed the baggage handlers throw his guitar onto the conveyor belt, where it fell off. Tommy was furious, he stormed off the plane and confronted the baggage handlers with most of the passengers watching. It made quite the scene!

Make sure you have fun! You are working hard, long days and nights, less than ideal food and sleep patterns. At least make sure you and your workmates are having a fun time.

Successful touring comes by being focused on the big picture at all times, whilst delivering on today's gig efficiently.

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"Discount airlines. This is simple, avoid them if possible! They are not set up to accommodate touring event crews."

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JIM JEFFERIES

by Cat Strom

Photo Credits: Andreas Heuer @ AK Photography

The days of a comedian shouting loudly down a Shure SM58 with little to no intelligibility are long gone.

With comic acts such as Russell Peters playing to 17,000 people, the audio requirements for these comedic superstars are as big and exacting as any rock show. So when James 'Oysters' Kilpatrick posted a photo of the multiple hangs of L-Acoustic K1 he was using on Jim Jefferies Night Talker tour onto his Facebook feed, he copped quite a few sarcastic comments.

"A band makes noise, a comedian makes none so the input is very quiet, and so we have to generate the amount of level by the sheer amount of cabinets," said Oysters. "Basically if you don't see a box in front of you, you don't hear. It's as simple as that. With a band, because they make so much noise, you can be off-axis to the PA and it doesn't really matter. As soon as you walk away from a PA at a comedy show, it's gone."

Essential to the planning of gigs such as this are the room predictions based on whether a show is sold-out, curtailed off or in an unusual mode, and JPJ Audio has become notorious for being able to accurately provide such information.

"It's the prep and the drawing that is the difficult part," said Oysters. "Plus we need quite a large PA crew but once it's all in place, it's quite simple to run. You have to get the opening sequence of cues correct and once the room is full there's a lot more ambient noise and it can be quite different from sound check. Once everyone has quietened down and started to listen to the show, it gets to the point where it could almost run itself."

Having said that, Jim doesn't ever sound check and tends to start the show loudly, eventually settling into his normal talking voice. However, in the afternoon Oysters will take the artist's microphone and walk every block of seats to ensure even and legible sound for all audience members even though this can take up to two hours.

Working to the theory that if there is any doubt at all of someone not hearing the comedian clearly, just point a box at them, Oysters employed a large L-Acoustics K1 setup including 14 x K1 with six Kara underneath in the main hang, 12 x V-DOSC with 6 dV-DOSC for side hang and six Kara for lip fill. To not obstruct the large video screen the PA had to be trimmed high at 12 metres. Two ARCs either side of the stage provided side fill and the four wedges were all Clair. There were also eight L-Acoustics SB18 on the floor for the opening sequence.

"Most comedy shows have some form of cinematic intro so you need some low end to replicate that Dolby digital effect," explained Oysters.

Oysters says that people expect him to be running the show on some tiny analogue console and not the state of the art DiGiCo SD10 he uses.

"One thing I always do when mixing for comedy, is try to keep everything running at 96K AES all the way to the amplifiers," he said. "In the future, I think we'll go with the new Shure radios that put AES straight out of the radio and put an AES card in at the stage rack so it stays AES all the way from the microphone through to the amp. We try run it at 96K with the Waves bundle because you get a lot more clarity and intelligibility."

Although the crew shooting Jim for IMAG like that he doesn't hold his microphone up to his face, Oysters has to deal with him holding it down below his chest or even his belly button. Jim likes to drink a beer whilst performing and that usually ends with his mic going lower.

"We took a Shure R Series on tour but took different heads to try," said Oysters. "We found that a DPA switched to hyper actually picked up the best from the mic down in that position. We used a dbx Feedback

Suppressor when we opened his mic right up. Plus I used Waves Vocal Rider so when Jim talks the fader automatically goes up and fades back when he stops. Sometimes when you get big pauses, you may start to hear the sound of the room but the Feedback Suppressor and Vocal Rider make the room tone a lot quieter."

Visually, the aim was to create something truly unique for this type of act whilst achieving optimal viewing for audiences irrespective of what seat.

"Audience members were at any one time able to see multiple shots of Jim creatively cut by director David Hendy," said Joe Bonanno, CEO of Big Picture, who worked closely with Frontier Comedy's Travis Hogan and Simon Johnson who were leading the charge on show design.

Big Picture produced the show video content in-house for the support acts, advertising, venue guidance and a high-impact opening sequence that welcomed Jim on stage with audio and lighting to match.

"Having content produced by Big Picture proved to be invaluable as variations and changes for each city could be made and approved instantly on site," remarked Andrew Taylor, Frontier Comedy's Tour Manager.

Video consisted of Big Picture's newly landed ROE Carbon 5 LED panels with Brompton processing housed in T2 and T4 touring frames, which were assembled as a large curved screen with seamless wings. Two Barco HDX-W20 Projectors provided additional IMAG. Signal was managed by Barco E2 with various presets for video rolls and support acts, Jim's show state was five PiPs across all the video surfaces to accommodate the multiple camera angles.

The lighting was designed by Dave Jackson of Creative Productions whose biggest challenge was clearly placing light fixtures out of the way of the large video element.

"Obviously single look shows have to have a big impact without much movement or cues," he said. "We ended up with a back wall of 30



Dave Jackson



GLP X4S and 90 LEDBLADE LED strips to frame it all out. Overhead we had 16 Ayrton Mistrals for overhead lighting and key light for Jim, which was very difficult because of the way the curved screen worked! It was a bit of a mission but it worked out."

After the second show, Dave decided to add a few Robe BMFL Beam wash on the floor for a bit of extra back light as they're shooting fairly tight for IMAG. He also employed three Robe BMFL Blades linked to his newly purchased Follow-Me system that allows him to assign

unlimited fixtures from any manufacturer in any orientation to multiple targets from one operating system.

"We purchased the Follow-Me at LDI as we had a couple of other riders in the New Year requesting it," said Dave. "We looked at Spotrack and the Robe RoboSpot but Follow-Me ticked all of the boxes and of course, the fact it was already on riders was a big factor. Follow-Me offers a cost saving, quick to implement alternative to follow spots and rigging nightmares."

Dave admits he didn't actually have a lot to do during the show but he couldn't resist taking out his new MA Lighting MA3 console.

"We were very busy at the time so all of our MA and Hog consoles were out and I'm not letting my MA3 go to festivals just yet!" he said. "I had only used it on The Wombats before so it was a good opportunity to keep familiarising myself with the work surface."

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



Andy Stewart

DANCING ON THE CEILING

by Andy Stewart

While a large chunk of the audio community is still out touring in the blazing heat of summer, right across Australia the studio aircon has been hard at work to keep the studio weasels cool. This article is for those of us who have stayed indoors over summer and not ventured out on the road.

Here in the studio the weather has been a very pleasant 20 degrees all summer, and the dust has been kept to a minimum by a combination of carpets on the floor and sealed doorways. Occasionally a fly has gotten in and created a disturbance, but by and large, everyone – at my studio at least – has been relaxed and cool.

I've seen footage of various festivals on the news: the inevitable girl on someone's shoulders with a plastic cup of beer held aloft in triumph (that she somehow managed to get a drink from the bar and bring it down into the mosh pit without spilling it). I've even played a few gigs myself and been a punter at others, most of them small, and nearly all of them indoors. Personally, the only touring I've done over summer has been some volunteer firefighting, where the smoke machine was a paddock, and the inhalation serious...

...but that's another story.

This issue of CX I'd like to focus, not on touring if that's okay, but on a piece of audio equipment that is perennially misunderstood by studio and live engineers in equal measure. It's feared by many of us, and the greater our fear-factor becomes the gentler we tend to apply it, which is often a big mistake.

Yep, that's it...

I'm talking about the dreaded compressor.

But don't flip the page just yet! Stay with me here...

I know they're boring to talk about! And hey, I don't want to be the one to have to do it, that's for sure. As conversation pieces, compressors are total party killers. So, trust me, I'm not going to talk about ratios here, or thresholds, or the logic of how and when to

use them. In fact, I'm going to do the exact opposite. It's time to look at compression totally arse about – illogically, and from the punter's perspective.

Especially if you're one of our more fearful brethren: it's time to use your ears and forget literally everything else.

The Plague

Some engineers have such a phobia about compressors that they mostly avoid them altogether, for fear they might 'damage' their audio signal! I think some of these engineers have become convinced that there are rules about how to use a compressor, and if you break them – or if a colleague hears the 'effects of compression' in your audio signal – old men in white coats will come and drag you away to the gulag.

It's utter bollocks! No-one cares, and no-one is listening in to catch you out because punters are busy focusing on the music – they don't realise your role even exists. Out there in punter-land, only power, intensity, immediacy and attitude matter. No one has a clue about – or frankly gives a damn about – ratios, or thresholds, or gain structures.

So when in doubt, let the damage begin, I say... go forth and smash that audio signal, I dare you! You won't know what affects your shiny compressor may have on your current

job if you chicken out and try your very best not to use it.

The reason I dare you, is because that's usually when a person throws caution to the wind. And with compressors, this is what the more fearful amongst us need to do far more often if we're going to get comfortable with them.

And if you don't believe me, consider this: as often as there are times when a logical approach to compression works wonders, there are other situations when throwing caution to the wind, hammering the audio carelessly, destructively and mercilessly gives you a VASTLY better outcome! So let your brain step aside, your compressor go nutso, and LISTEN to the outcome!

'80s Resus

It works, believe me. I did it only last week.

I was asked to restore some old '80s new-wave pop that hadn't seen the light of day for decades. The band's original masters had gone the way of the Dodo (possibly when Festival disappeared, or sooner), and all I had to work off was a bunch of old cassettes. These were of unknown fidelity, quality or generations away from the original masters. It was up to me to transfer the lot, make executive decisions about which versions were 'best', and press on with remastering an album of the band's 'Best Of...'

Best of what, I had no idea.

The result of the transfers was a ProTools session file of some truly insipid songs that embodied everything that was bad about the '80s, combined with everything that was bad about leaving old cassettes on a shelf for 35 years. The job was extremely hard to take, and the urge to get up and walk around (or leave) was almost impossible to resist. One

song in particular – that was truly awful, but just so happened to be the one song that the band was very keen on restoring to its former glory (glory?) – sounded almost impossible to remaster.

I had almost given up on it as a dead loss when, before adjourning for lunch... a very long lunch, I decided to slam the crap out of it with a compressor.

Bingo! All of a sudden the song was brought to life again, still terrible, but far more compelling now that it had been before. Looking at the mastering chain, everything was getting truly savaged now. The compressor was pinning on both input and output, and the gain reduction was beyond the needle's capacity to represent it. Further down the line the limiter was copping it too; the input signal suddenly far higher now than it had previously been. It was clipping 11dB, occasionally more. It was ugly, but the sound spoke for itself. It was the first time I'd heard the song take a breath, show some spine or have a pronounced beat. It had more depth, more clarity, more fire... I wanted to touch all the knobs to compensate for the obvious gain strain, but quickly checked myself. I printed the new version and there it was. Done. Nothing was in tune, or in time, or worth hearing ever again, but at least it didn't sound like a wet teabag plopped on the kitchen bench.

Now while compressors can sound awful in this circumstance, in this particular instance they quite literally cured the song's insipid qualities (well some of them): its lack of cohesion, its dullness, lifelessness and all-round lack of impact. Frankly, I've never really heard a track from a recording studio sound so bad, but somehow the compressor/ limiter chain, combined with some fancy EQ thrown into the mix, worked wonders. But

nothing about what I did to this song was out of the manual; nothing about what I did could be considered a lesson on how to use a compressor. But that's exactly my point. What's very wrong at times with some of our engineering approaches is that we try to make our brain run the show, not our ears. So when our brain hesitates, like it sometimes does when we're confronted with dreaded compression conundrums, we turn on our heels and run. Instead, we should stand our ground, put our brain aside, shut our eyes if necessary, and twiddle some knobs. If the sound gets better and better, awesome. This is no fluke by the way, because, with our eyes shut, our logic takes a back seat and all our mind is discerning is whether something sounds better or worse. That's almost like hearing things from a punter's perspective!

Often when this happens, the next thing we do is open our eyes to discover that the compressor is working 'far too hard', the signal is 'clipping', and the gain structure is 'up shit creek'. But who cares? You?

Okay, but besides you, who else cares? No-one!

So leave the compressor alone if it sounds better! Don't change things because of your fear of the white coats. There ARE NO WHITE COATS! If the compressor looks like it's copping a flogging but everything sounds awesome, that's it. Your job is done.

It's not your job to decide what works based on logic, or ego, or on what a device should supposedly do under ideal conditions. A good sound needs no justification: no certificate of gain structure, and certainly no spec sheet of distortion percentages. If you gave that paperwork to a punter and asked them: "how do you like the song, based on these measurements?" they'd look at you like you were from Mars, screw it up and head for the bar.

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RigSync

by Jenny Barrett

TAURANGA'S ABOUT TO BLOW ITS OWN TRUMPET

New Manager at Baycourt Theatre

'Ten dollar' Tauranga is leaving behind its dubious reputation for stinginess, swathes of retirees, and its designation as a cultural wasteland following a 60% vote against a museum. A fresh face has landed at Tauranga's Baycourt Community and Art Centre, and he's got plans.

New Baycourt Manager James Wilson is a familiar name to many in the arts due to his role in the rise of Q Theatre, firstly as Producer and later as CEO. Now Q Theatre is seven years old and firmly established at the heart of Auckland's creative scene, James felt it was time for a break. "I needed a breather, so I took two or three months off and edited my LinkedIn page to read 'Independent Arts Consultant', but it was not to be!"

His plans were scuppered when unexpectedly the Manager's position at Baycourt came up, "I had worked closely with Megan Peacock Coyle, the then Manager, when we co-chaired the Performing Arts Network of New Zealand (PANNZ) so I was familiar with the venue." He set about researching the role. "I hadn't realised that Tauranga had such extensive creative networks. With the huge population growth, younger and more diverse people moving into the area, I think Tauranga is at a tipping point. It is an exciting time and arts and culture are starting to be valued very highly."

That wasn't all that attracted James. At a time where Councils are often under fire, James has a refreshing view of Tauranga City Council, "What really impressed me was the commitment to arts and culture by the

Council. And I have to admit after running Q Theatre as a charitable trust and spending a lot of time and energy on fund raising, it is quite refreshing to have access to some resources!"

On September 3rd, James took his place amongst a long standing team of committed individuals, "Whatever the venue, ultimately it comes down to how good the staff are, and I am part of an amazing team who really care about what they do." The very morning of the interview, James had been celebrating the custodian's twenty year anniversary, and the ticketing manager's twenty year anniversary is coming up soon. "When you are on tour it is really important to have a team at the venue who will support you and look after you, and the team at Baycourt are there for every group."

James has spent the first six weeks in the job getting out and meeting as many people as possible in the community, helped by Creative Bay of Plenty, "They provide a map of all the artists, writers and musicians. I'm trying to understand the networks and see how we can all work together. I have had a lot of cups of coffee!"

The caffeine excesses have been worth it, providing him with ample food for thought,

"Baycourt is part of a wider strategy at Council and I have to think what does Council support mean not just for Baycourt but for the arts community? How best can we leverage it?" James considers himself to be in a fortunate position, "A lot of the hard work has been done for me. I have been very lucky to follow in the footsteps of Megan who has done a great job of lifting the perception of Baycourt and it has become an important stop on the national touring circuit. Our programme is packed for the next year so whilst a high level of utilisation is important, I want to focus on growing our audience reach."

And he's looking to Baycourt's community work to find his audiences of the future. "I wouldn't be surprised if Tauranga has the highest number of dance schools in the country and we seem to host them all," he chuckles. And there's more, "We had 200 kids on stage singing as part of the Primary Schools Choir Festival, and then there was the Friends of Baycourt Piano Open Day, where literally anyone can book a fifteen minute spot on our Steinway and play on stage under the spotlights and bring their own audience."

James laments that he talks to so many people who remember performing here or are still performing, yet don't come to watch shows themselves, "I see one of my main challenges to be building the connections between the community who come here to sing, dance, act or play an instrument, or to watch their own family and friends performing, and the visiting artists."

James is looking to the NZ Dance Company for inspiration, "Six months in advance of a performance they visit the region, go to dance schools and do some really valuable promotion. But not every tour has those kind



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of resources and I see the team at Baycourt fulfilling that role and brokering on behalf of the tour groups.” He uses the Atamira Dance Company, a contemporary Maori dance theatre group, as an example of how he wants the venue to work with and on behalf of the artists, “It is their first visit to Tauranga and we know that they won’t sell out this time but we want to support them, get them known and talked about, ready for next time.” He has seen what the TSB Showplace team in New Plymouth has achieved, “They have taken on some of the risk on behalf of the artists and invested in audience development and resources and it has paid dividends.”

From the outset of James’ career, he has had a passion for connecting emerging artists with audiences, cutting his teeth in New Zealand with the Massive Theatre Company who work with 15 to 25 year olds, creating new theatre with these young actors, directors and writers. He fully intends to continue to grind this axe in Tauranga, relishing events such as the recent Final of the International Youth Silent Film Festival (IYSFF) NZ Nationals,

in which young film makers were tasked with making a short silent film to different scores created especially for the festival. The finalist’s films were screened at Baycourt with sound tracks performed live by the composer Nathan Avakian who flew in from New York to play Baycourt’s 1927 Wurlitzer Theatre Organ. “We’re also looking at contemporary bands such as the Carnivorous Plant Society who can play the Wurlitzer, and incorporate it into their acts. We want to really showcase this magnificent instrument. I’m sure the Wurlitzer will resonate with those who are in to Steampunk as well. There are so many ways it could be used.”

Alongside trying to connect the local community with touring acts, and particularly with emerging artists, James is leaping into the local debate on whether a larger performing arts space is required in Tauranga, “A lot of New Zealand work that is touring is ideally suited to our 580 seat venue, but larger international acts require more seating, but not quite the stadium-sized venue out at the ASB Arena. There is a gap in Tauranga which other cities are filling: Rotorua with the re-vamped Howard Morrison Centre and Hamilton’s new Waikato Regional Theatre due to open in 2022.”

James has ideas about how to stimulate the interesting conversations to be had, “I see

Baycourt as a place where you can explore solutions. Whilst at Q Theatre we brought over Andy Field, a UK artist, who ran workshops over three weeks taking Auckland children to the highest places in town and asking them what they saw and what they could imagine in the city of the future. I’d love to initiate something like that and involve young people in the conversation.”

Finally, James strongly believes that Tauranga needs to start blowing its own trumpet, “We need to believe in ourselves. Tauranga has a lot to offer the arts and we need to get the word out. I’ve just been to visit the ‘Black Box Experimental Space’ set up at 16th Ave Theatre, a small stage where new writers, musicians or actors can be as creative as they want. That is just one example of so many exciting things that are happening across the city.”

James offers anyone an invite to come and have a look, “Contact me and I’ll organise to show you around and take you back stage and you can see what an asset we have.” He’s a bit like a kid in a lolly shop, about to pull together an amazing pick and mix selection. Watch out audiences in Tauranga, and New Zealand, for what might soon be coming out of this supposed cultural wasteland.



AirPlay



TINY



James Wilson, new Manager, Baycourt



TINY



Film Workshop

SHAM CONTRACTING EXPOSES WORKERS TO BEING SUED

by Simon Byrne

Our regular readers would know that CX often bangs on about casual labour being essentially forced to get an Australian Business Number, or miss out on the work offered. This is sham contracting. It is where a worker is engaged as a contractor but is doing the same work, or substantially the same work, as an employee, and I believe it is grossly unfair for the worker.

The casual worker misses out on their lawful superannuation under the Superannuation Guarantee Scheme, and all the paperwork, tax and possibly Workers Compensation insurance liabilities are offloaded to them as well.

Check out our previous articles on this here:

<https://www.juliusmedia.com/biz-talk-contractor-or-employee-it-makes-a-difference/>

<https://www.juliusmedia.com/employee-or-contractor-are-you-sham-contracting/>

There is one more ugly aspect to sham contracting, the workers exposure to public liabilities.

As I mentioned in last month's CX Mag, Public liability refers to the obligation to take responsible care to avoid injury to a person whom, it can be reasonably foreseen, might be injured by an act or omission. A duty of care exists when someone's actions could reasonably be expected to affect others.

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

Say a casual worker is employed under a sham contractor arrangement, under the direction of a prime contractor, and that

worker causes an accident through an act or omission and someone is injured.

Who is at fault? The prime contractor running the show, or the casual worker employed under a sham contract?

These situations end up in the courts to attribute blame and award payouts, and it is normal for courts to attribute blame across several parties. So if the worker is found to be even partly at fault, which is entirely likely because they have been hired as an independent contractor, the worker could be sued for hundreds of thousands of dollars. Even defending such a case will cost eye watering amounts of money.

That would destroy most casual workers financially, unless they have proper public liability insurance in place. And let's face it, that is highly unlikely.

So a poor old worker in a sham contractor arrangement, misses out on their rightful superannuation that every other properly employed worker in Australia gets, has to manage their own tax arrangements, may have to fight for workers compensation should they get injured at work, may even get sued and be destroyed financially! Yet regular employees would not be exposed to any of that.

Worth thinking about...huh?



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MOVING THE STAGE WITHOUT DRAMA:

reliable energy supply for stage technology

energy chain used in zigzag configuration guiding cable through vertical motion

With moving energy supply systems such as the igus e-spool and the zig-zag system, complicated stage applications can be implemented even in confined spaces and with high loads

The challenge for every 'stage builder' is to create the perfect stage. Every job is different, because stages are not off the shelf. This means that each and every component not only has to be powerful, durable and efficient, but must also fit together perfectly. In order to achieve this you need a competent partner who, on the one hand, understands the specific problems of stage technology and, on the other hand, offers a wide range of products with which any stage application can be realised. Treotham is an expert in the field of energy supply and provider of highly flexible cables for dynamic applications.

Treotham's low-friction maintenance-free plastic products open up new solutions for theatre and stage construction, where there are very demanding technical requirements. These challenges include high loads, such as those found in sound and lighting systems, stage sets or entire stage platforms, which must move safely and reliably. Physical and technical effects need to move, and the systems themselves must often remain unseen and unheard. Cables should be guided invisibly and moved silently. However, there is usually only a small amount of space available. Energy supply systems, data and bus cables must not only be silent and space-saving, but also withstand high dynamic loads. The stage technician and engineer need systems that are easy to assemble,

require little maintenance, and promise maximum service life.

E-Spool: The Alternative to the Cable Reel - Without Slip Ring

Traditionally, cable reeling drums of various sizes are used for cable guidance on stages. However, they are reaching their technical limits in many respects, in particular with the capacity to accommodate different cable types and also the noise generated. The igus e-spool from Treotham provides an operationally reliable alternative that is ideally suited for noise-sensitive applications. The system is extremely compact and is able to guide a large number of different energy, data, control or pneumatic cables in very confined spaces.

In terms of design, this is a combination of two proven igus product families, long-lasting e-chains and the flexible "twisterband". The continuous movement of the cables is reliable and safe due to the e-chain. This offers protection from external influences, wear and tensile strain, and significantly increases the service life of the cables. And safety can be further enhanced by using Treotham's own igus chainflex cables designed specifically for moving applications in energy chains. As part of the readychain product range, harnessed energy chain systems, plug-in connectors, and highly flexible cables are available from

a single source - complete systems of the highest quality. The e-spool in turn protects the e-chain, which is safely stored on a drum.

During the reeling, an integrated retaining spring ensures the correct tension of the chain at all times. The most important innovation is the use of the twisterband, which connects the spool to the shaft end block and forms the interface between fixed and moving cables. In this way, the twisterband allows a continuous cable guidance during rotational movements without needing a slip ring. The slip ring has serious disadvantages due to the sliding contact. The abrasion primarily leads to wear, which in turn worsens the electrical power and signal transmission. If fast and trouble-free data transmission is required, cable drums with slip rings are not ideal and must be "upgraded" with a special accessory. Here the e-spool is much simpler and more efficient, offering a high technical quality.

The E-Spool as a Solution for Upper and Lower Machinery

Usually, two locations are defined in stage technology: upper and lower machinery. The e-spool is suitable for both. A key reason for this is its quietness, whereas systems with slip rings can cause noise during operation. As the tests in the igus noise chamber have proven, the e-spool is clearly the better option. With an appropriately equipped e-spool, the noise level could be below 46 dB (A).

Performance Features and Variants for the Stage such as the E-Spool Power

The igus e-spool is extremely flexible. It can guide different types of cables and diameters, both vertically and horizontally. Since larger cables can be separated, even

LEADERS IN ENERGY SUPPLY FOR STAGE TECHNOLOGY



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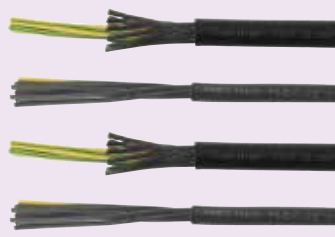
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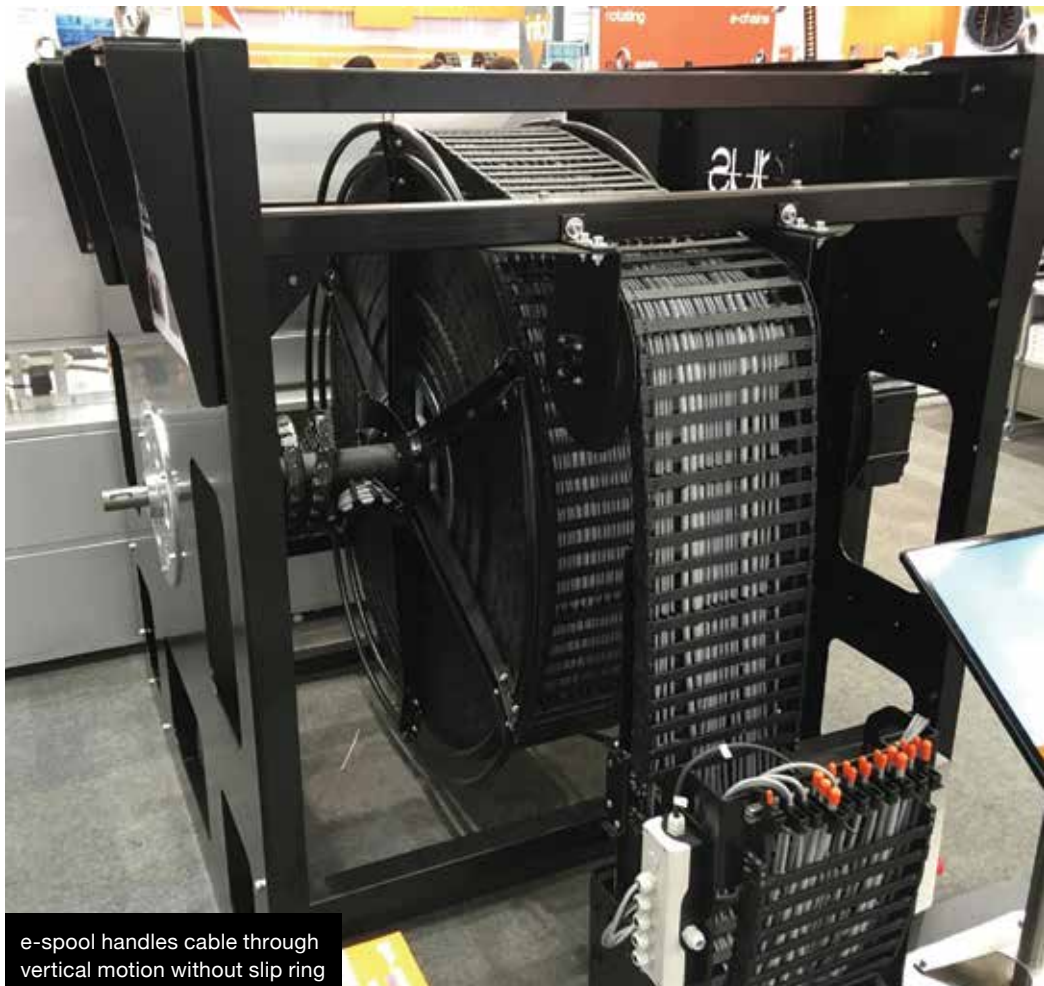
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energy chain used in zigzag configuration guiding cable through vertical motion



e-spool handles cable through vertical motion without slip ring

cable diameters of up to 17 mm are possible. The e-chains parts are easily openable and can be quickly filled with cables. This allows a straightforward installation and also allows maintenance or repair in case of damage. Cable retrofitting is possible in many cases, so that more cables can be changed or added to the system later. The e-chains can be quickly retracted up to their original position. Extension lengths from 4m to 14m are standard in the product range.

In addition, it is possible to produce extension lengths of up to 50 m for special projects. The maximum extension and retraction speed is 1 m/s. Accelerations up to 2 m/s² are possible. In the case of the lateral speed, a maximum value of 1 m/s applies and for lateral acceleration a maximum of 1 m/s² (radial) or 0.25 m/s² (axial). The e-spool was also intensively tested for its durability and service life at the igus test laboratory. 24,000 double strokes were completed at maximum rotational movement without any problems. Depending on the application and filling, the achievable service life is up to about one million strokes. After about 75,000 double strokes, the retraction spring must be replaced during maintenance.

Optionally, you can equip the e-spool standard with one or two twisterbands. An e-spool with only one twisterband has a drum diameter of 600 mm and can weigh from 13.5 kg to 48 kg. If you want to carry

more cables, it is advisable to use an e-spool with two twisterbands. This version has a drum diameter of 850 mm and a weight of 40 kg to a maximum of 55 kg. For heavy-duty applications, there is a special HD version of the e-spool standard, with an extra-strong spring. The retraction force can be increased again, especially for heavy, vertical applications, for example in acoustic and lighting installations. For the e-spool HD there is always a choice between one or two twisterbands.

In general, all components of an e-spool are halogen-free and comply with the general fire protection standards for building technology and machines as well as those for building materials and components (DIN 4102 or DIN EN 13501).

In addition to the standard options for the e-spool standard, the e-spool is also available in various special variants that can meet the individual needs of a stage application. The mini e-spool was developed for very small installation spaces. As the drum and shaft block are made of aluminium, it is extremely light (only 3.3 kg) and can be integrated anywhere. It is designed for extension lengths up to 2m and is ideal for small circular movements. If only one cable is required, the e-spool can also be used with manual extension. A detent mechanism reduces strain on the cable and prevents unwanted rewinding. Despite an extension length of 5m,

the diameter of the spool is only 300 mm.

The e-spool variant with the greatest relevance for stage technology is probably the e-spool power. This has a motorised retraction system. As a result, high fill weights and movements in all directions are possible. Instead of a retaining spring as in the standard e-spool, a motor retracts the spool. This overcomes the technical limitations of the standard systems. This is possible because the motor increases the power and allows a higher cable fill weight. This means more cables and larger diameters can be carried. At the same time, longer travels of up to 50 m and more are now possible. With a maximum extension and retraction speed of 1.2 m/s every additional metre is managed quickly. As the e-spool power does not require retraction springs, the maintenance intervals are further apart. There is no tensile strain on the cables. Therefore, the e-spool power ensures a longer service life for both itself and the cables. Since it is supplied with a drive and control system, it can be integrated quickly into the respective stage machinery.

Zig-Zag: Unconventional Solutions for Unconventional Theatres

Modular design and flexibility of the e-chains allow a creative solution for vertically hanging applications that is not only cost-effective, but also very space-saving and inconspicuous. If stages or heavy stage platforms have to be moved, lifting heights of many metres

and heavy loads have to be managed. So far, systems that have been used are noisy, space-consuming and visually intrusive. With the "zig-zag" installation method using igus e-chains from Treotham, there is an effective alternative for this, which is characterised by its compact design. By using reverse bend radii, the e-chains can be stored in a zig-zag pattern. In this way only very little space is required. When the stage or platform is raised, the e-chain unfolds with low noise.

This installation method is possible with all e-chains of the E4 series. The entire e-chain practically disappears as it is stored automatically in a standardised zig-zag box, and this can be integrated in the stage pit or fixed on movable lighting trusses. This box can optionally be chosen in matte black or another colour. The e-chains are available in external dimensions of 75 to 500 mm with box lengths of 600 to 3,000 mm and box heights of up to 2,000 mm. As standard, travels of up to 40 m can be implemented just as speeds of up to 0.4 m/s and accelerations of up to 1 m/s². Even higher values are possible on customer request.

The Slim Alternative to Zig-Zag: The igus Liftband

The igus Liftband was designed for similar applications, but following a different approach than the zig-zag method. It was developed for vertical applications up to 13 m and with lower cable loads, although higher

fill weights are still possible with the use of nylon bands. It moves very quietly and has a modular design that can be easily adapted to different heights. Energy, data and pneumatic cables can be moved together. In the process speed up to 1 m/s and acceleration up to 2 m/s² are possible. With a bend radius of the cables up to 250 mm, the space requirement of the Liftband is exceptionally low. The Liftband is therefore the perfect alternative to zig-zag solutions if very little space is available. The chain is stored in a solid steel basket, so that the retracted system is barely visible. However, for both the zig-zag box and the Liftband it is necessary to configure every application individually. Therefore, a Treotham designer should be consulted in the project planning. Only a little time is needed from configuration to delivery - the simplest as a ready-to-install plug-and-play system with pre-assembled cables and connectors.

Versatile and Robust Cables for Stage Technology

With the zig-zag principle, not only can different e-chains be used, but all media cables (energy, data, hydraulics, pneumatics) are also guided in one system. In stage construction in particular, a variety of sensitive devices such as cameras and speakers are used. This requires a wide variety of cable types. Energy, data and signals must be transported just as reliably as, under certain circumstances, water or

compressed air. With the chainflex product range, there is an assortment of 1,354 cable and hose types available from stock, from motor, control, servo, bus, data and encoder cables to modern fibre-optic cables, with cable lengths of one to several hundred metres.

Chainflex cables have been specifically developed for moving use in energy chains and withstand very high mechanical stresses in moving applications, even with twisting movements. Designed for many cycles, high speeds and accelerations as well as long travels, they work reliably without failure over long periods of time. They therefore have a unique 36-month guarantee. In addition to these general advantages, certain chainflex cables have performance features that are particularly interesting for the stage technology. Examples of this are the extremely bend-resistant and flexible chainflex types, which can be safely used in confined spaces. Because of the "low bending" concept, which is available for all cable types, smallest bend radii are possible, even down to four times the cable diameter. Cables with TPE outer jacket are halogen-free and flame-retardant, thus meeting the required fire protection standards. Even more time can be saved with ready-to-connect cables from the readycable range or with completely pre-assembled e-chain systems, including matching plugs, from the readychain range.



e-spool handles cable through vertical motion without slip ring



e-spool handles cable through vertical motion without slip ring

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A virtual sound check is a great tool because it gives you the ability to dial in all the channels that you previously recorded and then mix them to the room without the need of the performers being there, which will really help you perfect your show without the extra distractions.



1>

To start you're going to need to connect your M32C via a USB cable to your computer.



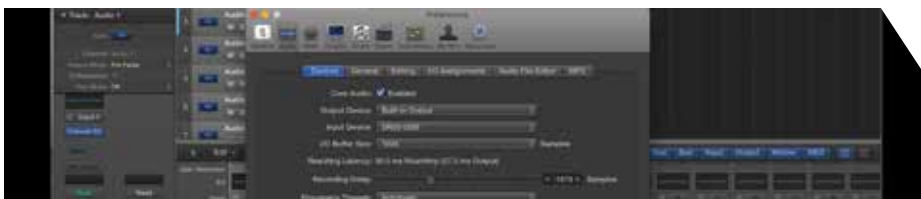
2>

and then record a soundcheck of your show to play back later.



3>

On the M32C card out tab, select AES50 A1 all the way through 32 to make sure that you're sending your inputs out of the card and into your DAW.



4>

In your DAW, select the DN32-USB as your input device and create a template with all your channels.



5>

Set channel one to input one, channel two to input two, and so on for all your channels and start recording your sound check.

6 >

For playback from your DAW, select the DN32-USB as your output device.

7 >

Take your previously recorded tracks and set their outputs. Track one to output one, track two to output two, and so on. Do this for all your tracks.

8 >

Go to the routing button, and on the home tab select card one through eight, nine through 16, 17 through 24, and 25 through 32 for your inputs. You should now have your tracks coming back to the console from your DAW.

9 >

For an even quicker setup, on your M32 MixApp, go to routing and page over to the preset tab, and select the card playback preset. This will automatically select the correct routing scheme for card playback.

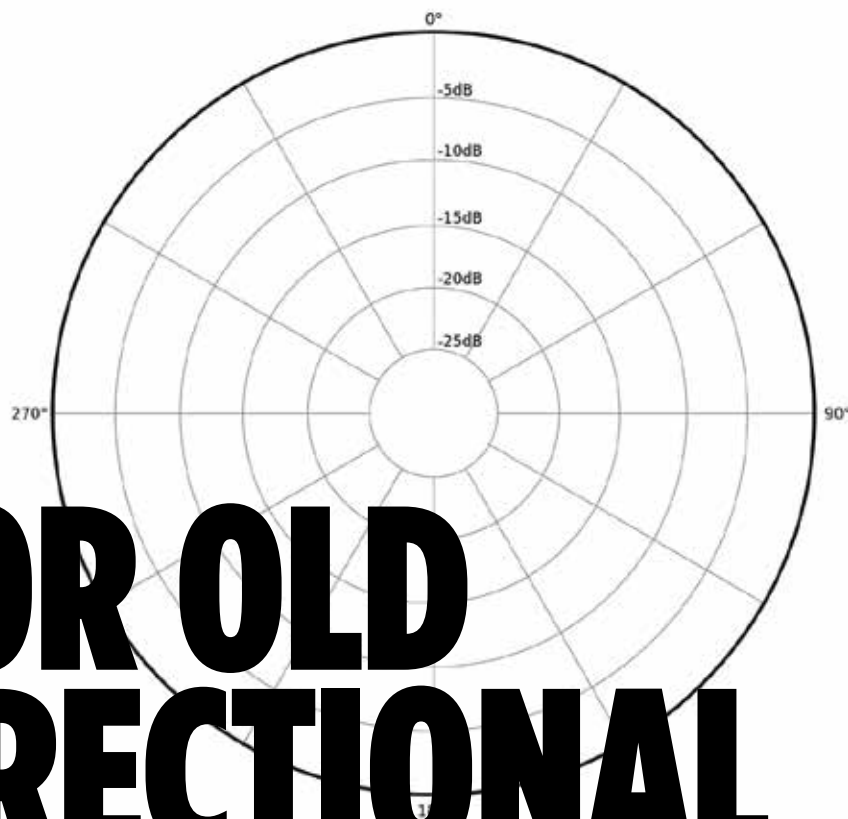
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THE POOR OLD OMNIDIRECTIONAL MICROPHONE

by Simon Byrne

The poor old omnidirectional (or omni) microphone has fallen out of favour, which is a shame because it has a lot of great characteristics.

The primary reasons we don't see many of them in live sound is gain before feedback, and spill between sources. But in many cases, these are simply not issues.

An omnidirectional will provide less gain before feedback for sure, but if it is close mic'ing a loud instrument, you don't need that gain anyway, same for spill.

So why would you want an omnidirectional over a cardioid mic?

Less distortion - a cardioid microphone achieves its directionality by utilising differential interference between the front of the capsule and back acoustic ports. By definition this has to affect the smoothness of the frequency response which shows up as signal distortion. Because these back ports do not exist in an omni, there is no distortion.

Less Wind Noise - because cardioid microphones create their pickup pattern by having the acoustic ports in the rear of the capsule. The wind blowing by the rear ports can create differential turbulence and that

causes wind noise. Once again, an omni has no rear ports so wind noise is minimised.

No "plosives" - the rear ports are also to blame for the plosive "P", "T", and "B" sounds that can occur when a talker is too close to a cardioid microphone. Though an omnidirectional mic can also suffer from this if you really try, they are much more forgiving.

No proximity effect - An omnidirectional mic does not have the build-up of bass when the talker is close. This is called the proximity effect and it only occurs with cardioid type microphones with rear acoustic ports. Tape up the rear ports and there will be no proximity effect, but the microphone is now an omni.

No off-axis colouration - there is none! An omnidirectional microphone's pickup pattern is equal at all frequencies from all directions. Therefore there is no off-axis, so no off-axis colouration.

Less handling and vibration noise - as most handling and vibration noise is made up of

low frequencies and there is no proximity effect with an omni, this translates to less of this type of noise.

Can point any direction you like - because an omnidirectional mic picks up equally well in all directions, it works whether it is right side up or upside down. It doesn't matter! This is particularly important with clip-on lapel or headset microphones. If you were to use a cardioid version, you'd have all sorts of problems with proximity effect and pickup directionality as the presenter moves. Not a problem with clip-on omnidirectional microphones which leads to the final point.

You cannot speak outside the polar pattern of an omnidirectional microphone - most presenters pay no attention to where the microphone is located on a lectern, so they often wander from the front of the mic without realising the sonic consequences.

Speaking into the rear or sides of a cardioid microphone will result in a very low level and muffled sound. This is not a problem with an omni mic.

So, next time try an omnidirectional microphone, particularly if you are close mic'ing loud instruments or dealing with a poor presenter who moves a lot. You might be pleasantly surprised!

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by Stephen Dean

THE SCHOOL MUSICAL –

The school has booked the venue to do their annual musical, the sort of affair where it is important that the parents see and hear their little darlings. The only problem is the teachers directing. Yes, I said teachers, plural - who have no experience. Several teachers all directing by committee of sorts. This means you get different directorial inputs for the same thing. Agreements are few and far between.

Now they did ask for advice. On the day of the bump in. It becomes a rush to get more radio mics to ease the belt pack changes through the show. Sound check then becomes a very short affair, as again this was scheduled as part of the run-through.

The technician tries not to lose their cool as the day progresses, as they are handed a USB with slides for a projection. So, they plug it into the computer, only to discover the images are PDF and are not all in landscape mode. Time to drag out our own laptop and convert and edit files to something PowerPoint can be happy with. Time is running away. There is a backing CD, as it is a junior Disney production. At least that is one

less job to worry about, mic'ing a 20 piece primary school orchestra.

The radio mics are ready, the kids have been stopped from playing with them. The slides are working to the client's satisfaction. Now time for the lighting, which is going to have to be done on the fly. It will have to be programmed as they rehearse, plus the audio levels will need to be set. Remember they only want one tech to be around. A teacher was going to help with the audio; pity they freaked when they saw the digital console. Now they are backstage helping with the radio mics.

The Stage Manager has never learnt how to call a show, and constantly drops the headset without muting to help a child, or yell at them.

Oh, look the SM is on stage suddenly – that is an interesting cameo role.

The tech is now running on caffeine fumes, wishing for something stronger. Lunch was a distant memory of a half-eaten sandwich. The client has become very cool on the idea of using the standard lighting rig with its nine specials. It was a good thing that the venue keeps this in place, correctly focused and gelled. A colour gel change may happen, let's hope the venue have a client friendly colour and the vertical lifter is charged.

One of the set pieces is drooping, the glue is not holding up to the weight of the students it seems. Nope; it is the adhesive - it does not like a lot of warm lights. The tech puts away the sidelights, which did help make the show look interesting.

The theatre is starting to smell funny – old socks and something undefinable. Turn up the air conditioner. Only a couple of hours to go before the first performance before an audience, so why are there lots of them around in the foyer with bags of food? They are feeding the students in shifts, so the tech rehearsal can continue without a break. That also explains the multiple directors. The tech's stomach smells the food and grumbles.

Audience are seated, the ushers trying to keep them from sitting in the aisles. It seems they have oversold. The tech will not allow the show to continue until cleared. The announcement is made about cameras and



A TRUE STORY

phones. Lots of flashes still happen, and the tech watches the eerie glow of light on the audience's faces.

The show staggers to a start. And settles into an uneasy rhythm, the audience seem to enjoy it. A parent walk outs after their child has finished performing. Phones are busier than the ushers. Interval arrives, batteries changed and a quick coffee and Mars Bar.

Second act starts with a missing child, parents have taken them home. Thunderous applause signifies the end. The audience are happy, the kids are hyper with happiness. They hug on stage, trampling sets and getting in the way of staff trying to tidy up. The show will happen twice more on the next day.

Then the alarm sounds. 6.30 AM. Was it a dream? Or the upcoming day? Groan.



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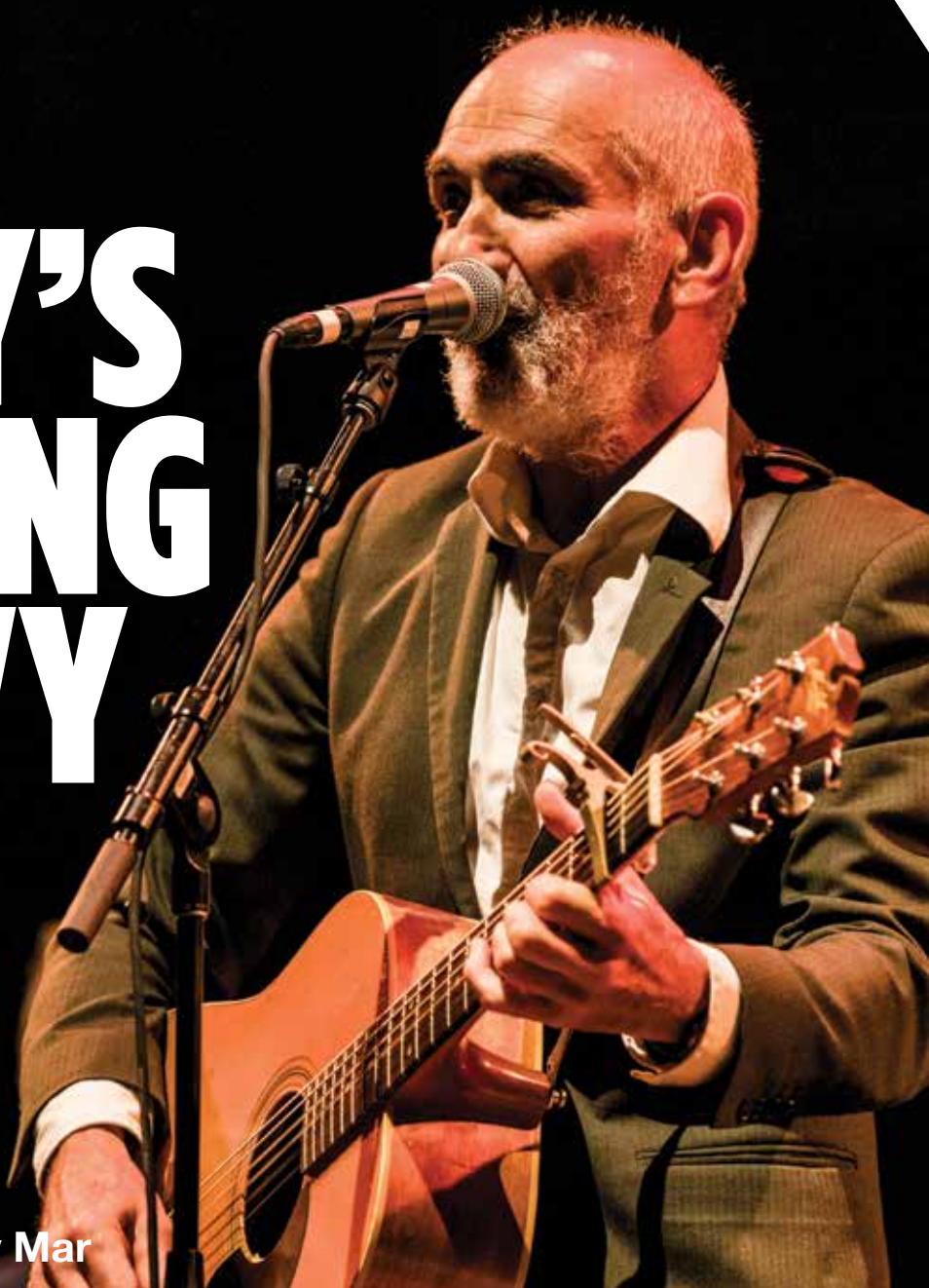
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PAUL KELLY'S MAKING GRAVY

by Cat Strom

Photo Credits: Ashley Mar



Next time there's a drought anywhere, just book Paul Kelly for an outdoor concert.

Many of us saw the footage on social media of the Melbourne leg of Paul Kelly's Making Gravy tour where extreme flooding resulted in the ground stacked speakers floating away from the stage.

Punters were advised during opening act Mojo Juju's set to vacate the venue's grassy hill and seek shelter to avoid being struck by lightning. Shortly after that, water gushed down the steps, with drains quickly blocked and front row audience members standing in mid-calf deep water and Mojo Juju forced to stop mid-song.

As the speakers bobbed around in water and crew frantically tried to rescue them, attendees were told to relocate from the Bowl to the GA section, while organisers decided

whether or not it was safe to proceed.

Around 7:30pm the show recommenced, with Alex Lahey performing at 7:45pm, two hours after she was initially scheduled to go on. Consequently every following act's performance had to be shortened.

The next day at Sydney's Domain, it was Groundhog Day with thunder, lightning and incessant rain. Doors were held for close to two hours leaving many queuing in the rain and again, all performances were cut short.

A week later, the show travelled to Brisbane's Riverstage and again the lightning, thunder and rain followed.

The concept of the Making Gravy show started in 2017 when Paul did a fairly

extensive tour through November and December culminating with a show at Melbourne's Myer Music Bowl with guest artists all celebrating Paul's 'Christmas' song Making Gravy. In 2018 the theme was expanded with shows in Melbourne, Sydney and Brisbane, the latter coinciding with the date December 21st as mentioned in the song.

Greg Weaver has been Paul's FOH Engineer/Tour Manager since 2002, saying he has loved and enjoyed every minute of the ride. He likes to refer to himself as 'platform agnostic' when it comes to choosing audio equipment, which on this tour was supplied by JPJ Audio in Melbourne and Brisbane with Eighth Day Sound supplying Sydney.

"All modern PA systems are fantastic and quite similar, to me the sound of the band comes much more from the band and less from the PA," commented Greg. "I like the

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sound of L-Acoustics and if I had to pick one particular PA, it would be that. We had L-Acoustics K1 and K2 in Melbourne and will have V-Dosc in Brisbane, while in Sydney we have a d&b J line array which is also a super high quality system.”

The d&b system in Sydney comprised a main left and right hang of 12 cabinets per side, plus a third outfield hang of 12 cabinets for stage left where there’s a large amount of audience. Added to that were three separate delay towers of d&b J, eight cabinets per hang. Added to that were various front fill for the people in the VIP area at the front of the stage.

Sydney’s Domain is a large space to cover and is demanding in terms of stringent noise restrictions.

“Because of this, I sought the advice of Colin Ellis, in my opinion Australia’s greatest live sound guy, about his experience in The Domain with Midnight Oil. He said it was extremely challenging but they were able to get the show done.”

“There’s a quite a lot of PA with a lot of array processing going on within the amps to try trim the sound so it is directed to specific areas of the space as opposed to spraying off into the ether,” said Greg.

“The biggest issue that I find is that the noise readings are instantaneous as opposed to averaged out over a period of time,” said Greg. “Last year we played the SOH forecourt which has a similar restrictive noise policy but they do have the advantage of having a noise policy where the sound level is averaged over five minutes.”

There was one piece of gear that Greg did specify and that was an Avid S6L, which he also used for last year’s tour.

“The console is now even more mature than it was in 2017,” he noted. “It’s a great sounding console although I’m still coming to terms with some of the changes in the work flow with the Avid S6L. However, I’m sure if I spent more time on it, I’d overcome those challenges.”

Greg insists that he doesn’t do anything special with the mix saying they are all amazing musicians resulting in great sound coming off the stage.

“Basically I just mic them up,” he asserted. “People often ask me about doing sound for Paul Kelly and it’s basically just sound reinforcement for incredible source material. There’s no musical wrangling or fighting between the instruments on stage, and the vocalists are all good, strong confident singers.

“I don’t use anything too fancy on the Avid S6L; a couple of reverbs for the drum kit, a reverb for Paul’s vocal plus a delay I use on particular songs, another reverb for the backing vocals, and a reverb I use on certain songs for a guitar effect. Previously I’ve only used all the onboard plugins in the Avid S6L, but this tour is the first time I’ve used the Waves plugins with it. The Waves plugins were very common on the Profile but they weren’t compatible with the S6L last year. I’m using a lot of the Waves plugins for EQ and so on, on the S6L for the first time on these shows. All the plugins I had regularly used on the Profile for years I was able to bring over to the S6L. There was a bit of teething with transferring presets and I had to rebuild some plugin settings.”

Microphones are standard Shure and Sennheiser models; SM57 on snare and guitars, Beta 58s on all the vocals and KSM32 for overheads. They only tour the vocal microphones and again, as the source material is so great and constant, changing mics around doesn’t make a massive difference to Greg.

On monitors was Gordon Wood with an Avid Profile console running a traditional monitor set up of only wedges and no IEMs. He said it was all pretty straightforward and everyone had their own mix. The band is always set up quite close, irrespective of the stage size, and always the same distance apart.

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RIEDEL BOLERO

by Ricki Cook

Writer Bio:

Ricki Cook is Head of Audio, Production Infrastructure, and Network Architect at Hillsong Church



About Riedel Bolero

Bolero is a wireless intercom system capable of supporting 10 beltpacks per antenna and up to 100 antennas in a single deployment. When used with Riedel's Artist matrix frames, Bolero runs over a standards-based AES67 IP network with decentralised antennas connected to AES67 switches and to Artist frames equipped with AES67 client cards, providing a fully integrated point-to-point roaming intercom ecosystem. The more decentralised antennas added, the more robust the network becomes.

Bolero's Standalone Application is license-based and comes with several plug-and-play features. First, antennas can be used individually, in a ring structure, or daisy-chained as the situation demands. Also, up to 100 antennas and 100 beltpacks can be integrated into a single system. These antennas can be placed up to 300 metres apart and up to five can be powered via the Cat5 network using an external PSU. The system is quickly and easily configured over the IP connection using a web browser. Finally, a throw-down box can be used to interface the standalone Bolero with other intercom systems via 4-wire.

The Bolero high-clarity voice codec provides

both higher speech intelligibility and more efficient use of RF spectrum supporting twice the number of beltpacks per antenna for the same audio bandwidth as other DECT-based systems.

The Riedel-exclusive ADR technology combines a unique receiver design with multiple diversity elements specifically designed to reduce sensitivity to multipath RF reflections, making Bolero useable in challenging RF environments where other systems have great difficulty.

The beltpack itself features six buttons for six intercom channels or point to point communications, plus a separate "Reply" button that easily facilitates a reply to the last person that called. Bolero's sunlight readable and dimmable display can be inverted so that it is readable in any orientation. Also, in an industry first, the beltpack can be used without a headset like a walkie-talkie radio utilising an integrated mic and speaker.

Bolero beltpacks support Bluetooth 4.1, allowing either a Bluetooth headset or a Smartphone to be connected. When a Smartphone is connected, the beltpack can act like a car's "hands free" setup so the user can receive calls on their phone and talk and listen via their beltpack headset. Users

can also inject phone calls directly into the intercom channels, providing new levels of workflow flexibility.

Review

At Hillsong, we needed to replace our aging Riedel Acrobat system at the Baulkham Hills campus. We have a strategic relationship with Riedel, and they're our comms partner for both our installations and live events. We use Riedel exclusively within Australia, and try to keep that consistent globally. As part of that relationship, Hillsong were the first in Australia to take delivery of Bolero, and we got to participate in an early product trial, which enabled us to send feature requests to Riedel, which they took on-board and implemented.

Before Bolero

Before we installed the new Bolero system, Baulkham Hills was running Riedel's Acrobat wireless comms on a pair of Riedel Artist 128 matrix mainframes, one in each primary campus building. It was an AES3 system using Cat client cards, which meant a point-to-point Cat5 run for every intercom panel. We've started migrating our comms to IP, which means we can just plug into the network and don't have to worry about dedicated comms tie lines. For the Acrobat wireless system, we had antennas all over



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the building to maintain coverage, and still had small RF issues. I'd describe the RF environment at Baulkham Hills as 'medium difficulty'; there's a lot going on.

Bolero operates on the DECT standard, in the band around 1.9 GHz. We did an audit of that spectrum, and managed to clean up some bits and pieces we had operating in that range before we installed Bolero. As soon as we swapped over, we found we could operate happily with just three antennas compared to eight. We had 20 Acrobat packs, and now have 30 Bolero packs across the campus. Acrobat signal distribution was based on MADI, and we have replaced that and the analogue cabling with Bolero's AES67, migrating the infrastructure to the network. As we own other AES67 compatible equipment including Lawo and QSC Q-SYS, we now have the ability to share AES67 streams between all these devices.

Hillsong Conference

For us the real test of Bolero was when Riedel Australia took delivery of rental stock just in time for July's Hillsong Conference, which enabled us to use 55 Bolero packs in Sydney's Qudos Bank Arena during the event. Anyone familiar with Qudos Bank Arena knows it's an RF nightmare. The sheer amount of steel in the structure and its placement causes a huge amount of multipath reflections. You can get away with anything transmitting up to the UHF range, but anything higher than that becomes troublesome. We always had RF issues with Acrobat there, and had to be strategic with antenna placement, meaning we deployed an excessive amount. Clear-Com's Freespeak II also had similar issues.

When we used Bolero, we managed to run the whole system with just five antennas in one location. We got clear and exceptional coverage everywhere, including the catwalks. This confirmed our decision to roll out Bolero to our whole network. Our new building at Baulkham Hills got the first system, then the Baulkham Hills convention centre, which we've followed up with purchases for our two Sydney city venues, the new Brisbane city theatre and Brisbane's Mt Gravatt campus.

Improvements

The biggest differences we perceive as users compared to Acrobat is less latency, which has significantly reduced both pack-to-pack and pack-to-panel, and clearer audio quality. Bolero's management in DECT is brilliant; you can just leave it alone and it does its own frequency hopping. The antennas in the system communicate with each other to ensure signal quality, and the whole system is timing-locked with PTPv2, including the AES67 audio.

Packs Practicalities

Our packs have gone from Acrobat's four channels to Bolero's six channels. We find the new packs to be more intuitive and user-friendly. While the Acrobat packs weren't complicated, we did find that you did have to look closely and squint to see labels. Bolero has a big backlit display, the buttons are tactile and sensitive, and you can easily feel for them and push them in dark conditions. Bolero also has a 'Common Reply' button, as the panels do, which didn't exist on Acrobat. We really like the ability to unplug the headset, put it in walkie-talkie mode, and use the on-board speaker and mic. A lot of our techs do

this, dropping it onto a desk and using it like a panel, which you can safely do because the belt clip has a rubber backing so it won't slide around.

Firmware, Maintenance, Battery

The firmware upgrade process is much easier than its predecessor. The Bolero pack charger has five bays; when you upgrade firmware, you put the files on a USB stick, plug it into the charger, and it flashes all five packs. In our venues, there's three or four chargers mounted to the wall, and they have RJ45 connections that, in a future version, will allow you to push firmware updates and monitor packs, sending you alerts if a pack is not returned.

The management software also has a locating feature; if you want to locate a pack, it will tell you where it is, and which antenna is closest, based on the signal strength from multiple antennas. If the pack is offline, it will tell you where it was last registered. The only problem with this is because you're using fewer antennas than the old system, you get a much coarser triangulation.

We've found the Bolero packs to have a really long battery life. On a Sunday, our packs are run for about 16 hours, and they don't have to go back on their chargers during the day.

Standalone Application and NFC

Riedel have released Standalone Application software and an AES67 breakout box for running Bolero without a matrix frame. This really suits our smaller locations that just need a reliable wireless comms system. All you need to do is set-up an antenna, switch it to standalone mode, and register the packs to



the antenna via NFC. That gives you six party lines, and away you go.

The NFC capability means our techs can also roam between venues with their packs. To use their pack in a new venue, they just need to walk up to an antenna, hold the pack up, and it registers to that venue. The packs store can store multiple venues and Bolero network settings. On Sunday morning when we have stage managers moving between venues, they don't have to swap packs; they just walk in and the show channel automatically changes to the venue they're in.

Support

Riedel's support is exceptional. At Hillsong Conference, when we had 50 people working who hadn't used a wireless comms pack before, Riedel staff were there to train them. Any technical issues we've had have been resolved quickly. That being said, the only issue we've had was caused by a fault on our side - Germany was online at 5 PM our time, and we had an answer at 6PM. They're also great at keeping us up-to-date with firmware updates.

Brand: Riedel

Model: Bolero

Product Info:
riedel.net

Australia and New Zealand:
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DPA D:VOTE CORE 4099 INSTRUMENT MICROPHONE

by Jimmy Den-Ouden



DPA makes premium level condenser microphones. Before leaving the factory, each mic capsule they make is measured on and off axis to verify it performs to spec. They're the kind of company who wanted to make a wind-screen for handheld mics which better rejected wind noise, so to do this they built a wind machine which made constant wind pressure. This allowed them to measure how different designs work in controlled "windy" conditions, and optimise accordingly. Clever. Their entire manufacturing process is very consistent, and their technology is very measurement based. For many makers this would be enough.

The 4099 d:vote range of mics (I say range, but there's really only two) has been around for several years now. The 4099 is a small diaphragm supercardioid condenser microphone with an integral wind screen and 140mm gooseneck. The capsule itself sits at the end of an interference tube which define its polar characteristics. Variations in the line have previously included matched stereo pairs, and a "low sensitivity" model. And that's it. Basically the idea is one mic to suit all occasions, applications, and placements. In aid of this there's a very wide range of mounting options available, including string instrument mounts, drum mounts, piano mounts, guitar mount, and perhaps the most popular of all, the accordion mount. For bagpipes, use the "universal" mount which

comprises a rubber block with a Velcro strap. There's even an adapter to allow the 4099 to be fitted to a normal mic stand thread. Each mount has a channel into which the gooseneck slots, then a locking clasp slides over the channel.

It's a very versatile platform, especially when you have a lot of mics and a lot of mounts. Before we get to sonic properties, let's talk physical practicality. I'm getting older now, and the more time passes the more reluctant I find myself to carry heavy things. At a mere 28 grams, 4099s are very lightweight mics, and they're very compact too. This means you can carry a lot of them around in a very small case with minimal effort. Want to take your entire mic kit as carry on hand luggage? No problem, just be aware that the DPA

brand sits at a premium level and it is priced accordingly.

DPA insist you can use a 4099 on virtually any instrument you like, and really the only exception I (and others with whom I've discussed it) can find to this is a bass drum. Contrary to common misconception, you don't need a large diaphragm condenser mic to capture low frequency sound. Small diaphragms can do the job just as well. The 4099 mount does work on a bass drum and the mic can certainly handle the SPL and frequency range, I just don't know that I like that much accuracy for that particular instrument.

As good as the d:vote already was, DPA decided they wanted to make it better. The CORE by DPA version has seen upgrades to the internal electronics to reduce distortion, maximise SPL handling, and minimise self-noise. Physically the wind-screen has been re-designed with a slight taper and a flatter front section, and I think it looks a bit cooler now. The range now includes two versions for "high" SPL and "extreme" SPL applications – these are marked with a red or yellow band on the gooseneck respectively. The difference in SPL handling is 10dB, with the extreme model good for up to 152dB. That's very loud.

Because the mics are miniaturised, so are the cables, which terminate to the DPA "microdot" connector. This can be attached to an XLR pre-amp module, or alternatively to a range of brand specific adapters to allow connection to wireless systems. Need a wireless stereo piano mic setup that you can't see? No problem. If you should trash a cable, rest assured they are detachable and replaceable.

As much as the electronic benefits of CORE will be appealing to those using the 4099 in a studio or recording situation, some of these will be less apparent in a live sound environment where there's already generally

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| MF | 4x 6.5", 2" v.c - Neodymium |
| LF | 2x 12", 3" v.c - Neodymium |
| Amplifier | 2x 1600 W RMS (3200 W RMS) |
| Frequency Response [-6dB] | 55 - 18.600 Hz |

| | |
|---------------------------|------------|
| Width | 1100 mm |
| Height | 380 mm |
| Depth | 450 mm |
| Weight | 54.4 g |
| Expansion Card | RDNet Card |
| Expansion Card [optional] | Dante Card |

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a noise floor in the space. Taking the CORE 4099 to a gig and putting it next to a previous generation unit, I noticed the side axis rejection seems gentler on the CORE model than on my older versions.

Since it was a rainy day at my outdoor gig that day, perhaps one of the most appealing features to me in that instance was that the 4099 CORE version is IP58 rated. When you're using a lot of high end mics outdoors there's always a certain sense of apprehension which rolls in around the same time as the storm clouds. It's nice to know that the gig will stop working well before the mic does.

Another common misconception about condenser mics is that they're more prone to feedback, so let's dispel that using some science. On axis, the signal response of the 4099 CORE is effectively linear from 30Hz up to around 15kHz. There's a little rise of around 3dB about an octave wide, centred about 9kHz – call it a presence boost. The off-axis response at 60 degrees from centre is essentially the same curve with an overall

level reduction of 5dB. At 90 degrees it's about 8dB down, with the HF starting to fall off more rapidly above 10kHz. Compare this to a basic standard dynamic mic, and you'll realise it's very polite and well behaved.

As with every supercardioid mic, there is a little rear lobe to the polar pattern of which you should be aware, but so long as you keep this in mind and don't stick a wedge directly behind the mic it's not a problem. With thoughtful placement and good linear wedges it's easy to achieve substantial gain before feedback on monitors using these mics with little or no filtering. Musicians generally appreciate being able to hear their instruments accurately on stage, so for them this is a huge win.

So far as FOH mixing goes, it's wildly cool to be able to just push up the faders and have everything sounding pretty well right straight off the bat. With the combination of multi-track recording solutions being so easy to deploy and availability of high quality microphones, the opportunities for live content recording just keep increasing. It's

an exciting time for the capture of great live music content.

It's probably worth mentioning that if you put a really accurate mic like a 4099 onto a bad sounding instrument, you'll get a louder version of the bad sound. Fortunately though if you're using premium mics chances are you're probably dealing with a premium level act. Mostly these people have their instruments pretty well sorted, so "garbage in garbage out" isn't much of a concern.

Ultimately the long and short of it is that the 4099 is a brilliantly versatile, accurate, and deployable mic. With the CORE edition DPA has taken a good thing and made it better.

Brand: DPA

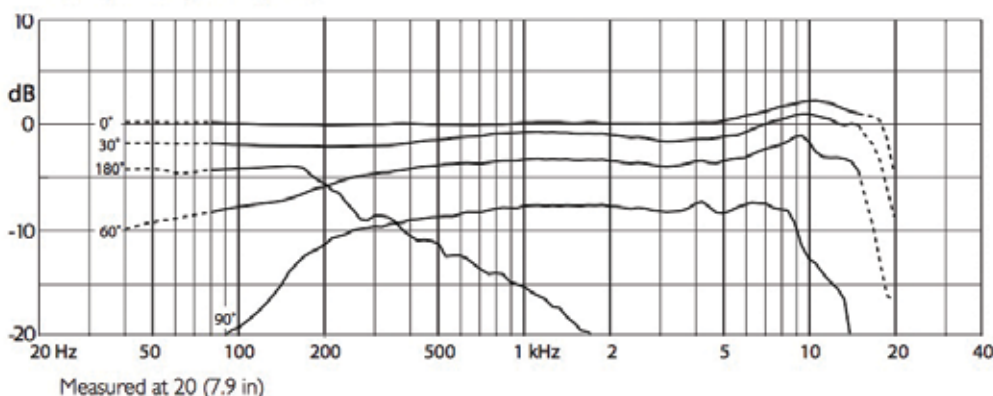
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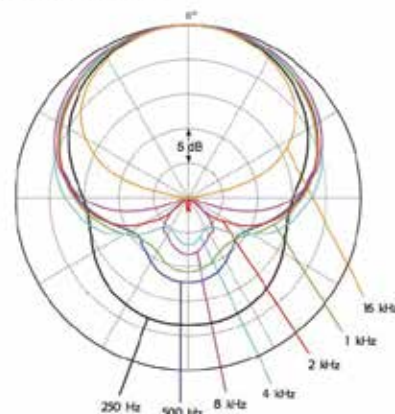
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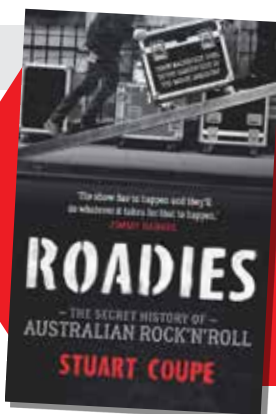
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Writer Bio:

Ben Morris is the Executive Manager – Technology, at the Gold Coast Convention and Exhibition Centre



Claypaky Axcor Profile 600

by Ben Morris and Ian Fynney

The Gold Coast Convention and Exhibition Centre has a lot of flexible spaces and only limited opportunities to install equipment, so we operate as a production company within a venue.

We needed to replace existing stock that had come to end-of-life, and were also looking to reduce the ongoing costs of lamp replacements, maintenance, and power consumption by moving away from standard fixtures to a high output LED fixture.

We were looking for LED source in a medium sized chassis with as high an output as we could find. We also wanted framing shutters and high quality optics. As we're primarily working in the corporate market, framing is important for clean looks.

We initially looked at the Claypaky Axcor 900 and 300; the 900 was too big and expensive, and the 300 had no framing system. They were both impressive fixtures, but not quite right for our applications. The Axcor 600 gave us a real 'Goldilocks moment' in that it had the perfect balance of cost, size, versatility, and output. We've purchased 24 units of the Claypaky Axcor Profile 600 to be part of our general inventory.

Claypaky's reputation in the international market is important to us in considering a product purchase. Being a convention centre, we operate in a global market and pride ourselves on having industry standard equipment. Claypaky aligns with our goals. We have a diverse range of clientele, and we can be working on a local school formal one day, and have an international producer specifying lighting the next day. Any product we stock needs to be acceptable to every client.

Colour and Intensity

Our lighting team are reporting that the Axcor Profile 600s colour rendering and intensity is a significant improvement on our old moving head fixtures. While we have opted for the low CRI model for the advantage of higher output, the rendering is still more than sufficient for our needs. There's an output "boost mode" if we need it, which provides a 25% increase in intensity at the expense of lower CRI, which is great for bright beams in concert touring applications. (Available on the standard version and on the HC version)

Framing

The Axcor Profile 600 uses Claypaky's patented framing system, which provides us with sharp focus on gobos and shutters simultaneously, which I felt no other fixture could deliver because of the difference in focal length between the two in the optical path. In corporate events, particularly on sets, it's extremely important to get that detail right; it's the extra level of detail that these fixtures can deliver that we value.

Light Field

The Axcor 600 is carefully engineered allowing the LED to mimic the hotspot of a discharge fixture, creating a peaked field in the centre of the beam for focusing stage objects and audience attention.

Gobo, Animation, Frost

There's the standard one wheel with 7 rotating gobos, and one animation wheel (interchangeable with fixed gobo wheel). The included gobos are fit for purpose, and are neither special nor disappointing. The animation wheel is typical Claypaky; optically

excellent, responsive to changes in speed and focus, and gives us exactly the effects we need. The frost filter comes in handy when we're using the Axcor Profile 600 as a generic fixture; this saves us time and labour on installs, especially considering we don't have to use EWPs to focus. That's where a lot of the ROI is.

Zoom

The 1:9 ratio of the zoom, at 5 to 45 degrees, makes the Axcor Profile 600 a versatile fixture that can be used as a profile or a wash. Its movement is fast and accurate, including in challenging applications like framing around a projection or LED screen, recalling scenes millimetre-perfect.

Noise and Handling

Its noise floor is quiet for a fixture of its size and output, mainly due to the LED engine not needing as much cooling as a standard fixture. At 33kg with a locking mechanism, manual handling poses the same challenges as any other fixture with comparable output.

Applications and Performance

We recently deployed 16 Axcor Profile 600s for the Australian All Star Cheer and Dance National Championships. They were used for gobo breakups across the performance floor. Due to their intensity we were able to get deep reds, congo blue, dark blue and purples across the matt black floor and still have the impact we needed in a 5,000 people arena. We couldn't have achieved that with any other fixture in our stock.

All 24 units in our inventory were used on the Pan Pacific Masters Games opening and closing ceremonies for straight-up rock'n'roll effects; fast movements, bright beams, performer spots. Anything they could do, we did. It verified everything we admired about the fixture's performance. Most recently, we used the Axcor Profile 600s at a corporate Christmas banquet for 900 guests as a profile,

The Specs

Source: 500W White LED Engine

Versions available:

- CRI: at least 70, CT 6500K, 28000lm
(Axcor Profile 600 and ST)

- CRI: at least 90, CT 5600K, 21000lm
(Axcor Profile 600 HC and HC-ST)

Ø 132mm front lens

5.3°- 47.2° linear Zoom

CMY + Linear CTO

One Colour Wheel with five colours

One rotating gobo wheel with seven gobos

Rotating 4-facet prism

Animation wheel
(interchangeable with fixed gobo wheel)

Motorised framing system
with 4 focal planes

Framing system indexable
over 90 degrees

Variable Frost filter

Iris with multiple macros
(random, pulsing...)

Electronic linear dimmer,
16 bit and 4 curves

Electronic strobe @25 f/sec.

Weight: 33 Kg



Brand: Claypaky

Model: Axcor Profile 600

Product Info: www.claypaky.it/en/

Australia: www.showtech.com.au

New Zealand: www.showtech.com.au/homenz

a backdrop, a room wash, and for breakup effects, which really highlights their versatility.

Conclusion

Overall, the Axcor Profile 600 is the only fixture that meets all of our technical criteria and has the brand heritage and consistency to back it up. I'm currently looking at a business case to determine if we should remove many of our generic fixtures and

use intelligent lights for stage wash and spot lighting. They are more expensive to purchase, but if the quality is there for broadcast and IMAG, focussing is easier, and there's less high-risk work involved, the savings in labour and workflow go without saying. And for worker safety, anytime you don't have to bring an EWP into a space, that's a good thing.

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¹Passion, Pride, Pitfalls Dec 2014

www.entertainmentassist.org.au

Supporting the mental health of Australian entertainment industry workers

by Duncan R Fry

TOMMY CAN YOU HEAR ME? NO, NOT IF BARNESY DOESN'T STOP SCREAMING!

The Ultimate Rock Symphony revisited 19 years later

Because I'd been a good boy and ate my greens all year, I received a copy of Roger Daltrey's autobiography 'Thanks a lot Mr Kibblewhite' for Christmas. I've read a lot of rock autobiographies over the years; some good, some terrible, most just plain boring, because the artists all appeared to have forgotten the details of their early days, their albums, their concerts, the recording sessions, and ultimately the books end up being bland and forgettable like their tired and forgettable authors.

But not Roger Daltrey. He's remembered every detail of anyone who's ever duded him, and he's takin' names 'n' kickin' arses! That's what I like to read, and I enjoyed every page of it!

He also favourably mentions his appearance on the concert tour of The Ultimate Rock Symphony back in the year 2000, which I went to see. My notes on the show follow - I've left them as they were written, without the

hindsight the passage of 19 years could bring.

I'd always been a little uneasy with the concept of an orchestra playing with a rock band, as I imagine most of the performers in The Ultimate Rock Symphony would be if they were honest with themselves. An unhappy melange of aggressive young music and tired old classics. So it was with great trepidation that I went along to the concert, expecting the worst. As you'll see, I was right and wrong.

The night started with the overture from Tommy. Not something you hear every day, but a good showcase for the talents of the band and orchestra.

Roger Daltrey opened with Pinball Wizard, enthusiastically waving his mic on a lead maybe a little bit too much, almost like a parody of himself. Still, at least he still had his distinctive voice and undeniable stage presence. The night's looking up, I thought, having been a Who fan since the early 60s. With Pete Townshend's brother Simon on rhythm guitar and higher harmonies and Simon's son Ben on drums, it didn't sound half bad.



“Hey - that’s my guitar,” yelled Frampton!

Whoops - I spoke too soon. Out came Billy Thorpe for an agonised version of Ruby Tuesday. The least said about that the better, although there was worse to come later.

Daltrey introduced a protégé of his; a woman called Nikki Lamborn. I hadn't heard of her but boy could she sing, which she showed off on Led Zeppelin's Kashmir. This was unfortunately a duet with Barnesy, and rapidly deteriorated into an everyone-for-themselves scream fest. Barnesy's got a great rock voice, but there's no light and shade in it when he screams every word of every line of every verse flat out.

Nikki left the stage and Barnesy screamed his way through Working Class Man, one of my all-time favourite songs, but to be honest I've worked with cover bands who've done a better job of it. Still, at least it wasn't a Beatles cover, as much of the evening seemed to be.

Gary Brooker from Procul Harem came on next with Conquistador, which got a little lost in the middle, then handed the mic over to Paul Rodgers, who stumbled his way through an insipid Beatles/Lennon medley, starting with Give Peace a Chance. Unfortunately, I can't listen to that song without remembering mixing the semi-legendary Pete Best Beatles - the five purple princes of cabaret, who would sing "...All we are saying, is give Pete a chance!"

This was followed by Imagine, Blackbird, and Come Together. If it hadn't been a non-smoking venue then we could have all waved our cigarette lighters! - and today, of course we would have all waved our phones!

Peter Frampton joined him on stage for Norwegian Wood, yet another Beatles cover. Jeez, I thought, is this what the whole night's going to be? Lacklustre back-to-back covers? Finally Frampton waved goodbye and to everyone's relief, the power chord intro to Bad Company's Can't Get Enough started and the night really fired up.

And then it was interval. Just when everyone was starting to get into it, they stopped.

The second half started with Nikki Lamborn doing an excellent version of Stairway to Heaven. With her long curly hair she even looked a bit like Robert Plant, (although from about 150 metres where I was it could have been Jeff from The Wiggles up there!) and she sounded a whole lot better.

Then Peter Frampton came back out for his solo set. His opening comment of "Please, no jokes about my hair..." had everyone asking "What hair?" and then he commenced a turgid version of Jumping Jack Flash. This was truly depressing. Anything less jumping and flashy was hard to imagine. All around me the audience was muttering "Jeez, just who is choosing these songs? Let's hear some of their own stuff, not these half baked covers."

It ended eventually, and in contrast he played a great slick version of his own hit Ooh Baby I Love Your Way, then left the stage to Alice Cooper.

Alice was pretty damn good. He hasn't really changed at all. He had a head like a robber's dog when he was younger, and he still does. He couldn't sing when he started and he still can't. But he's got bucketloads of confidence, charisma, and he knows how to put a song over. His version of Brick in the Wall was scary, to say the least, and when he did School's Out he sounded better than he ever did with his own band.

When Roger Daltrey came back out and delivered a great sounding You Better You Bet, my hopes for the evening soared.

Then it all fell to pieces when Thorpie came back out and duetted with him on... have a guess. Poison Ivy? The Suck More Piss cheer from Sunbury? Nope - another bloody Beatles cover, this time Let it Be. The collective groan around me was louder than the band.

Look, make no mistake, Thorpie can still sing. His voice is in great shape - high notes, low

notes, he can deliver a song with the best of them, but his talent was surely being wasted on this tripe. And then he joined Daltrey on another great song Won't Get Fooled Again. Excellent.

Gary Brooker came back out for a tour de force version of Whiter Shade of Pale, which was excellent as well, but its effect was spoiled by Frampton doing yet another Beatles cover, a dull but well played While my Guitar Gently Weeps. Yeah, I was weeping too. With frustration!

At last Billy Thorpe played the opening chords to Most People I Know, which brought cheers and applause from the audience. Most people I know were wondering how he ever got himself roped into a gig like this, as we sang along while Thorpie told us "F**k the bouncers, let's dance". Trouble was, with most of the audience being 50+ years old baby boomers, dancing was less on their mind than getting home to the babysitter!

The evening was winding up now, and we had Alice and Daltrey doing Start Me Up. Like every other Windows 95 user I'm sick of that song, but then all was forgiven with a blistering My Generation from everyone. Peter Frampton came out in a ravishing lime green shirt and shorts combination, looking like Angus Young Goes to Hawaii and played a stunning short sharp solo on his voice tube. "Frampton Finally Comes Alive", a voice behind me said!

After See Me, Feel Me, Daltrey strapped on an acoustic and the whole ensemble joined in on the final number, Squeeze Box. This was a great relief, as the official program listed the finale as Hey Jude, and we were all dreading that.

Then, at the end, Daltrey shouted "This is for the Prime Minister who threw us out of the country back in 1968," waved the guitar in the air then smashed it to pieces on the stage!

"Hey - that's my guitar," yelled Frampton!



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