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- ENTECH reveals statistics
- LPA rolls out Guides
- Julius Grafton signs off
- New Gear

REGULARS:

- Andy Stewart
- Simon Byrne
- ACETA
- Duncan Fry

GEARBOX:

- Midas MR18 Digital Tablet
- An ACME double
- Televic Plixus
- Theatrixx Technologies X

ROADSKILLS:

- Roger Waters
- Foo Fighters
- Paul Weller

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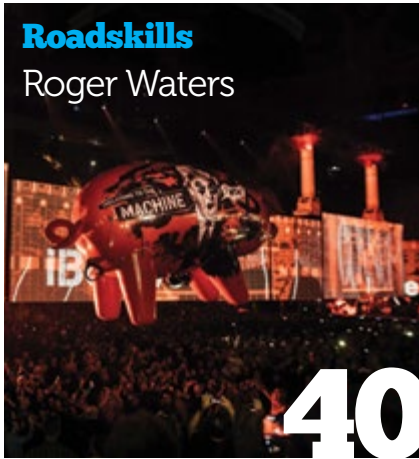
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Jimmy den Ouden (right) wins the TMB ProPlex cable rolling tournament in Sydney

ENTECH breaks new record

Over half of all buyers attend

ENTECH Roadshow passed a major milestone in February with trade visitors accounting for more than half of A\$400 million in annual industry-wide gear purchases. Registration data for more than 2,000 trade this year reveals they spend A\$220 million.

The 33 exhibitors showing at ENTECH represent around 80% of all product distribution across the SVL (Sound/ Staging, Video, Lighting) for live and live install market over Australia. For many of them, ENTECH attracts the majority of their customer base.

“Our message is we take the show to the people”, said general manager Steve James. “Exhibitors are genuinely engaged year after year because they see the right people and are not swamped with tyre kickers. We are really particular about who we invite.”



Since it was established by the late Caroline Fitzmaurice-Grafton and CX Publisher Julius Grafton in 1994, ENTECH has attracted around 55,000 trade visitors. It ceased as a large multi-day tradeshow in 2011 as trade shows either become mega-sized or they start to fail.

Now after 7 years, the Roadshow reaches over 2,000 people yearly and the majority of them (67%) report they are permanently employed – which is consistent with them having significant buying power.

This year the Roadshow covered 10,000 km, with a 6am start at each venue, 12 local crew, 6 tour crew, 3 semis with 500 cases to unload, then 100+ exhibitor staff all arrive for an intense morning by 8.30am. Once the show has opened over 300 hours have been expended that very morning.

“The Roadshow format delivers better outcomes for time-poor visitors and for exhibitors who love the same day per city format”, concludes James.

For 2019 ENTECH moves wholly into March and shows at Brisbane BCEC, the Big Top at Luna Park in Sydney, Melbourne at MCEC, in Adelaide it moves to the Showgrounds and in Perth ENTECH returns to PCEC.

This Winter ENTECH NZ runs in Christchurch, Wellington and Auckland and then debuts in the South-East of the USA in September. ENTECH USA then adds the North-East and the Mid-West in May 2019 with further regions planned for the second half.



LPA ROLL OUT MAJOR INDUSTRY RESOURCES

SAFETY GUIDE PLUS HARASSMENT AND BULLYING CODE

Live Performance Australia (LPA) has kicked off the new year with the release of two major industry resources. The new Safety Guidelines for the Live Entertainment and Events Industry is now available on their website.

These new Guidelines replace the Employer Guide to OH&S published in 2004. The objective of the new Guidelines is to promote best practice in delivering safe events and safe working environments and raise awareness of the practical and legislative requirements to manage health and safety issues appropriately.

LPA will be undertaking a national roadshow in the coming months to promote and provide information on

the new guides, starting in Brisbane on Thursday 8 March.

Now LPA has taken action to address serious issues relating to discrimination, harassment, sexual harassment and bullying in our workplaces, including developing a draft Industry Code of Practice (Code) for consultation.

“It is important for our industry to have consistent standards and practices to provide a safe, respectful workplace that is free of discrimination, harassment, sexual harassment and bullying. LPA’s role is to set the standard we expect for our industry and to help our members meet it”, said LPA head, Evelyn Richards.

“It’s our responsibility as employers to ensure we have the policies and

procedures in place that support our people. It’s our responsibility to drive real cultural change through effective training and education. It’s also an expectation of our employees, those who work in the industry, government, and our audiences.



We need to
**‘walk
the talk’.**

www.liveperformance.com.au



Jands to distribute Biamp

Biamp Systems are a leading provider of networked media systems, and today announced that effective Feb. 19, Jands will be the company’s distributor in Australia and New Zealand.

This completes the project undertaken by Jands to re-position away from Harman group products, a seismic shift that has led to CMI Audio taking on Harman brands like JBL, Crown, Soundcraft, BSS and dbx.

In the previous half year, Jands have taken on Robe (after relinquishing Vari*Lite), Gibson Pro (KRK, Stanton, Cerwin Vega); L-Acoustics; and QSC Pro: (MI and production products).

Now they have Biamp, distributing the Tesira, Devio, Audia, Nexia and Vocia product lines. Midwich, Biamp’s current distributor in the region, will remain so through April 18.

“We’re excited for the opportunities this new partnership brings,” said Jim Seretis, consultant liaison and business development manager for Australia and New Zealand at Biamp Systems. “Not only will this benefit our current customers, but it will enable Biamp to add to the AV growth throughout the region.”

Jim previously headed Biamp when it was distributed by Audio Products Group, where the brand

saw considerable growth. That relationship withered when Hills made a bad call buying APG, and meshing together a basket of well performing brands and causing conflicts with many of them. Seretis headed to Biamp. Midwich took on the line, and now it sits at Jands.

The addition of NZ into the Biamp distribution poses some challenges, since the Jands entity in NZ is not connected to the Australian Jands. Jands NZ retains some of the Harman lines that Jands Au have quit. Some kind of marketplace delineation will no doubt happen soon, since Jands Au are determined to sell Robe, L-Acoustics and possibly other things into NZ under their own flag.

Julius Grafton's CX farewell

New editor-in-chief prepares to stoke the fire



Since 1990 I've enjoyed every deadline and presided over every word in this fine journal. It's reflected my view of our industry and carried my values. That's the great privilege and responsibility of publishing. Owning your own platform to spruik your own views is awesome. Using it properly means I got this far.

After this issue of CX hits your eyes I'll step right back to become just the publisher, the guy with the ultimate responsibility. No longer will I lead, guide and opine - unless asked to do so by the new editor in chief, Jason Allen.

The decade I've known Jason has allowed me a growing appreciation of his skills, ability and commitment to this small, boutique and sometimes precious industry. He shares the passion that makes the show go on and raises the curtain on time.

He says he will find his feet in the new job and then look to find improvements without setting fire to the furniture. We're committed to print, so that won't change, but almost everything else is up for review. How he does this is up to him. I'm a firm believer in

delegation and I back decisions made in my name.

Jason has a larger budget than many trade magazines. We remain committed to commissioning original material and running the best photography we can buy. Steve James remains the backstop at CX as General Manager, maintaining the important commercial relationships and helping the editor make rational decisions. Jason will be easier to deal with than I ever was.

This came about with the formation of ENTECH Roadshows Global and the roll out across America. In December I realised, while on a road trip with my USA partner Brian Blackmore, that my time needed to be properly invested in that project. It coincided with my realisation that Jason could take this on, and he enthusiastically agreed.

While this is adieu, it isn't curtains since Jason has indicated he would still like me to feed some news and maybe the Biz column - although I don't expect him to use all of it. I wonder how it feels having your material rejected? I was until now the rejecter-in-chief!

Jason seems prepared to confront some of the issues and malcontents that I've chewed over the years.

I'll miss the semi-regular legal letters from aggrieved 'victims' who have dialled a lawyer in anger after I've written the horrible truth about their mistakes. I have a file full of them, and always have fun 'engaging' with their lawyer as often as possible to ramp up their costs before they realise they don't have a case. Maybe Jason will get a few letters?

I really look forward to reading CX the same as you do - and not for ten days at a time across deadline! The only time I'll read material before you is if Steve and Jason decide they need my adjudication for some reason and enact our editorial resolution solution.

See you at
an ENTECH
sometime!

- Julius

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AVID WSG-HD 01



Avid's Waves SoundGrid High Density (WSG-HD) Option Card offers Avid VENUE | S6L users full control of all Waves plug-in parameters directly from the S6L's host of knobs and the VENUE software interface, and also supports full show file import from legacy systems. This enables engineers with VENUE show files created on older VENUE TDM-based systems (such as VENUE | Profile) that use Waves plug-ins to easily transfer them for use in VENUE | S6L – complete with plug-in parameters and settings.

Australian Distributor: Avid / www.avid.com or 0499 999 896

AYRTON GHIBLI 02



Ghibli is Ayrton's first LED spot luminaire that is factory-equipped with a framing system. Fitted with an LED module using a high-output monochromatic white light source calibrated at 7,500K, Ghibli delivers a light output of 23,000 lumens in a highly compact format.

The proprietary optical system, equipped with a 137 mm frontal lens, has 13 high-quality lenses, delivering an 8:1 zoom ratio and a zoom range of 7° to 56°. The optics produce an extremely uniform fat beam with no hot spot.

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



03 BOSE T8S AND T4S MIXERS

Bose Professional has extended the ToneMatch audio engine series with the eight-channel T8S ToneMatch mixer and the four-channel T4S ToneMatch mixer. The performer-focused and compact eight-channel T8S ToneMatch Mixer is intuitive to operate, with illuminated, stage-friendly tactile controls, an easy-to-read display and scene recall. ToneMatch processing presets, including studio-quality effects and Bose zEQ equalisation, make it easy for musicians to

take control of their music. The four-channel T4S offers most of the same features as the T8S, except for an Aux send count of two, and outputs to either quarter-inch TRS balanced stereo or dual ToneMatch links.

BOSE S1 PRO

Bose Professional is debuting the S1 Pro multi-position PA system – an all-in-one PA, floor monitor, practice amplifier and primary music system. Designed for singer-songwriters, DJs, and general PA use, the S1 weighs 6.8

kg and has dimensions of 330 x 241 x 286 mm. Designed to be used in four different positions, built-in sensors detect positional changes and trigger Auto EQ, which automatically recalibrates the system's internal settings for each different placement. It includes a three-channel mixer, reverb and tone on two channels and Bluetooth streaming and an optional rechargeable lithium-ion battery.

Australian Distributor: Bose
www.bose.com.au/en_au/professional.html or 1800 023 367

04 CHAUVET DJ VIVID 4

The Chauvet DJ Vivid 4 is a modular video panel featuring black-body LEDs that accurately reproduce high-contrast videos. Vivid 4 makes a perfect DJ façade and seamlessly integrates with Serato for displaying music videos to add gig excitement. Set up is easy and fast with multiple magnets and positioning pins that make getting up and running tool-free and effortless. Dual power supplies ensure downstream

panels don't lose signal. Intelligent modules with dedicated memory improve the image quality and simplify maintenance. Panels can be suspended vertically or horizontally offering different aspect ratio options. Multiple Speego connectors mean Vivid 4 sets up twice as fast as other panels.



Australian Distributor: Audio Visual Engineering Pty Ltd
avecorp.com.au or (03) 9706 5325

DB TECHNOLOGIES VIO L208 05

The VIO L208 is a 2-way active line array system equipped with two 8" neodymium woofers and one 1.4" neodymium compression driver with 2.5" voice coil). The transducers are positioned behind an all-in-one panel which acts as a phase-plug and a HF horn. The waveguide behind this panel contributes to the creation of a cylindrical wavefront. Each



module of VIO L208 is driven by a Class-D Digipro G3 900W amp module with auto-range PSU. Just like the larger VIO L210 system, VIO 208's wooden enclosure comes with a built-in rigging system made for simplicity and speed: a back central rigging strand allows the user to set the relative splay angles, directly in the dedicated transport cart DT-VIOL208, able to house 4 modules plus 1 flying bar. While lifting up the array, the rigging strand will automatically block the systems at the preset angles with no need for heavy lifting.

Australian Distributor: National Audio Systems
www.nationalaudio.com.au or 1800 441 440

06 DIGICO 4REA4

DiGiCo's 4REA4 is designed to meet the expanding performance requirements of large entertainment venues, houses of worship, theatres and shared stages at festivals and music venues. At the heart of the system

is the 4REA4 processing engine with DiGiCo connectivity options and 4REA4 control software, providing routing, processing and mix control that allows your performance area to expand across your installation. The 4REA4 processing engine rack has four dedicated mix areas, or zones, each with its own stereo master output, CGs, and allocated FX. With an available 128 input channel and 48 buss output processing strips, you can independently allocate processing to whichever area as required.

Managing the mixing and routing of each individual local performance area are a

new range of premium designed hardware control panels and external I/O units that work in conjunction with the 4REA4 processing engine and control software. New Ethernet connected controller options include the wall mounting single rotary ACONTROL1 with a TFT display for small area performance management, and the ACONTROL8 with eight 100m faders designed for more complex mix and function control.

Australian Distributor: Group Technologies
www.gtaust.com or (03) 9354 9133



07 DYNACORD IPX SERIES

Engineered and manufactured in Germany, the IPX series from Dynacord comprises three 4-channel models and one 8-channel model, offering a power density of 5 kW, 10 kW and 20 kW from a single amplifier with all channels driven. Dynacord's patented VLD (Variable Load Drive) technology as well as the newly developed parallel and

bridged parallel operation modes allows the available output power of 1,250 watts per channel to be used at either 4 or 8 Ohms, or via 70V or 100V lines in direct drive mode. The integrated OMNEO interface with a primary and secondary port allows the use of eight channels from a Dante audio network, while remote and supervision parameters run on OCA protocol



(AES70), open for third-party integration. Redundancy options include glitch-free and RSTP (Rapid Spanning Tree Protocol) to suit individual requirements and existing infrastructure.

Australian Distributor: Bosch Communications Systems
www.boschcommunications.com.au or (02) 9683 4752

08 EPSON ELPLX02

The ELPLX02 ultra short-throw lens is a new addition to the Epson's large venue projector lens line-up. The lens is compatible with 12klm to 15klm high brightness models (EB-L1505UNL, EB-L1505UHNL and EB-L1755UNL), displaying size from 100 inches up to a massive 1,000 inches at throw distance from 0.74m to 7.69m respectively.



Australian Distributor: Epson
www.epson.com.au or
 (02) 8899 3666

09 ICRON RAVEN 3104 AND 3124

The Icron Raven 3104 & 3124 are a four port USB extender system that includes an Ethernet pass-through for connecting to network enabled devices or to use existing infrastructure without losing LAN Connectivity. These USB extenders are backwards compatible to USB 3.1, 2.1 and 1.1. The 3-2-1 compatibility, along with the plug-

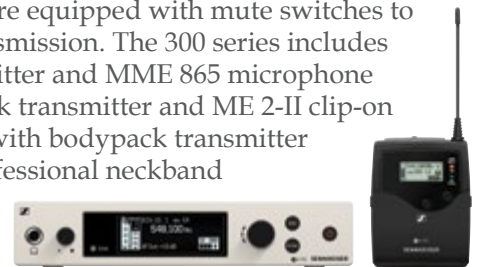
n-play simplicity, makes the Raven the perfect extension solution for applications such as remote storage, video matrix systems, security monitoring, and conferencing rooms.



Australian Distributor: Madison Technologies/
www.madisontech.com.au or 1800 00 77 80

11 SENNHEISER EVOLUTION WIRELESS 300 G4 SERIES

The new 300 G4 series is specifically geared to enterprises, hotels, conference centres, schools and universities. The systems are available in various frequency ranges in the UHF band; the switching bandwidth has been increased from 42 MHz to up to 88 MHz (up to 32 channels). The three-stage switchable output power (10/30/50 mW) increases the range of the transmitters, thus addressing more difficult RF conditions. All transmitters of the 300 series are equipped with mute switches to give the speaker control over transmission. The 300 series includes a Vocal Set with handheld transmitter and MME 865 microphone head, a Lavalier Set with bodypack transmitter and ME 2-II clip-on microphone, a new Headmic Set with bodypack transmitter and the SL HEADMIC 1 - the professional neckband microphone for lectures and presentations.



Australian Distributor: Sennheiser Australia
en-au.sennheiser.com or (02) 9910 6700

10 PANASONIC PT-RQ22K

The PT-RQ22K 'beyond 4K' laser projector is equipped with 4K+ (5120 x 3200) resolution and is aimed at live event staging, exhibitions, rental, and permanent installations. The PT-RQ22K has the same compact dimensions and 20,000 lumens brightness as the PT-RZ21K series, a WUXGA/SXGA+ projector. Heat-resistant phosphor wheels and solid-state laser modules serve vivid 4K+ images with industry leading brightness, contrast, and accuracy. The PT-RQ22K also offers BT.2020 emulation and supports premium HDR video content playback.



Australian Distributor: Panasonic Australia
www.panasonic.com/au or 132 600

12 SGM Q-10

The SGM Q-10 is a 60,000 lumen, 110°, IP65-rated RGBW LED luminaire. Fitted with 2,048 RGB SMD LEDs and 2,048 white SMD LEDs with eight individually controllable segments, the Q-10

can act as a strobe light, a flood light, a pixel light, and a blinder with non-fading continuous output. It features a wide native beam angle that can be modified by using different 4-way and 8-way barndoors.



NEW Australian Distributor: ULA Group
www.ulagroup.com or 1300 852 476



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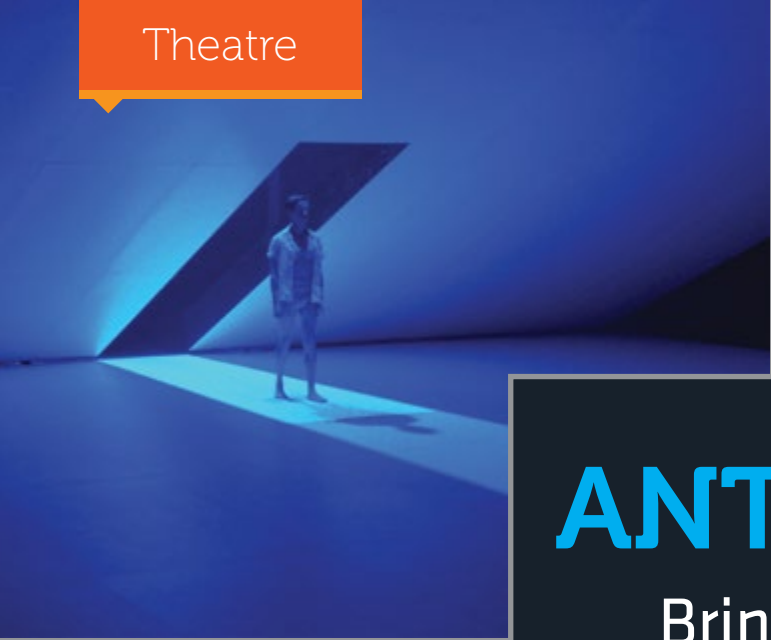
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channel routing

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Dante

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2404	800 W	600 W	600 W	600 W
4804	1500 W	1200 W	1200 W	1200 W



ANT Live

Bringing
Australian
Theatre to Your
Local Cinema



>> *Away*, Malthouse Theatre, Melbourne / *Diving for Pearls*, Griffin Theatre, Sydney

Australian National Theatre Live films Australian stage works and presents them on the silver screen in regional Australia, bringing our stories and culture to those outside the Big Smoke. Nine productions into their mission, they've hit their stride, creatively and technically.

Peter Hiscock >>



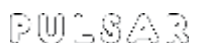
Formed by Logie winning actor Grant Dodwell, accomplished broadcast producer Peter Hiscock and writer and producer Raj Sidhu, ANT Live shot its first live show in July 2014. Partnering with cinema chains and distributors, as well as the MEAA, theatre companies, writers, actors, and venues, ANT Live's digital offering is similar to those of The Met in New York and Britain's National Theatre, but with a greater emphasis on keeping the end-result much more like a live experience than an overproduced 'filmed' version.

"We concentrate fully on recording the moment," said Executive Producer Peter Hiscock. "It gives us a better result – you get the impression that you're there at the live performance in the front row. Our approach and our choice of technologies are designed to record the event live, as-is, with only minimal post-production. We go to as much trouble as we can to respect the conventions of both film and theatre."

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Setting The Stage

In order to make the whole process work, it begins with ANT Live's relationship with the creators. "We have developed great relationships with the theatre companies," continued Peter. "They can see the advantages in filming and distributing their productions. We choose to film Australian works only. We negotiate with the companies, actors, agents, unions, and writers. When a show is green-lit, we employ a regular crew, pick a day separate to the normal season, and invite an audience to see the show for free, so release issues are dealt with."

Technically speaking, ANT Live have developed a streamlined tech process that is at once as simple and as complicated as it needs to be. "We bump-in four or five hours before curtain," Peter explained. "We do a quick camera check and focus with the lighting crew, record the show in one take, and leave. We have an option in our agreements to call the actors back to redo something that hasn't been captured successfully, but that's really only there for the actors in case they're not satisfied with their performance. We've only ever had to do it once, and that was for technical reasons. It's all carefully planned, and we're confident that we can capture everything successfully in one live performance."

Getting The Shot

One of the secrets to ANT Live's technical success is their capability to film a show without altering the lighting in any way. "Normally, when a broadcast crew film a theatre show for a promo, you spend half a day adjusting lighting levels to suit the cameras," related Con Filippidis, who worked on ANT Live's shoots of 'Away' as DoP, and as camera operator and VariCam consultant under DoP Paul Howard on 'Diving for Pearls'. "Theatre lighting levels are made for the human eye. We have chosen to use Panasonic VariCams that have dual native ISO. When we first got them, we started shooting at the 5000 base ISO, then dropped down to 4000 to give a cleaner edge. On the first test, we started checking each lighting state, and found the cameras could handle the whole range without any changes. At ISO 4000 I can open up my iris for the dark scenes and close down for the bright. I can cope with the full range at that ISO, and that's a big deal - it matches what the human eye can see. The VariCams also have beautiful skin tones; the palette is very natural and organic."

Con's other tip for live theatre filming success is in homogenising your rig. "Matching lenses and sensors is a big thing in a multi-camera situation," Con offered, "which is why we use Cabrio lenses on VariCams. Apart from two Panasonic DC-GH5s used as locked-off wide-shots, it's all VariCam 35s and LTs. Using the same lenses is so important - lenses have their own characteristics, aberrations and biases. If you take the time to match cameras and lenses, there's not much need to grade in post-production, which is a big cost and time imposition."



>> Con Filippidis



1.



1.



2.



2.

>> 1. 'Diving for Pearls', Griffin Theatre, Sydney / 2. 'Away', Malthouse Theatre, Melbourne

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Capturing The Word

With the majority of ANT Live's productions being unamplified spoken drama, there's been no existing audio built-in to the show to record (the exception was Windmill Theatre Co and

State Theatre Company South Australia's production of the musical 'Rumpelstiltskin', which had the luxury of a full multi-tracked band and radio mics on all performers.) Mario Pellegrino of G-Clef Productions has captured audio for four ANT Live's shows; "Unlike a broadcast drama production, it's all live, and once it's started you can't interrupt it," said Mario. "You can't use boom mics unless they're way up in the grid, which defeats the purpose, so you've got to fit and conceal radio microphones."



>> Mario Pellegrino

"Once you've wired up a performer, they're on their own," Mario continued. "If there's no hair or costume changes, it's OK. But inevitably, most productions have costume changes, some on stage. Before we shoot, Sue, my radio tech, and I will look at the play to figure out where to put the mics, and then she's backstage adjusting mics during changes. In Katherine Thomson's 'Diving for Pearls', every cast member had costume changes, and one character had nine, including hair changes, so that ruled out a hair mic. We also had one character pour a drum of water over his head. We've got a mic that handles moisture or a little water, so we used that and placed it to one side and asked the actor to try to guide most of the water away from it. It's about having a rapport with the actor."



>> 1. 'Diving for Pearls', Griffin Theatre, Sydney / 2. 'Away', Malthouse Theatre, Melbourne

Setting Standards

When it comes to radio mics, Mario is a dedicated Sennheiser fan. "I use Sennheiser for transmit and receive because I love the sound, and I think they're more advanced than some competitors," he observed. "I like the fact all of their connections are the

same, so if you change models, you can keep using your hardware. I'm currently using 3000 Series receivers, and, depending on what we're doing, the SK 5012 miniature bodypack transmitters. I use a mix of Sennheiser, Countryman and Sanken microphones. The output from the receivers goes straight into a Sound Devices multitrack recorder. I record it, send a mix-down to the control room,

or give the producers comms. In some cases I lock to all the cameras with timecode, and I always record as 48 KHz 24 bit wav files. I also mix in two Sanken booms as audience mics which I've rigged with wireless transmitters."

Working in theatres around Australia, from the intimate to the epic, from musical to drama, how do Mario, Con, Peter and the crew adapt to each differing shoot? "It's a challenge each time," reflected Mario. "Each show is different. Our techniques have become more technically advanced since we first started. We don't have a formula, but we do have a standard way of working. We're not filming a movie, so it's not shot, recorded, or edited like a movie, and in the end, the creates a better experience for the audience."





Mercedes me

Melbourne

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Mercedes me Melbourne is the seventh such concept store of its kind to be rolled out worldwide and offers guests the opportunity to engage with Mercedes-Benz like never before. Partnering with Melbourne coffee institution St. ALi, the hip venue is designed to go from café and showroom to night spot at the touch of an iPad, and it's got more than enough tech grunt to do it.



» Interactive tabletop

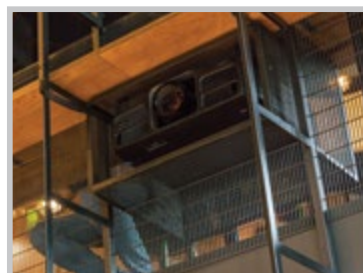
The 'Mercedes me' concept is to provide an engaging, creative environment to interact with the brand, without it being a sales-focussed car showroom. Over a large, two story space designed by Melbourne architects Jackson Clement Burrows, visitors can enjoy arguably Australia's best coffee, browse the history of Mercedes-Benz on the interactive digital touchpoints, attend 'Meet the Maker' sessions with local artisans, or simply pick up a book and enjoy 'The Library' space.

At night however, Mercedes me comes alive as a versatile event space and shines a light on key areas such as Art, Food, Fashion, Sport, Design and Innovation. There's a fully DMX controlled lighting system, truss and spare chain motors, and a mighty EAW Avalon nightclub PA, the first of its kind in Australia. There's patch points everywhere for analogue or Dante audio, and lighting control. The venue can play host to fashion shows, DJs, product launches and more, and is extremely external production friendly.

Impress Me

"Our brief was to be out of the ordinary. Unusual, and technical, but user friendly and seamless," said Bernie Tan-Hayes, Director at engineering consultancy Point of View. "We talked to Mercedes-Benz, and looked at the other Mercedes me stores worldwide. Their technical brief outlined elements that appear in the stores, like video walls, and performance criteria for control systems. Beyond that, they were totally open to our ideas."

One of the more arresting ideas made real by Point of View and integrator Programmed is the 'garage door'. A functioning roller door, it's made of eight panels of Gauzy Smartglass,



which turn opaque when a current is applied. Dataton's Watchout activates the glass via DMX and pixel maps content to the panels via an Epson laser projector, which means the panels can look like they're running eight independent videos, or be used as one big screen, and indeed anything in between. For a Mercedes-Benz product launch, it's perfect – run the video, big fanfare, the door goes clear and rolls up, and out comes the car.

» Bernie Tan-Hayes

» Epson projector

Roll The Video

Fifteen Samsung screens form a video wall on the ground floor, running content from BrightSign media players, controlled by Datapath FX4 display controllers, and distributed by AMX SVSI on an Allied Telesis network. "This was our first time using SVSI, but Programmed have a lot of experience with it, so we had no trouble," continued Bernie. "We think it's more future-proof and expandable than a traditional matrix, and the client agreed."

The Garage features an interactive display of Mercedes-Benz history, with eighteen model cars mounted in display cases. "Under each car there's a button," said Ry Wilton, site foreman and project manager for Programmed. "This activates a video to be played from a PC in the rack, over the network, to a screen and sound bar opposite. The content management is set-up so that the staff can change the models and videos themselves, which they do monthly."



1. Garage display and soundbar
2. Ground floor video wall
3. Ry Wilton

Stripes Make It Go Faster

Apart from displaying slick content, the screens throughout the space can be put to work as both sales and performance tools. "Some of the screens used for digital signage also have touch overlays," Ry continued. "They can run interactive content from Mercedes-Benz that allows you to design and customise your own car. You can design a GT3, and then you can order it – at the push of a button, the screen can mirror to the staff's iPad and they can get you a quote. Upstairs in The Loft, we've set up the screens to be used during the 'Meet the Maker' weekly sessions. For example, there was a session recently with the Latte Art world champion. The feed from the Panasonic camera mounted in the ceiling was displayed on all the screens so every audience member could see what he was doing."

What really makes the install at Mercedes me stand out is its capability to work in 'nightclub mode.' "It's got a lot of PA for a coffee shop!" joked Bernie Tan-Hayes. "The brief said it needed to operate as a nightclub, and they were deadly serious. Mercedes-Benz wanted a house system that could run parties and fashion shows."



In The Club

"I did an initial design at Bernie's request," said PAVT's Ben Clarke. "We decided on an EAW Avalon system because of its high output and small size, and because the look is in keeping with the architecture. The system is many distributed boxes as opposed to a smaller number of high powered units. Because we're not blasting everywhere, the smaller speakers are not turned up as loud, and by the time the sound hits the many reflective surfaces, the acoustic issues aren't as severe."



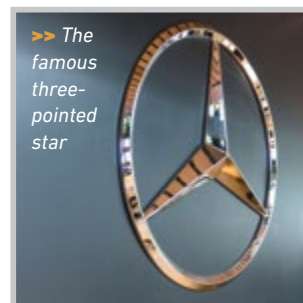
The main PA consists of four EAW Avalon CLUB four mid-high boxes supplemented by two EAW SB2001 subs built into the car platform. Dozens of small EAW DC80 fill boxes cover the rest of the space, accompanied by EAW SB150ZP subwoofers in the loft, and the whole rig is powered by six Powersoft Quattrocanali amplifiers. Processing for

the Avalon is handled by an EAW UX8800, with additional DSP for the rest of the system handled by a QSC Q-SYS 110F. Audio runs on a Dante network, with Atterro Tech patchpoints throughout the space. Sennheiser radio mics are supplied for presentations.

Get The Party Started

For lighting, there's a permanent truss in the roof and six half-ton chain motors ready to rig external production. In addition to the traditional architectural lighting, a variety of fixtures from Philips Selecon, including PL1s, are in the grid. There's also RCL downlights, an LED fixture with pan and tilt functions, enabling them to be focussed. When external lighting control patches into the DMX patch points, a DMX priority switcher detects the input and overrides the architectural system.

All systems are controlled via an AMX NX-2200 run from the staff's iPads. "Programmed made a custom app for the iPad, and it's beautifully done," complemented Bernie Tan-Hayes. "The programming of the whole control system, which takes all of these bespoke high-end systems and synchronises their operation via a button push on an iPad, was exceptionally well done. It was down to a good team and a great client. These kind of clients don't come along very often. They really went to great lengths to support the result."



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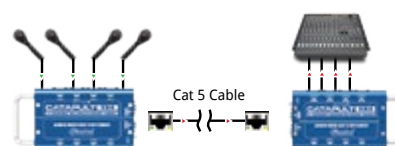
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Hearing Augmentation, Technology, and The Law

Hearing Augmentation Systems are a vital public service, and a legal requirement in many public spaces as defined in the Building Code of Australia. Their provision is mandatory in many public spaces that have installed PA systems, including educational institutions, places of business, auditoria, rooms used for legal proceedings, and some reception areas. Sydney's The P.A. People have been delivering hearing augmentation systems for over twenty years and talked with CX about requirements, tech, traps, and tricks...

“Three differing technologies can be used to provide hearing augmentation, and each have their own advantages and drawbacks that need to be taken into account in the design stage,” said Brett Steele, Manager - Installed Systems, at The P.A. People. “The most common is the Audio Frequency Induction Loop (AFIL), where wiring is laid into the floor or ceiling, that broadcasts a feed of the PA directly to hearing aids fitted with a ‘T’ switch. AFILs are commonly found in train stations, theatres, lecture halls, meeting rooms, and any other public space where it’s possible to lay the cable during new construction, or during a retrofit.”

“From the venue’s (and our) point of view, AFILs are ideal as they require little ongoing maintenance or staff attention,” continued Brett. “The patron experience is also excellent, as they are already carrying the device they need to access the broadcast and it can be heard from almost anywhere in the loop area in the venue’s floorplan. In fact, the Building Code of Australia specifies that any AFIL must cover 80% of the space that it is installed in. However, AFILs are not suited to every application – they aren’t suitable in some spaces built with large amounts of metal, don’t provide security from unauthorised access, and can be uneconomical to install in extremely large venues such as stadia.”

▪ Horses For Courses

Where an AFIL isn’t a practicality, a broadcast system is commonly installed. Two technologies currently dominate in this space, infra-red and FM radio, but recent developments have started to see new products using WiFi and DECT (the bandwidth used by cordless phones) come onto the market. Time will tell if these new products succeed in practical applications.

“We’ll install Infra-red in small spaces such as meeting rooms, but they require the user to wear a receiving device and be in line-of-sight of the transmitter,” Brett explained. “Unlike an AFIL, an infra-red system offers

excellent privacy in confidential applications, as it can’t bleed through a wall or floor into another space. In larger spaces, like a sports ground, a low-powered FM transmitter can broadcast cheaply and efficiently to a crowd, but the venue must provide and maintain a minimum number of receiving devices for the patrons, which can be costly. Both infra-red and FM solutions can be a burden to both the venue and patron; the patron must physically collect and return the receiving device and must be comfortable with wearing it. The venue must keep batteries charged and the receivers in service, as well as staff the collection points.”

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■ Tips for Young Players

Having custom engineered solutions for airports, train stations, ferry terminals, theatres, churches, civic buildings, and corporate offices, The P.A. People have had just

about every hearing augmentation curve-ball thrown at them. Here's a few tips and tricks from their extensive experience:

■ Heavy Metal: Barangaroo Ferry Wharf

Sydney's Barangaroo Ferry wharves are 48 metres long and 23 metres wide and can berth eight ferries at full capacity. The P.A. People installed a large-scale induction loop system that covers 25 meters by 18 meters of the structure, as well as individual one metre by one metre loops that cover Help and Information points.

Project Manager Ross Ford. "Installing an AFIL on steel has been considered to be detrimental to performance, but we have found that if you properly insulate the loop from the deck, it works extremely well. A lot of the hesitation about installing AFILs on steel comes from working with reinforced concrete slabs, where the steel reinforcement is a grid of bars which can cause changes in EQ performance of the system. We've found that because of the construction format of the pontoons at Barangaroo, it didn't cause a problem on that site."

"It's an elaborate induction loop," said The P.A. People



>> Barangaroo Ferry Wharf



>> Ross Ford

■ Serious Heritage: Drama Theatre, Sydney Opera House

The Drama Theatre is the smaller of the Opera House's two proscenium arch theatres, and seats up to 544 in a raked auditorium. "Working in an iconic venue like the Sydney Opera House is complicated because of the mechanics of the building," Ross Ford explained. "The Opera House necessarily has rules and regulations to ensure work that is carried out there stays within their guidelines. The Drama Theatre needed a phased array induction loop which had to be installed in the corners of the steps down the aisles. Every second row, we crossed the cable across the aisle, come down three rows, then ran the cable back across the aisle. We needed to do this underneath the existing carpeting, which needed to go back in place as if nothing had happened. That's the kind of issue you have to take into consideration when dealing with these kinds of buildings. You need to approach it with the right attitude to get a good result. The reports back are that the new loop works incredibly well."



>> Sydney Opera House

▪ **Retrofitting Regime: Sydney Airport Terminal One**



T1 at Sydney Airport services all inbound and outbound international flights. Like any modern airport, it's a complex space incorporating shopping, dining, and airline lounges along with the gates. As such, The P.A. People are currently working to install 120 induction loops through all of its public spaces.

"T1 is a good example of challenges you face when retrofitting an induction loop," observed Brett Steele. "There's a lot that can't be seen until you take up the existing floor coverings. This means you think on your feet and modify designs to suit the environment, and that's done on an almost daily basis. For example, you can't install an induction loop cable over an expansion joint, as it will either stretch or crush the cable as it expands and contracts. T1 is a large phased project that we're working on with the builders, electricians, and floor tilers. We're typically working on each area in halves, as we can't block off an entire public area at once. We'll do one side of a gate one day, then swap and do the other side the next, before we test and commission."



>> Brett Steele

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When you mix a song, does it ever occur to you to ask yourself where things appear in the pseudo-physical space between your speakers? If you can answer this question for every sound in your mix you're well on the way to creating a cool, three-dimensional soundstage.



LISTEN HERE WHERE AM I?

BY: ANDY STEWART

Conversely, if you don't ask this question repeatedly during a mix you may quickly find yourself swimming in reverb or wondering why things sounds flat and crowded.

Being able to 'see' where everything is in a mix through your mind's eye is a crucial skill to develop as an engineer. If you want that epic guitar to sound like it's up the back of a giant warehouse, that trumpet to sound like it's on the horizon in a desert landscape, or that main vocal to sound like it's big and wet, and yet close at the same time, you need to be able to picture it first in your imagination, then work towards making that illusion a 'reality' with your eyes shut and your ears and mind open.

Questions you then need to quickly ask yourself, once you can 'see' what you're after, relate directly to how that illusion of space can be created, like: "How far away is the sound from the listener?" and "Does it have a specific point of origin on the horizon or is it coming from everywhere?" Then there are others, like: "Is this sound proximate to walls, or is it outdoors where there aren't any?" or "Is the sound close and big, or wide and asymmetrical?"

Or you can be far more off-the-wall, questioning things like whether a sound is morphing from a guitar into a shimmering lake, or if it's moving and elusive so that you can never really pin it down. One of my favourite questions to ask is: "How far away is it, and will this distance affect my sound's tone and width?" Another is: "Does the sound travel towards me, away from me, across my perspective from side to side, or at an oblique angle from mid left to close right like a cross-court tennis shot?" Then there's the occasional question of whether the sound is merging into (or out of) another sound, and whether this transformation is simply about cross-fading the two or building an elaborately complex aural metamorphosis. At least one of those scenarios somewhere in a mix is a cool thing!

PUSH YOUR BOUNDARIES

There are endless questions like this you could ask yourself during a mixing session - the important thing is that you ask questions in the first place. Sometimes the simple act of querying a sound's context is enough to

clarify a problem you may be facing, enough to crack the mix wide open in your mind.

Importantly, you can't settle for near enough is good enough halfway through the process. You've got to keep working on a sound until the image you first conjured up in your mind comes to life aurally. Settling for something vaguely reminiscent of what you first imagined tends only to lead to mediocre, wishy-washy sounds that lack individuality and definition. You have to see the visual image through - quite literally! - until the effect you've created becomes sonically convincing.

But to be clear, I'm not advocating for every mix to be a landscape painting or a pretty picture. You can picture anything; whether it's physical, outrageously supernatural, or downright dull. The important thing to understand is that by engaging yourself in a discourse about a sound's place in the mix, you're giving yourself direction and purpose, more like a builder with a draughtsman's drawings than a magician with an upturned hat. Steering the way you approach volume, tone, level, effects, panning and texture with clear questions can, with practise and determination, turn your flabby, indecipherable mixes into aurally engaging masterpieces.

ASKING PERSONAL QUESTIONS

When I mix I constantly maintain an internal conversation about where things are sitting in three-dimensional space. I like to think I've developed an extensive repertoire of skills over the years that I use to create these illusions that I see in my head. But they're hard won skills. They haven't come easily nor are they acquired by osmosis... or maybe they are.

You see, creating illusions - which to some degree or other is simply a fancy term for 'playing tricks on a listener to convince them of their aural surroundings' - is all about triggering spatial memories that listeners already have in their head, whether they're conscious of them or not. Everyone - and I mean everyone, whether it be my four-year old son or an 80-year old grandmother - has an almost limitless menu of complex sounds that they're constantly referencing against current surroundings. For example, I'd almost guarantee that if you walked your husband or wife into your local

shopping mall blindfolded, they'd almost immediately be able to tell you where they were, or at least the type of place they were in.

This incredible spatial referencing capability that our ears and brain somehow manage to pull off with ease every conscious waking moment of our lives is what we're tapping into when we mix.

The problems of a poorly executed mix arise when we underestimate just how sophisticated our conscious mind is – even Joe Blow has incredible three-dimensional spatial awareness, though he knows nothing about music let alone mixing. That's why whacking a basic reverb on a sound without any thought or regard for tone, pre-delay or early reflections (or where they're coming from) can often sound so underwhelming in a mix. You've got to work much harder than that to trick a listener's mind in a convincing way.

That's why it's crucially important to imagine where a sound is in your mix first, and then work tenaciously towards it, remembering that every aspect of a sound has to work as one before an illusion is created.

And the key word here is 'work'. Slap-dash plug-in presets plonked mindlessly on a sound are usually just that: slap-dash.

One slightly off-the-wall piece of advice I often give people that are looking to develop their illusion-oriented, sound-based skill set is to get them to become more consciously aware of their aural surroundings when they're out of the studio and in the big wide world.

If you can get into the habit of analysing the sound of the world around you without driving your spouse nuts – it often makes you seem like you're off with the fairies – it can work wonders for you back in the studio.

Wherever and whenever possible, analyse what it is about the environments you find in yourself in – whether you're out hiking in a canyon, shopping in the supermarket or walking down a city street. Pay precise attention to the key sounds that convince you of your surroundings. When you're out hiking for example (well, someone must do it!) is the key that subtle delay off the hillside, perhaps? If so, what exactly is that sound like: how long is the delay component; what is its tonal signature; does it repeat or change? All this stuff becomes gold back in the studio when you put this information into practice. Suddenly you hear that space again, and recall the experience of being out in the fresh air getting fit.

The great news is that our brains are also great at filling in the gaps, so you don't have to know everything about a real-world sound reference, just some of its highlights. The listener does the rest; comparing your sound with one from their own extensive reference library, and bingo, the illusion is created! Mixes are about a lot of things but without doubt one of the key ingredients is understanding of how three-dimensional space works – in practical terms. Once you can pull that off convincingly between two, you're into a whole new realm of professionalism.



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



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history

1993: 2013

History, where we look what the Australian entertainment tech industry was plugging in, listening to and focusing on 25, 15 and 5 years ago this month as reported in CX Magazine.

➔ 1993, Magazine Connections #2 / 25 years ago



The second edition of Connections Magazine and the age of integrated business AV had truly arrived with the Toyota '93 Camry on the cover - its launch was the biggest corporate theatre event in Australia at the time. DJ, dance events and associated equipment was also a rising market plus our reader survey revealed a tangible base of musician readers (despite our good-humoured maligning), thus Connections needed to balance its coverage between emergent trends and traditional stories as it marched on through the '90s.

Interviews included Sonic Youth's crew, lighting designer Jamie Henson of 'Midsummer Nights Dream Under the Stars', and music producer (and former Sherbet songwriter) Garth Porter.

Technical advisories included DMX512 explained by LSC's Gary Pritchard; acoustics, hearing and SPL with Glenn Leembruggen and David Connor; and computer aided lightshow design with Janine Reid who detailed the Showcad (PC) and Aladdin (Amiga) systems. In a future-gaze moment, one Denis Irving suggested an ideal lighting control-design solution could be '... a pictorial touch screen, which directly controls colour intensity and direction.'

Else-wise, Bruce Waite and Dave Macken reviewed the Soundcraft Spirit Auto; we provided extensive pre-election analysis of what a GST might look like; and, on a somber note Julius Grafton interviewed Rick Doolan of Bandanna Entertainment for the last time.

➔ 2003, CX Magazine #1 / 15 years ago



Edition #1 of CX Magazine and at 92 pages it landed with a thud. With a mix of sport and motoring-related tech stories that month, CX really was 'the lifestyle magazine for technicians.'

Production reviews included the Rolling Stones 'Licks' Tour where we spoke with Robbie McGrath (sound) and Jim Straw (lighting). A show full of excess of course with 200 in the tour party. Not so for Cliff Richard whose accountants pulled too much out of the show leaving the audience looking at a static backdrop and back-up singers in darkness. The crew did what they could but this was poor form for an international touring act, we wrote. Unlike Taxiride (the band)

who showed how it was done with their touring production.

We were big on training and ran Certificate III courses in Live Sound and Lighting. Articles included why the industry has such trouble with training, the 'PA System Preflight Checklist', and how much your dimmer actually outputs. Did you know? Gear reviews included the Fostex D2424 24-track hard disk recorder, Soundcraft's MH4 console, and equipment 'shoot-outs'. That month we lined up ALL plastic, powered 12" + horn speakers, and ALL 250w moving yoke fixtures, and were unkind to them in a methodical way. The RCF-designed Mackie ART 300, and the

SGM Giotto (profile) and Martin Mac300 (wash) impressed our seasoned and begrudged panel.

People profiles were of vision guru Michael Hassett and Ivan J. Simon of IJS Concert Sound and Lighting.

➔ 2013, CX Magazine #79 / 5 years ago



Issue #79 of CX Magazine: In News we reported on Live Performance Australia's safety summit at the Entech Roadshow, and in Studios Andy Stewart wrote about the making of Gotye's 'Making Mirrors' album and how the hit 'Somebody I Used to Know' emerged from a laptop in The Mill's upstairs office. Our legends profile (or Knights of the Round Cable) was of Stephen Devine. Other interviews included Steve Knight from Cairellie and Matt Doherty, Production Director for the Big Day Out. Technical questions answered in detail that month were: What if my stage machinery keeps tripping RCDs? I'm a venue operator - should I install a PA or

use touring systems? How do I plan-out a good house-light system? How to plan data infrastructure and cater for cat5, cat6 or ethernet equipment? Most answers included equipment recommendations. Gearbox equipment reviews were ClearCom's HelixNet party line solution; the Vista M1 Control Surface from Jands; RTW's Touchmonitor TM3 loudness metering device for broadcast/post-production; the Sony MCS-8M production switcher and Rare Audio's self-powered 15" + horn. In Roadskills we wrote about live productions for John Farnham, Elvis Costello, Swedish House Mafia and the Big Day Out.

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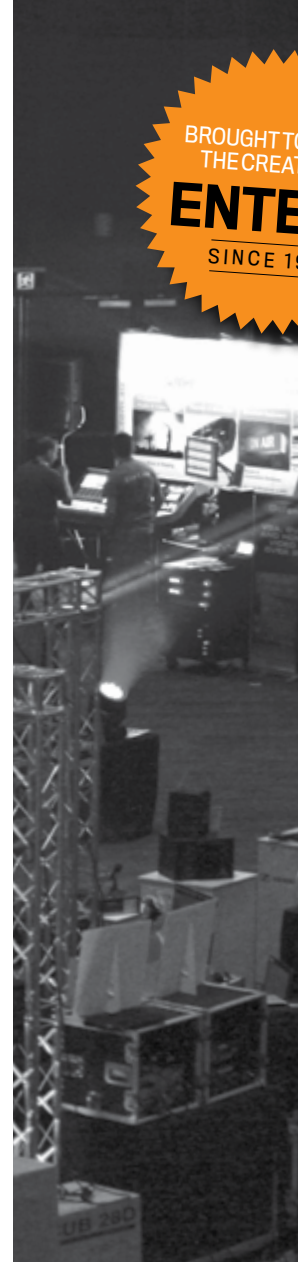


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EXHIBITORS



TECH Tips

In what I hope will become a regular feature, here is a collection of some random tech tips to make your life just a bit easier!

By Simon Byrne

TRAVELLING

We love our Pelican and roadcases but they are somewhat heavy, and attract interest from potential thieves when travelling by air. Consider instead using hard suitcases that you are OK with being damaged over the duration of a tour. They are usually lighter which means you have more weight allowance available for your stuff, and you stay under the radar of potential thieves.

Always seal your cases with cable ties. It deters casual thieves as they need a tool to open the case. You also immediately know if your cases have been opened. I've had my cases opened a lot but thankfully nothing stolen as yet.

Talking of luggage, did you know that both the major airlines will permit extra luggage at no extra cost for bonafide members of various music organisations such as ARIA, APRA/AMCOS, Music Council and state music industry associations?

Virgin Australia will allow up to 4 pieces totalling 64kg's and Qantas 3 pieces up to 23kg's each. It's worth joining and supporting your local music industry association for this alone.

Of course conditions apply and it needs to be booked beforehand.

» Continued on page/63



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IT'S M, NOT X, AND THERE'S A BIG DIFFERENCE

By Jason Allen

Uli Behringer's 'MUSIC Tribe' now manufactures audio products that are remarkable similar, and separates them into 'Behringer' or 'Midas' branded product. Before reviewing the Midas MR18, I was very familiar with the Behringer equivalent, the XR18, having used it and its capable automixing functions for some simple video production duties. When I pulled the MR18 out of the box, there it was, identical in almost every single way, except the branding on the very compact box. A lot of the market have initially reacted the same way I did— this is exactly the same product, but with a bigger price tag. We're all wrong.

MUSIC Tribe set very strict internal delineations between what is a 'Behringer' product and what is a 'Midas' product. These are mainly differing standards of signal to noise ratio, and common mode rejection. I once did a double-blind listening test between three mic preamps that had EXACTLY the same circuit design but were made with differing quality components. The difference was stark. Even blind, the preamp built with the most expensive parts easily came out on top. In a nutshell, a Midas branded MUSIC Tribe product has vastly superior CMR and SNR to a Behringer branded one, and it's obvious when comparing the MR18 to the XR18.

There are two Midas 'M' tablet mixers; the MR12 and the MR18.

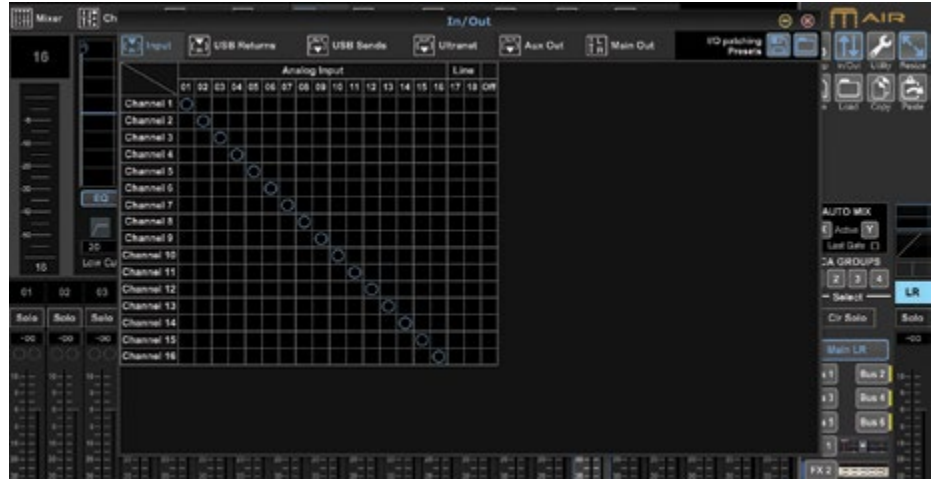
The MR18 has 16 Midas preamps and two TRS line ins, the MR12 four preamps and eight line ins. The MR18 has 10 outs analogue, the MR12 four. The other big difference is the USB interface – the MR18 boasts a bi-directional 18x18 interface, the MR12 2x2. The MR18 gives you six busses and LR with inserts, full dynamics processing and 6-band parametric or 31-band graphic EQ over each, and four FX processors with processing options for days. Considering their RRP's are but \$600 apart, they are very different beasts.

Apart from the CMR performance of the preamps, which Midas is justifiably known for, the MR18 has an improved power supply compared to its X cousin, producing less system noise overall. It also has a superior built-in WiFi router, leading to less dropouts experienced by users who ponied up the extra dough for the Midas name.

The M AIR app for iPad and Android (you can also use PC or Mac) is also superior to the X equivalent. Menus and functions are easier to get to, layout is more logical to my eye, and there are more display options for different work styles. While it seems wrong to use the word 'tactile' to describe a tablet interface, the M AIR app definitely 'feels' better than the



Brand: Midas
Model: MR18
Pricing: RRP \$1,349
 inc GST
Product Info:
www.musictri.be
Distributor:
www.nationalaudio.com.au/



X AIR, and certainly looks more professional, even though we shouldn't judge such things with our eyes. And yet, we do.

Other goodies include Ultramet connection for Behringer P-16 personal monitors, with a Midas version mooted to be announced soon. It's always nice to see MIDI in and out, so various propellerheads (me included) can joyously look up tables of CC values and get a weird assortment of controllers to make it do things.

With the modest MR12 retailing at \$749, I find it hard to believe that any professional couldn't put together the extra \$600 to pick up the MR18. It is more than capable of handling 90% of average, workaday gigs, can send 18 channels to

multitrack, costs almost nothing compared to the gear of yore, and fits in a backpack. And it DEFINITELY sounds better than its cheaper stable-mate.

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AN ACME DOUBLE

By Julius Grafton

ACME MP-400Z IP

This handy PAR has 7 x 30w Osram RGBW LED, and is IP 65 rated as “dust tight” and protected against water projected from a nozzle. The electronics are out the back in a die cast aluminum case, with the lens and zoom up front in a sealed compartment. The center section with the heatsink has mesh ventilation so water going through that doesn't matter.

It draws 250 watts of mains with every-thing running and produces a 6 – 40 degree beam. There is a virtual colour wheel including white optional with between 2700 and 10k colour temperature.

It comes with 4 channels of colour RGBW and also pre-programmed factory preset colours.



ACME Stage Par MP 400Z IP
\$1285 inc GST

The important stuff: weight is 8.5kg, the 16 bit dimming appeared smooth over a ten second fade. The fan runs at a quiet 42dB, thereafter the unit will retard output to maintain temperature.

ACME XA-500 FRAMING SPOT

This guy has a 440 watt led engine that draws 650 watts of power consumption. It produces a regular motorized linear zoom, with 14 - 35 degrees beam spread and 7500 degrees k colour temp.

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There is CMY colour mixing, and prisms: a 3 facet circular, (this puts three images in frame) and a 5 facet linear (in a line) prism. They both rotate.

A Motorised iris and 4 framing shutters, rotatable up to 180 degrees.

There is a battery backed up menu, and it weighs 32kg. From what I could see it presents a completely flat beam.



ACME XA-500F
\$6000 inc GST

Distributor:
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www.ulagroup.com



TELEVIC PLIXUS

CLEVER CONFERENCING

By Jason **Allen**

Belgium's Televic make, amongst other things, high-end conferencing systems, the kind of thing you find installed in 200 delegate seats at the UN, which is in fact one of Televic's customers. Their slick panels with built-in touchscreens, cameras, speakers, and microphones mount beautifully into custom made furniture, and are compatible with the range of motorised retractable solutions from Arthur Holm. Top shelf stuff,

and the kind of install that maybe comes up once a year, if your business is lucky enough to land it. But their tech has applications way beyond that one big job.

At the core of the Televic conferencing system is the Plixus network, and its Multimedia Engine. The engine can handle the processing and distribution of six channels of full HD video, 32 channels of audio interpretation, 32 channels of other audio, data,

internet, and control, all distributed over standard Ethernet. It's controlled and monitored via CoCon Management software, which can not only set-up all the devices on the network, but record with its T-Rex recording option, annotate, manage documents, run votes, send messages, ID participants, track metadata, archive, and even order snacks (seriously).





Brand: Televic
Model: Plixus
Pricing: depends on configuration
Product Info:
www.televic-conference.com
Distributor: www.pavt.com.au



On the participant end, there's a number of options for their interface. The hard-wired, flush mounted UniCOS 7" and 10" with touchscreen interface can view up to six video streams, consult the agenda and browse the topics, view documents, vote, and film the delegate and capture their audio, sending it onto the network.

If you want something temporary or portable, there's the Confidea range, which can be wired or wireless. There's a number of options for delegate stations, but all include a microphone and

speaker, with options for voting, interpretation, chair capabilities on so on. This is where the Plixus system gets interesting outside of that one flagship install – it makes it a useful investment for rental houses.

Adding to the flexibility of the Plixus system is the Video-IN and Video-OUT boxes, which allow you to BYO video and audio device, connected via HDMI. They are effectively a UniCOS endpoint without the hardware interface. Televic also make the T-Cam – a package that includes

two PTZ cameras, a Blackmagic capture card and video switcher, and T-Cam control software. Add these to the network, and you can run up to four PTZ cameras that automatically track talking heads.

The Plixus hardware exudes quality – the UniCOS interfaces in particular are a joy to touch and use. With all this seeming high-end luxury, you'd expect Televic to be out of the range of budget practicality for any but the biggest of institutional installs, but the costs are actually on-par with other well-known manufacturers. This is particularly compelling for any AV or production company that would like to be able to put together a good quality conferencing system for an event. In fact, Plixus with the Confidea wireless units and some powered speakers is a great solution for panel discussions, small AGMs, and many other types of meeting. Factor in the ease of deploying everything via Cat5 and wireless, the recording capability, and no need to run foldback, and Plixus is well worth considering for your next inventory purchase.

THEATRIXX TECHNOLOGIES XVISION VIDEO CONVERTER FOR GROWN-UPS

By Jason **Allen**

According to market research, a full 60% of the market for new video converters is to replace units that have broken with use. This is not going to come as a surprise to anyone working with video who has wrangled cheap, plastic converters with nasty wall-wart power supplies

onto the back of temporary displays for digital signage. Theatrixx Technologies, a manufacturer and distributor out of Canada, have had enough of this, and have decided to make a range of converters designed for a serious life in professional AV.





Much like their Canadian audio cousins Radial, Theatrixx make things to last. The xVision range of nine converters are in serious steel housings with all connectors recessed. If you threw the average video converter at someone, you'd end up in anger management. If you threw an xVision, you'd end up doing 8 to 10 for manslaughter. They have an absolutely brilliant rubber pad and magnet system on the bottom – they can affix to any ferrous surface, or to each other. They can also be mounted in pretty much any other way, thanks to clever slots, grooves, built-in M10, and an included strap.

Unlike anything else on the market, they feature a locking PowerCON and a separate power out so you can run the display device. Internally, the signal connectors are all on separate daughter boards, so if they take a hit, or over-enthusiastic pull, the unit will keep on running. Units with HDMI have locking HDMI connectors, which should be compulsory in pro AV.

Converters available include: HDBaseT to or from HDMI, HDMI to or from SDI, Fibre to or from SDI, an SDI audio de-embedder, SDI distribution 1 in 4 out, and a dual channel SDI repeater. Every unit does the one thing and does it well, with simple-to-follow alphabetic and colour coding, and LED indicators for signal type, power, and resolution as appropriate. There's no software, dipswitches or any kind of mucking about – plug them in, and they do what they do.

The xVision range are unique in the video converter market, and are so rugged and, may I add, beautiful to look at, that they will far outlast any other converter, and make you look more professional while they do it. While slightly pricier than some converters, they'll end up cheaper in the long run.

Brand: Theatrixx
 Model: xVision
 Pricing: \$803 - \$1,145
 ex GST trade price
 Product Info:
www.theatrixx.com
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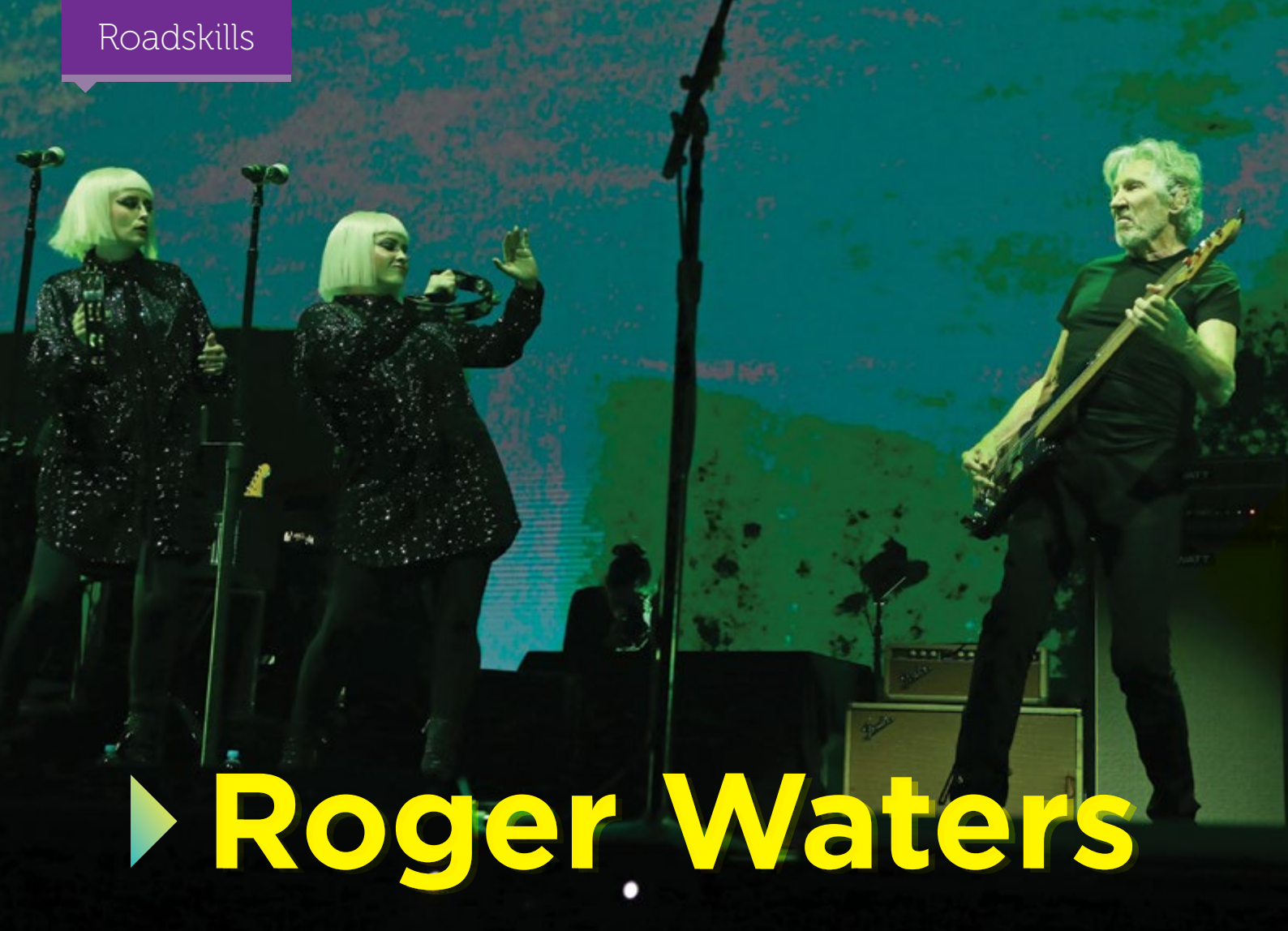
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▶ Roger Waters

By **Cat Strom**

Photos by **Troy Constable and Kate Izor**

Forever pushing the boundaries of stage production, Roger Waters toured his *Us + Them* Tour featuring a massive video wall, multi-dimensional laser effects, a screen dividing the arena floor and of course, a flying pig.

"Pink Floyd make my job easy because I just pinch from all their iconic imagery such as Battersea Power Station and the cover of *Dark Side of the Moon*," laughed Sean Evans, Creative Director/Set Designer for the tour.

“When Roger and I were discussing this show, we knew we wanted huge video surfaces for the vast amount of footage we have. Also, I wanted to make an arena size room feel small, more like a club gig. As we had to build it all so fast, we didn't necessarily know what we were going to do with everything – we got a bunch of toys in a room that we knew we could make something out of and began tinkering.”

And boy do they have some 'toys'. The show is all about screens from the expansive screen at the back of the stage to the two modular tracking screens 54 metres long and nearly 11 metres high. In fact the show features over twenty projection surfaces including four inflatable smoke stacks, rolling screens, and the drone-propelled flying pig. Sean supplied all of the video content and animation whilst video director was Richard Turner.

TAIT custom built the main stage, the overhead rigging system which stretches the length of the arena and is fastened with numerous winches, laser units and 16 TAIT Rollios which put a mechanical spin on the traditional Roll Drop allowing each Rollio to open and close from any area in space while projecting video content. The Rollios extend out, above the audience, dividing the arena into two sections. Controlled by TAIT Navigator, they are engineered to open and close from any area in space while projecting video content. Each Rollio is 5.7m wide and can drop open 10.9m in length creating a larger-than-life projection space across the arena. The biggest headache on tour has been adjusting the video to fit the screens in the variety of venues all of which require unique configurations. Infra-red tracking



is deployed to aid calibration of the projectors in under an hour, as well as calibrate all 48 cameras in under a minute.

"The screens have infra-red trackers on them so the projectors can lock onto them and move accordingly," added Sean. "Infra-red also allows tracking of the inflatable smoke stacks as they appear, as well as accurately tracking the flying pig."

Roger Waters himself was tracked using infra-red directly integrated into his in-ear monitors. In charge of the video technology was VYV Corporation who worked with IEM manufacturer JH Audio to provide highly reliable yet minimally

intrusive motion tracking.

The PSN protocol (PosiStageNet developed by VYV and MA Lighting) is a core component that interconnects show departments, video, lighting, and automation. Using the PSN protocol, VYV'S Albion system maintained bi-directional communication with StageTech Navigator to control the rolling screens, allowing for video layers to control screen positions and adjusting projection to screen positions. Albion also transmitted PSN to the grandMA2 console to provide the coordinates needed to keep the flying pig illuminated.

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The big finale is the 3D replication of the Dark Side of the Moon cover with lasers which appears above the crowd. Sean insists it's quite simple and is just geometry with mirrors and blockers. The overhead rigging system is fitted with winches that house several laser units which communicate with additional laser units on the ground.

"As long as you can place the lasers where they need to be and focus them properly, it's relatively simple for a laser design," he said. "It's a great moment and conceptually a very poignant moment."

► LIGHTING

Lighting designer, director and programmer is Pryderi Baskerville who goes to great lengths to ensure his lighting fits the narrative of the show, never producing lighting for lighting's sake. His lighting is fairly simple and never tries to compete with the massive visuals from both the video and projection content.

"The lighting system fits within the framework of the total show so it's there to illuminate and enhance," said Pryderi. "For the first half of the show, the screen is the visual dominant message and the lights are there to enhance that as well as follow Roger and pick out solos. If you're expecting a big flash and trash lighting show,

that's not what this show is about. But hopefully it's homogenous and sits within the entire narrative of the show."

The lighting rig has a split FOH truss, two overhead trusses and two side tormentors and the workhorse fixture are the fifty-seven Robe BMFL Spots, currently Pryderi's favourite spot fixture. Twelve are on the front truss, fourteen on the mid truss, fifteen on the upstage truss and the two tormentors house six a piece.

On the floor are six Vari-Lite VL3500 Wash FX and normally on the side bunkers there are eight Robe BMFL Blades, although in Australia it was Martin MAC Viper Performances. There's a downstage trough for thirteen GLP X4 Bar20 which give the band a bit of a glow and also illuminate the children who come on for Brick Wall. They are also used for 'accents'.



► Pryderi Baskerville



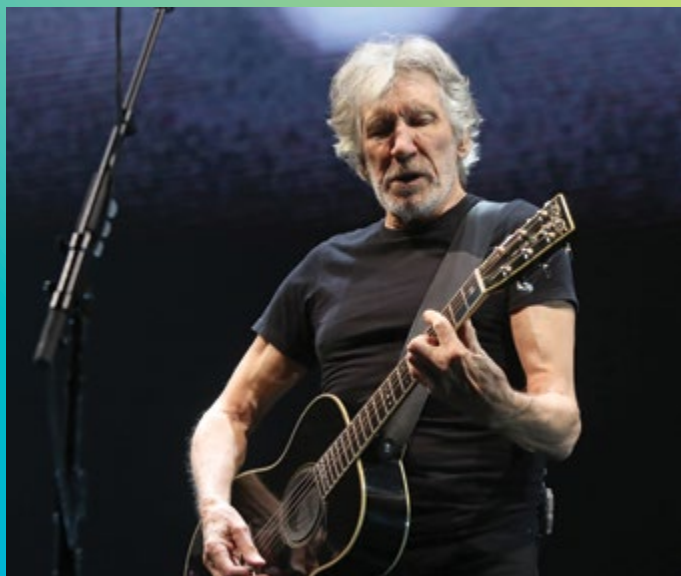
The two side trusses that extend into the audience not only hold the projectors for the split screen but also a large contingent of TMB Solaris Flares. Not a single house light needs to be switched on thus giving Pryderi control of the entire space.

“It means we don’t have to rely on a venue having dimmable house lights,” explained Pryderi. “The first cue of the show is a thirty second fade that draws you to the screen. I occasionally use the Solaris Flares for effects but primarily I’m using them as a wash source and they’re powerful, bright and have consistent colours. There are also eleven Solaris Flares acting as a large backlight wash on stage.”

Whilst two BMFL’s on the front truss are dedicated to following Roger with the infra-red technology, any of the lights in the rig can be assigned to that tracker. For example, 2 x BMFL are assigned as Tracking Backlights in ‘One Of These Days’; at the end of ‘Welcome To the Machine’, these are supplemented with Tracking Side Lights. With the two split projection screens flying in for the second half, there is no way a traditional follow spot would work.

“We also didn’t want that massive 300ft beam of light coming from the back,” said Pryderi. “Out at FOH we have four BMFL Spots which follow the tracker in the pig when it flies around the arena. I have all control apart from movement with the positional data coming

Roger Waters himself was tracked using infra-red directly integrated into his in-ear monitors.



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from the Albion. It's the 21st century, why would you put people in the truss?"

A lone Vari-lite VL6000 is rigged over the stage in a Tait winch with Lightlocks and it drops in for the helicopter effect at the beginning of Happiest Days.

At FOH are two MA Lighting grandMA2, one for backup, with four NPU's backstage and Pryderi travels with his own rack and processing.

▶ FOH AUDIO

Adelaide-based Jon Lemon took over FOH audio duties five shows into the tour when the legendary Trip Khalaf decided it was time to retire.

"I had just arrived home from London on a promo run with Lana Del Ray when Trip called me and after a brief 48 hour visit home, I was in Denver with Roger," he remarked. "I'd worked with many of the production crew before, as well as Roger on the Pink Floyd reunion for Live 8, so it was a pretty easy transition."

Jon inherited Trip's FOH set up which was all analogue including a couple of Midas XL4's and a Yamaha PM5d for the surround sound.

"Everything else in the show is so high tech, it was nuts!" he said. "It's such a theatrical show, I needed to have multiple scenes going on which you just can't do in an analogue world, as good as it sounds. I lost several pounds running around like a madman trying to mix the show!"

Ten weeks into the tour there was a window of opportunity for Jon and his crew to go to Clair Global in Lititz and bring everything up to date. The PA was changed from a Clair i-5D system to the Clair Cohesion C0-12 system and control went digital with a DiGiCo SD5 plus Soundgrids.

"It was a massive change for me to do especially as Roger is as detail-orientated as I am pedantic," said Jon. "I also had to do it without a band using only recordings, and then we only had one day of rehearsals before the next leg of the tour. It was a lot of pressure on me but fun at the same time."

There are sixteen CO-12 deep in the main hang, twelve deep on the side hang, three flown subs facing forward (no cardioid) behind the main hang plus twelve subs on the ground. The indoor arena configuration is six CO-8 front fill. Delivering an immersive experience is a surround sound system of forty-eight Clair i-3 in custom built pods tailored to hang to suit the venue, but usually there are two pods per side right, rear and left. Shure



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The big finale is the 3D replication of the Dark Side of the Moon



PSM1000 transmitted to UR Series receivers for the surrounds.

After the Australian tour there'll be more change with the Clair i3 surround sound system being replaced by the new Clair CO-10.

"It will be one of the first Cohesion CO-10 tours in the world," commented Jon's system tech and crew chief Dean Mizzi who was previously with JPJ Audio. "It'll be all wirelessly fed from FOH by Shure wireless with full data and signal control from FOH. It's all powered from the catwalk so there'll be no cables from the sky."

With the DiGiCo, Jon can snapshot scenes for various songs but he still wanted to keep an analogue feel to the mix hence a fair amount of analogue gear for the main left and right surround, as well as all of Roger's different vocal mics.

"I use Neve Shelford pre's on Roger's three vocal mics along with the plugin stuff I use for warmth and analogue emulation," added Jon. "It looks quite over the top but it's not really considering I have 110 inputs with ten people onstage."

As to running the show, Jon says thank God for timecode! As the video content in the show is so heavy, he runs timecode from 8pm because there's a lot of atmospheric material on the main screen as well as various sounds through the surround sound. At 8.20pm it's show time.

"Again, one of the reasons I wanted it all running digitally was to be able to easily create multiple snapshots in songs," said Jon. "However to get the most out of the show, it's really manual so it's nonstop concentration for me. It

becomes a rhythmic thing, you just flow through it snapshot to snapshot. Roger listens to the show nearly every night and Sean also has input as he has a great ear."

Jon changed a few microphones saying there's nothing too flash being used; a few Shure ribbon mics on guitars, Telefunkens on guitars in fact there were heaps of guitar mics onstage. The drumkit was big with thirty inputs alone; Heil bass drum mics, Beyer snare drum mics, Neumann overheads, Audix and Sennheiser tom mics.

JPJ Audio were the local provider.





▶ MONITORS

In a cubby hole at side of stage sits monitor engineer Matt Napier, working from his DiGiCo SD7 console. He says his biggest challenge is trying to be faithful to the music whilst there are ten musicians on stage and just the one monitor engineer!

"It's good now but rehearsals were quite stressful as you have ten people all trying to find their feet and it's quite a large input count to have to deal with," added Matt. "Currently I have 130 inputs (many of which are stereo), 21 mono auxes, 16 stereo auxes, three mono groups, seven stereo groups, 32 matrix inputs, 14 matrix outputs, and 24 control groups."

Matt states that the DiGiCo SD7 is the only console that can cope with a gig of this size, in fact he only had five spare processing channels left on the console.

"I run the console at 48 as I don't think you can hear the difference between 48 and 96 when you're using IEMs because the weak link is the FM transmission," he explained. "FM only transmits from 50 hertz to 15K anyway so I don't think you have to worry about being at 96K for a monitor console."


Roger has an analogue vocal chain so his mic comes straight into an XL42 first and that has a distressor inserted over it - adds a little compression before it hits the A convertor on the console.

"I have a Lexicon 480 to give Roger's vocal more warmth," added Matt. "The reverbs on the console are good but the Lexicon 480 is fantastic, especially if you're using IEMs. I also have a couple of AI Smart C2 compressors which are strapped over Roger's mix; Roger is on the main master buss of the console and


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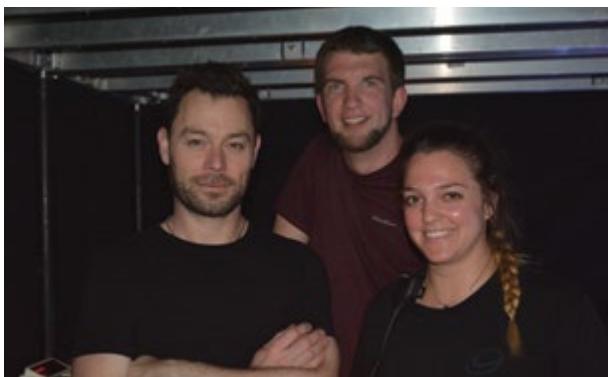
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▶ Jon Lemon and Sean Evans



▶ Matt Napier, Richard Burke and Nicole Wakefield



▶ Dean Mizzi, Richard Burke, Jeff Stearns, Alex McCormack

I pretty much mix him like a FOH mix. The C2's catch things in the mix that maybe I don't always catch and with a live dynamic band, if they get carried away they help keep it in the dynamic range that works with the IEMs."

Everyone was using JH Roxanne IEMs with Sennheiser 2000 transmission systems plus there are a few discreet wedges onstage to add a bit of weight and extra stage volume for Another Brick In The Wall when the children's choir take to the stage.

Most of the musicians are multi-instrumentalists, and also sing, so there is a lot of things going on for Matt; at the last count, he had about 70 different guitars in play. In addition to the musicians, there are a number of techs under the stage, and that is where the majority of the IEM mixes get eaten up.

RF is a massive challenge for Matt especially as the screen on stage is huge and production do not want to see the antennas.

"Antennas work on line of sight so we had to get a little bit funky as to where we placed the antennas," commented Matt.

Matt remarked that the SD Series sounds fantastic and he likes the flexibility of the SD Racks and SD-Mini Racks, the redundancy, and user flexibility.

"I'm running lots of snapshots on the SD7 - over 75 - so I take timecode from playback and it's all fired via timecode," he said. "Most of that is smaller automation cues either from the musicians or its little rides, and by taking care of the constants I can then worry about the variables."

Although the console is digital, the music strives for an analogue sound. Fortunately the SD7 has a warmth function that emulates the old Midas preamps from the XL4 and that softens the sound of the console.

Matt further commented that he has a great audio stage crew with Richard Burke and Nicole Wakefield from Clair.



FOO FIGHTERS

By **Cat Strom** / Photos by **David Youdell**

The Foo Fighters rocked stadiums across Australia and New Zealand in support of their ninth studio album *Concrete and Gold* with their long time lighting designer Dan Hadley once again at the helm of an MA2.

The tour started before the album release as a festival run in Europe, including headlining Glastonbury, although it was not the 'full show' rather a design that was easy and flexible enough to get in and out of the festivals quickly to maintain their schedule.

"We started pretty light and took what for us is a small package - only a few trucks," explained Dan. "However, as I didn't have much gear I was pretty specific as to what I wanted."

That early rig was based on Ayrton MagicPanel FX, TMB Solaris Flare LR Q+ and GLP X4 Bar20 which have carried through to Dan's full tour design.

"I was very happy when they released the Ayrton MagicPanel FX as I found the zoom makes it a substantially more flexible fixture," commented Dan. "The Solaris Flare LR Q+ are able to be as incredible in their performance as the Solaris Flares but in their batten format they have an added architectural element."

For the full tour Dan showed the band three different, distinct designs and they leapt on the idea of having a video wall that could be flown down as a low roof over the band. The flying diamond-shaped screen is Winvision Air 9 video tiles with the back wall comprised of ROE Hybrid 18.

"Andy Babin of Control Freak Systems programmed the video," added Dan. "During the festival run there was some content mapped to video but midway through that tour we switched from MBox to D3 and

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CHAPTERS ADDED REGULARLY

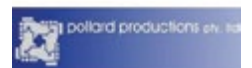
Opening with 21 chapters peer reviewed, AESRG is continually expanding and updating. New chapters to include:

- Amusement devices
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Notch in a very tight turn around – actually one overnighter in Latvia!”

Twenty-four GLP X4 Bar20 edge the diamond screen with six GLP X4 located on each side of the stage, supplying background for cross stage camera shots thus avoiding a black void or a roadie tuning a guitar. There are also GLP X4 on the downstage truss for general stage wash and picking up some other spots when the PRG GroundControl is being deployed elsewhere.

The MagicPanel FX are rigged on twelve separate ladders, with each ladder holding three MagicPanel FX and one PRG Icon Edge. The ladders were custom built so that the rungs on which the fixtures are hung are



“I keep my show very manual because they keep their show pretty fluid.”



free from the ladders that they pivot. That way the lights always maintain their vertical position no matter what position the ladder is in. It allowed them to cut down on the infinite number of focuses that tilting a truss can give you and make a headache of your day.

“That’s something I have screwed myself with a couple of times before,” admitted Dan. “The band love having stuff flying around but it can lead to an extremely long process of focusing.”

The MagicPanel FX are run in extended mode with Dan programming all the effects, only a couple of times using the prebuilt macros, with no video mapping.

Dan was exclusively using PRG’s GroundControl system

for followspots: five Best Boys on the front truss, one in the grid for backlighting the ever moving Dave Grohl and a couple of long throws located on the delay towers.

“Being able to control long throw spots and to have the ability to control their intensity to such a degree, without having to stop my brain to communicate with someone else, is irreplaceable,” he said. “The Best Boy spots allow me to keep my general intensity down as I don’t have to wash a large area. I’ve never had a spot for each guy from FOH because I don’t like that angle - it casts odd shadows and is cumbersome from an operational point of view. Having a consistent angle keeps the band from being surprised and Dave’s not a fan of FOH spots as he loves to see the crowd. I’m not a fan of calling spots

and I’m not very good at it so the PRG GroundControl helps out a lot!” Not wanting to add another fixture to the already eclectic mix, and to keep colour temperatures and palettes consistent, Dan added Best Boys as his main profile fixture to the rig. Eight Bad Boys per side are located on the wings above the IMAG screens whilst at the bottom are six Vari-lite VL6000.

“It’s important for Dave to be able to see the crowd so as well as the Bad Boys we have the Solaris Flare LR Q+ and Chauvet Strike1 and they give me a bunch of different options,” said Dan. “It’s a long show and if I just populate the front truss with 8-lites that would get downright annoying. Being bashed in the face over and over by a bunch of orange LEGO is no fun so we invested in quite a few



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options and it has turned out really well."

Dan was super impressed with the Chauvet Strike1 fixtures saying that you wouldn't know they weren't incandescent if he didn't strobe them.

"They colour shift to a redder tone at lower intensities and it's simply a different look to a two, four or eight lite," he said. "They have nice big lenses and no dimmers!"

The stage floor packs a punch with twelve more VL6000 and sixteen GLP JDC-1 lighting it up to kingdom come.

New to a Foo Fighters show was the addition of lasers with the stadium shows deploying six systems; four across the back of the stage and another two on the downstage truss pointing toward the band and backline.

"Who doesn't love a damn laser show?" remarked Dan. "It's one of those things which is always bandied about, but having run lots of laser shows early in my career I had already exhausted my fascination and never really had a hot desire to put them into a show. Two things changed that - when I heard the new

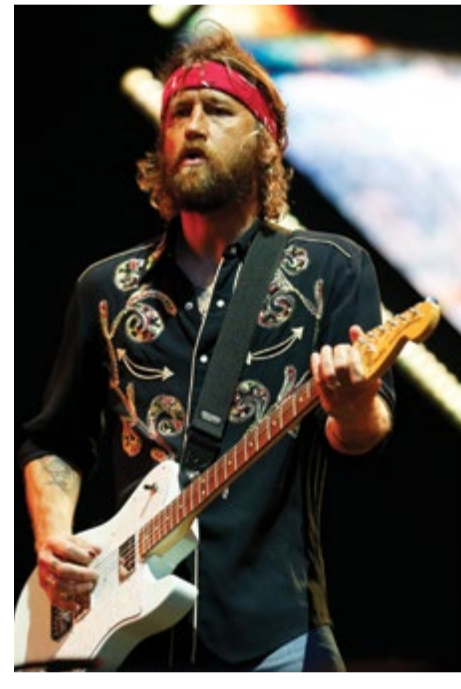


| Dan Hadley

{ "Who doesn't love a damn laser show?"

album I heard a lot of 70's big rock influences and saw some pretty great openings for looks to match. The other thing was in 2016 I had a chance to work on a couple of gigs with the legend Howard Ungerleider's company Production Design International. We'd known each other for a while but had yet to work together, and after seeing their ability and desire to go beyond the expected laser show it was a very easy call to make."

Dan said that he went a little off-book with the downstage truss mounted lasers. Scott Wilson, the on-tour laser genius, mapped the backline and drum riser and used those zones to create an atypical layer of effects. Sometimes it's just outlining the edges of the amps to give them a coloured glow or force a little perspective shift, sometimes they use audio input to display a live graph across the amp line, and sometimes use straight ahead graphics.





"I was initially worried that the band wouldn't be altogether excited to be in the firing line, but it turned out to be of such little concern that we pushed on and now have a couple moments where we use the guys as the projection surface for a guitar solo or a quick drum fill," Dan said.

Control was an MA Lighting MA2 with Dan upgrading to the 3.3 software in between the summer tour and the album tour. As the band have just released dates through to November 2018, Dan is considering switching to the MA3 despite the fact the show is running just fine on the MA2.

"I keep my show very manual because they keep their show pretty fluid," Dan said. "We get a set list about 5 - 10 minutes before they go onstage and it's maybe 70% the same every show. Often, by the time they're two thirds of the way through the show it doesn't matter what's on the set list anyway. Or they may be

two thirds through a song and they'll break off into a different song - there are no Pro Tools on that stage!! I have to keep things very manual to keep up with them."


Dan has approximately 45 songs programmed, with some able to work for different songs, so usually if they do one particular song he can guess they won't do another if it is similar.

"I will double up on those songs that have similar tempos, structures and feels ... but sometimes I get caught out and they play both songs so I have to completely make up something on the fly," he admitted. "I wouldn't be able to do that if I only had sequences programmed cue to cue. It makes it a lot more fun for me every night and leaves the door open for happy accidents to come in and discover new things about the rig."

After a conversation with his pal Breck Haggerty (Tool's video designer/director and chief at Diagonal Research) about the way

they used to fire strobes from a keyboard foot pedal (pre-Atomics), Breck built Dan a footswitch for the MA2! It's assigned to a button, which changes on a per song basis depending on Dan's need. Typically, it's used to set effects timing but also when Dan is programming he uses it as a 'NEXT' so that he can step through a focus group without taking his fingers off the encoders and his eyes off the rig.

"A couple years later an evolved version arrived in the form of a volume pedal," added Dan. "I have it assigned to the first fader on the page, which is typically a 'Blueout' cue that I can go to in order to free my hands and still mask my fumbling around when I'm trying to quickly switch to whatever set list surprise the band has thrown in. The interface has a third input that's yet to be implemented, I'm thinking maybe a Theremin-based colour picker is the way forward."



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PAUL WELLER

BY CAT STROM

LAST YEAR MARKED THE 40TH ANNIVERSARY OF PAUL WELLER'S FIRST ALBUM, 'IN THE CITY', WHICH HE RELEASED WITH THE JAM. FOR MOST ARTISTS SUCH A LANDMARK WOULD BE GREETED WITH EXTENSIVE RETROSPECTIVE CELEBRATIONS: LAVISH REISSUES AND ALL THAT JAZZ.

• Photo: Ken Leanfore

Not Paul Weller, who is almost clinically averse to nostalgia and about to release his 13th studio album in May.

FOH engineer Ange Jones has worked alongside Paul for twenty-seven years and whilst playing the Sydney Opera House was an ambition for Paul, it was anything but for Ange.

"I last mixed there over thirty years ago with a band called Sky who were a very controlled, instrumental act," he explained. "I remember the hall as being very resonant and not for a loud band as it was made for orchestras. I wasn't apprehensive this time round, I was scared."

Ange prepared for the gig with extra rehearsals with Paul, saying they had to get down to a level that can be controlled in the SOH as normally levels onstage can get up above 103 db.

"That in the SOH would have been catastrophic," he added. "I normally specify an L-Acoustic K1 / K2 PA but we used the inhouse d&b system which was great. It's a really well set up system. The SOH crew were brilliant, teaming up well with the JPJ Audio crew who supplied control, and it was faultless."

Seats were sold behind the stage with Ange impressed by the system the SOH had in place for this: a couple of

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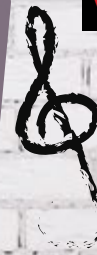
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d&B subs onstage with a couple of line array speakers on top, time-aligned with everything else.

Originally two shows were on sale but they sold so well a third night was added. Unfortunately an important orchestral rehearsal was scheduled in the afternoon of the third show, so after the second night the stage had to be cleared. The third show was scheduled to start an hour later to accommodate the changeover, with the crew not accessing the stage until 5pm, but Ange reports the amazing SOH crew had it all up and working within 90 minutes.

"The SOH crew are an amazing, almost military precision team," laughed Ange.

FOH Ange ran a DiGiCo SD10 console rather than his usual SD7, due to budget constraints, saying he's rather old school in his preference for lots of faders.

"The SD10 does the job in a small package," he remarked.

"I use a lot of onboard gear for drums and keyboards, general drum reverb and some delays, but I also have a fair amount of old school outboard gear."

Outboard gear included a TC 2290 for pan delays where Ange does a delay that sweeps backwards and forwards

"I WASN'T
APPREHENSIVE THIS
TIME ROUND, I WAS
SCARED."



● Photo: Ken Leanfore



on a few songs. Vocal reverb is a PCM90, there's a RE-20 tap delay, and a SansAmp for a distorted vocal sound which is currently on the last album. He also uses an Avalon 737 compressor on Paul's vocal to add warmth and richness.

"I also have an SPX2000, again for pans to add a bit of dynamic to songs as sometimes it can be a bit one dimensional if it's straight down the middle all the time," said Ange. "Things like string pads I tend to pan a little bit so they move around the room. I like it, it's for me and I'm selfish that way!"

Having been with Paul for so long, Ange has evolved with him as his bands have changed over the years. He describes the relationship as comfortable especially as he knows all of the songs, he knows all the delays and vocal treatments required for songs that go back over twenty years that Paul may suddenly throw into the set.

"He is now playing his back catalogue," noted Ange. "He used to be a stickler for not playing his old stuff. He allows me to mess around with songs particularly to make live songs sound a little different to the album."

It's a busy show for Ange with 64 inputs coming to FOH, two drum kits, lots of samples, lot of keyboards and vocal harmonies.

Paul uses a Telefunken M80 microphone which Ange describes as brilliant as long as you're right on it with your lips, if you move away it can get thin and nasty. It's been a god send for the monitor engineer Nikoma Bell also on a DiGiCo SD10.

"I use Shure KSM32's on the guitars because I really like a fat, full sound where I can," Ange elaborated. "Everything else is standard kit microphones. I like the old standard stuff because it works. If it's not broken don't try to fix it."

The two drummers and the keyboard player use IEMs and there are twelve wedges onstage for Paul at his two positions, at the piano and centre stage, and the other guitar and bass players also have wedges.

Ange's fear of playing the SOH turned out to be unnecessary with all three shows an immense success, the reviews were great and most importantly, the shows sounded brilliant. A lot had changed in thirty years!

Biz Talk

March 2018



By guest columnist
Simon Byrne



Contractor or Employee?

It Makes a Difference

As alluded to by CX in July last year, the government is getting serious about cracking down on compulsory superannuation avoidance and has provided money to the ATO to monitor and enforce non-compliance.

A lot of our industry is not in good shape when it comes to superannuation or PAYG (Pay As You Go Tax withholding) obligations. Apart from many casuals missing out on superannuation, employers who fail to follow the ATO's direction to pay super entitlements to their employees, could be subject to court-ordered financial penalties and even a year in prison.

When engaging casual crew, the reliance on the casual having an ABN does not automatically relieve the employer from Superannuation or PAYG obligations. Far from it. It is much more subtle.

Who is a contractor? A good way to define it would be a genuine business who has autonomy over when they work, what work they do, who does the work and how they do it. They may bring equipment and machinery as part of their services. Another indicator may be if they are responsible for fixing any problems, defects or damage they cause when doing the job, at their own cost? And yes, they'd definitely have an ABN.

Companies, trusts and partnerships are always contractors. An employee must be a person. If you've hired a company, trust or partnership to do the work, then it is a contracting relationship for tax and super purposes. The people who actually do the work may be directors, partners or employees of the contractor but they're not employees.

For example, I have my own company and I look after my own super and PAYG so all of my work is contracted. Easy and completely legal for my clients.

A crewing service would always be a contractor because they assume the responsibility for any pay as you go (PAYG) withholding and super obligations for the workers.

Who is an employee for super and PAYG purposes? Pretty much everyone else. That is, workers who are directly engaged, work specific times, work under direction, paid an hourly rate, don't bring tools and machinery as part of their engagement and so on. They may or may not have an ABN, it doesn't matter.

There is a link at the end of this article where you can check whether an arrangement is employee or contractor.

Once it is defined that a worker is an employee, the law is clear. They are entitled to super at a rate of 9.5% of ordinary earnings if they earn more than \$450 in a calendar month, and the employer is required to deduct PAYG from their payments and send it to the ATO. This is obviously challenging, particularly for small employers but it is the law, ignore it at your peril. However, managing PAYG and super can be highly automated including paying into separate funds.

For the young casual workers amongst us, there is probably a tendency to not care too much about superannuation. After all, you can't touch it for what seems like more than a lifetime (which in many cases, is probably true!), so you are not that interested. This is the worst thing you can do. Your super is your future.

First of all, an employee is entitled to it by law if they earn more than \$450 in a calendar month, it is theirs! However, through the powers of compounding returns, the early contributions are the most important because they are in the fund longest, so grow the most. \$1,000 at 6%, will be \$3,207 in 20 years time. Most funds return more than that. Last year the top funds returned about 10.8%.

By the way, spend some time choosing a good fund (Hint, the industry/not for profit funds nearly always deliver better returns).

As always with legal stuff, get your own independent advice. This article is only of a general nature, might be wrong and some special situations do exist for performers and those whose work supports them, particularly in broadcast and recording.

Check if your arrangement comes under employee or contractor using the ATO's decision tool. As long as the questions are answered correctly, the decision can be relied upon.

<https://www.ato.gov.au/Calculators-and-tools/Host/?anchor=ECDTSGET&anchor=ECDTSGET#ECDTSGET>

Arts Law Centre of Australia has some useful information.

<https://www.artslaw.com.au/info-sheets/info-sheet/superannuation-and-contract-for-services/>



Sustainability, Stability and Reality in 2018

A Year of Development and Opportunity for the Committed

If you aren't across the relationship re-alignments currently taking place in our industry you must have just woken from a long coma, and there is every indication the landscape is far from settled. Maybe the current experience is a natural correction that needed to happen, and as the cliché goes, the cream rises to the top. Many industry participants are impacted, some more than others, therefore fortuitous is the only way to describe the timing of the ACETA inaugural convention, an environment for stimulating development, change and the realisation of abundant opportunity resident in a new landscape.

Whether it is the acoustics applied in an ancient Greek amphitheatre, the stage mechanics of a Shakespearian theatre, the ability to capture and broadcast thanks to the discovery of electricity that also gave us light, and the arrival of the digital age, enabling technology has been with us since the dawn of entertainment. At its very core, entertainment technology is far from generic or derivative and regardless of intervening factors, our industry remains as unique today as it was at its origins. By its very nature our industry is a definitive people business, best led by passion, commitment, those interested in the technology and an understanding of its innate culture along with requisite leadership skills that care for others. History shows that those who target our industry motivated only by high financial returns will inevitably fail, due the fact it is not as big and easy as it may seem to those motivated by unsustainable aspirations.

Three distinct groups are served by ACETA, manufacturers, manufacturer's representatives (members) and service providers (associate members), whose needs are addressed equally, as realised in the program format at the upcoming convention. The current relationship upheaval is

centred on manufacturer's representatives who confront the challenges of sustainability, borderless trading and satisfying suppliers. Part of the current re-alignment can be attributed to unrealistic expectations of manufacturers compounded by local representatives with little understanding of market reality in servicing existing responsibilities and seeking new ones. With the propensity for both sides to over-estimate, it is worth noting that with the new and developing markets in Asia, the Sub-Continent and Middle East, Australia can now be considered somewhere around 1.5% of international entertainment technology consumption.

Whilst the canny industry veteran has an innate sense of market realities, they nonetheless speculate, assume and rely on information provided by vested interest. The number of market reports are increasing, but are they fact based or self-serving, is there sector crossover and duplication? We are told that the worldwide 'Virtual Reality' market will be worth around USD 30 billion in 2020 and what does that mean? We were recently advised that the international Sound Reinforcement market would soon hit USD 9 billion. We have seen sound reinforcement installations described as AV Integration (where there is no V only A), broadcast rooms described as AV Integration when we use to call it a studio, no need to get to bent out of shape here as long as we maintain relevance, understand and sing from the same page. In summary, misinformation, no information and vested interest reports create unrealistic expectations, sabotage brands, and place unnecessary pressure on representatives.

The recent ACETA manufacturers survey has been well accepted and put to good and broad use. Why? It was fact based and the vested interest was reality, only really possible conducted by and for the industry by its peak body, but more important

it was technology and not market sector based, providing clearer lines of demarcation and accuracy. Whilst this survey has provided specific information on the creative sector and will be used as an aid to export, it also looks likely to bring about corporate amalgamation and acquisition to increase overall strength and provide international impetus to those creators who wish to succeed overseas. Interest in this process has already been expressed and will be facilitated at the convention, once again another opportunity of significance. Following its release many manufacturers representative members put forward the notion of conducting a similar fact-based survey for the import sector, to establish a more realistic understanding of the nature and size of our domestic market. No doubt a successful survey outcome would provide a valuable resource to assist budgeting, reduce poor decision making, alleviate stress and the need for distributors to defend their position, often an exercise in futility. ACETA will indeed investigate the potential for a domestic market survey to benefit our distributor members, providing we can guarantee a fact and not opinion-based process. In addition, it will most

likely need to be technology and not market sector based to ensure clear boundaries are established and all entertainment technology sectors are accurately portrayed. Import statistics are not comprehensive enough for such an initiative, therefore we will need to explore other processes, however it will be addressed at, and leading up to the convention.

Finally, the needs of the service provider sector are now extremely well covered at the convention, where relevant health, safety and rigging codes (including ICOPER) will be presented with the aim of increasing compliance and standards, adopting codes and maybe, just maybe realising the format for an accreditation / certification system that will elevate those who care and marginalise those who don't.

That's it for now and

All the best
Frank Hinton
 President ACETA

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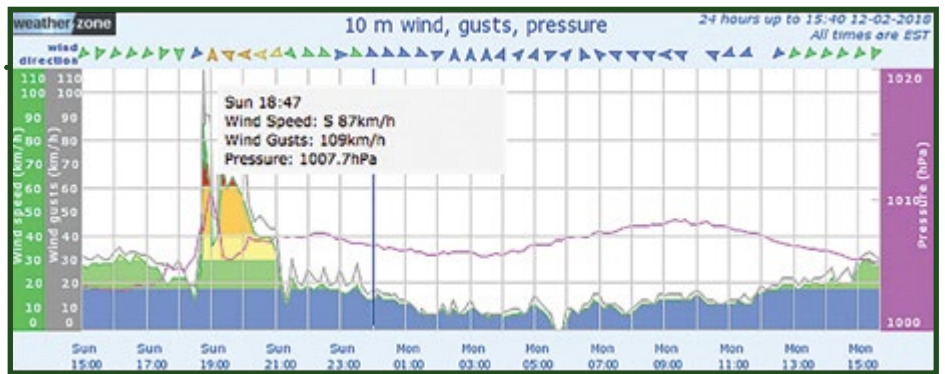
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WIND



- A LESSON FROM SANDSTONE POINT

By Simon Byrne

Last month the Red Hot Summer Tour was slammed by an unexpected and severe storm at Queensland's Sandstone Point. According to weather reports, the wind gusts in the area reached 110 km/h. To the production team's credit (Powa Productions and Regional Touring), the stage structure withstood the onslaught and through great crowd management, no-one was injured.

Obviously wind exerts force on a structure, but as the wind speed increases, the force is not linear. The force is actually proportional to the square of the speed. So the pressure exerted on a 1 square metre panel from a wind at 10 km/h is only about half a kilogram of force. In 20 km/h it rises to about 1.9 kilogram force, and for 67 km/h it is 21.5 kilograms force (which happened more than 10 days last year in Sydney).

And on that day last month in Sandstone Point where the wind gusted to 110 km/h? About 57 kilograms force on a single square metre of surface was exerted. That's 114 times the force of 10 km/h, yet only 11 times the wind speed. The outdoor stage had very large sides so the lateral forces must have been huge.

Event structures have dramatically large surface areas upon which the wind can act, so the potential for extremely large forces to be exerted

must be accounted for. Hundred's of square metres in surface area could mean up to thousands of kilograms force being imposed horizontally in unpredictable ways. Backdrops, speakers, lights, LED screens and even truss all present as surfaces upon which the wind acts.

Wind speed normally increases with height. So the wind that one feels on the ground is stronger above. Therefore, the forces from wind are greater at the top of the structure than at ground level.

And then there is lift. Lift is the component of force that is perpendicular to the oncoming wind flow direction. It is how planes stay in the air. That means all structures need to be anchored to the ground extremely well, otherwise they may literally take off (I understand that the FOH tent at Sandstone Point was held down by eight crew, for forty minutes!). By way of background some planes only need wind of about 45 km/h to pass over their wings to take off. It is common for planes to be flipped over in storms if they have not been secured to the ground properly.

The event industry is particularly at risk for wind related accidents because we surround our temporary structures with thousands of people, that is the point. Also a promoter is pretty much guaranteed to make a loss if a show is cancelled (even with insurance which I understand can be

difficult to claim on) so the financial incentive to keep it going is very strong. "The show must go on!" as they say.

Strong winds, together with temporary engineering, large crowds and financial pressure to keep the show running, combine to make a cocktail where accidents with injuries or death are more likely to happen.

There is absolutely no doubt that skilled and qualified people with a sound knowledge of wind loads need to be involved in making event temporary structures safe. But I believe we need to do much more. We need to help the wind experts appreciate the unique nature of live events where large audiences are packed in around temporary, and perhaps unique, untested structures, and it is quite possible that the promoter will insist that "the show must go on".

I'm delighted that the production boys and girls at Sandstone Point obviously did things right!

« TECH TIPS from page/31

PRESS FEED

CONFIDENCE MONITOR

We've all been there, just as the gig starts the media pile into the room and plug into the media splitter. You need to know it is working properly.

You can set up your own confidence monitor from the media splitter back into a spare channel on the audio desk. That way you can PFL in your headphones the media splitter output anytime you like.

You obviously have to ensure that the channel you use for the confidence monitor does not output anywhere otherwise you could have some nasty feedback loops.

DESK RECORDINGS

For the corporate live sound operator, it is easy to forget to start the recording, it happens a lot. It leads to an uncomfortable conversation with the client because let's face it, as far as they are concerned, is not that hard to press a record button.

The reason that it happens so much is because when the event first starts up, it is the first time the operator has got to listen to the PA with the audience in, so his/her attention is naturally taken up with settling the mix in the room. Recording forgotten...

With digital recorders, available record time is not an issue. Therefore it is a good practice is to start the recorder well before the event starts. I record all my jobs, even if the client does not ask because I've had a few ask after the gig and it is nice to be able to give it to them.

When recording the show, the levels will likely be different to what was expected so there is a risk that the input will clip. To get around this, I send a mono signal to both channels set up channel one to peak at say -12 dB, and channel two at about -30 dB. Channel two becomes the safety channel so if channel one is clipped, you've still got 18 dB of range on channel two.

If the recording is for purposes other than archival, it is worthwhile having another person look after it. It is unrealistic to expect a live sound operator to do a great job in the room, as well as deliver a broadcast quality recording.

Have you got any tech tips worthy of publication? Send them to

HEADPHONES

You've got some, right? They don't need to be the best sounding things because monitoring in a show is a poor environment to hear clearly, so you won't be able to make critical judgements during the gig. You can though, quickly line check, fault find and check recordings, so they need to be capable of being loud without distortion and robust so as to stand up to the rigours of the road. Over the ear types are best as they do slightly better job of rejecting room noise.

THE Z CABLE

We've all used a splitter or "Y cable". The Z cable is the same deal but with 2 male XLR's AND 2 Female XLR's with all pins connected in parallel. So in the one adaptor cable you've got a male to male XLR adaptor, a female to female, a single male to dual female and single female to dual male XLR's. Really flexible!



It's as ugly as sin but it's a get you out of the poo problem solver and it works great!

SHOW WIFI

With a lot of desks now offering remote control using apps, we rely a lot on wifi so it's important to have it playing nicely.

As with all RF, height is absolutely your friend when locating the router. You want a clear line of sight between your phone/tablet and the router's wifi antennas. This is possibly the single most important thing that can be done to increase range and reliability.

2.4 Ghz or 5 Ghz? - The main differences between the two frequencies are the range (coverage) and bandwidth (speed) that the bands provide. The 2.4 GHz band provides coverage at a longer range but transmits data at slower speeds. The 5 GHz band provides less coverage but transmits data at faster speeds.

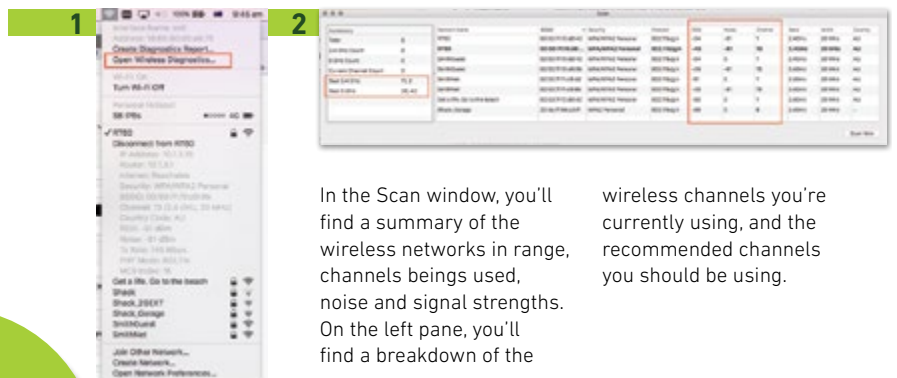
For control, you don't need the speed advantages of 5 Ghz. However, if your router is capable of 5 Ghz and it reliably delivers the range you need, you should probably switch over to it. Only because every punter will also have a mobile phone, most of which will have wifi turned on and the 2.4 Ghz space becomes super congested.

Turn off SSID (service set identifier) in your router. The SSID is the broadcast name of your wifi network. There is no reason why you should advertise that your network is there. Smart hackers don't need the SSID to find you, but why make it easy?

Still having problems? Apple Macs has some powerful hidden WiFi diagnostics built in, which help you understand what is going on in your environment.

Hover over the WiFi icon in your OS X menu bar, hold down the Option key \sphericalangle and click the icon. This will show you a hidden dropdown menu where you'll find Open Wireless Diagnostics — click on that.

Once you've opened up the Wireless Diagnostics window, ignore it and head over to the top left of your menu bar and click on Window, then Scan.



In the Scan window, you'll find a summary of the wireless networks in range, channels being used, noise and signal strengths.

On the left pane, you'll find a breakdown of the

wireless channels you're currently using, and the recommended channels you should be using.

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

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LeTour DownUnder What I did on my holidays Part Deux



This year my gf and I decided to holiday in Adelaide for the Tour Down Under bike races. Fun in the sun and a chance to catch up with friends from our 2013 Tour de France bike trip.

It turned out to be rather more sun than any of us expected, as the weather forecasters predicted a major heatwave of 40 plus temperatures all week ... and for once they were right! But the beauty of a heatwave while on holiday is that you can slop around in just a loose t-shirt, baggy shorts and old runners and still feel well dressed!

We arrived mid afternoon, and went straight out to the festivities.

The fun started with the traditional 'Run around the racetrack in your undies' race, where men, women and children could peel off their clothes, slip into some designer underwear and run, walk, shuffle, or push a pram around the circuit. It was an enjoyable way to spend the afternoon, and raised a lot of money for the Bowel Cancer charity.

Later that evening there was a free concert starring Guy Sebastian at the tour village in Victoria Square, right in the heart of the city.

I'd never seen him perform 'live' before, so didn't quite know what to expect, but he is a natural entertainer and put on a great show. He was also very popular with the audience; local boy makes good!

The production featured a very efficient small line array, with more than enough level available for a big fat sound. Plus plenty of lights, a band that never missed a beat, and a big Video screen for all the close-up action!

The whole show kicked along flawlessly, with only two mistakes:

Firstly, changing the set list halfway through the show without telling anyone in the band first is a no-no! Guy suddenly wanted to play a different song where he played keyboards. That's fine, it's his show, but it required a different synth patch that he couldn't find straight away, and spent a lot of time trying to find it while the production ground to a halt around him.

Eventually he found it and the show got under way again. No-one seemed to care except me, but that's what I'm there for.

Second mistake - throwing to the audience without singing

the words for them first. Guy was telling a story about family get togethers where they all sing Daryl Braithwaite's 'Horses'. Cue the band, and we're into the song. Coming up to the first chorus, "that's the way it's gonna be little darling..." Guy stops singing and throws it to the audience to sing.

Big mistake, because the song has an unexpected key change just before the chorus which is hard enough for a professional singer to hit, let alone a crowd of cyclists and non-singers. No-one is sure of what to sing, so they don't, and the song just dribbles away.

Luckily Guy realised what was wrong and started singing, in the right key, and the audience gradually joined in, some of them even in the correct key! First rule of performing - don't get the audience to sing if they don't know what to sing! Sing it yourself first, then get them to sing along, then stop the music and let them sing by themselves while you wave and encourage them.

The next day I got up early and rode up Mt Lofty before the heat started. It's a long grind but there's a bike path all the way, a lot of which is the old road into Adelaide, now bypassed by the freeway. Best of all, it is a smooth downhill run all the way back, so I was able to freewheel down the mountain and cruise right into my hotel's front door without having to pedal once!

The standard of the audio production at each of the bike races was excellent, with classic Meyer UPAs at the starts, and several small line array columns up and down the streets as well. Loud enough for everyone to hear the speeches, the commentators' chat and the starter's instructions clearly.

Much better than the 2013 Tour de France, where a couple of plastic 12" and horn boxes attempted to handle everything, and not very well.

Every year there is a ride sponsored by Bupa health insurance, where you can ride a chunk (60 - 100k) of the race a few hours ahead of the real race, then sit back at the finish and watch the professionals do it in a quarter of the time it took you. It's a sobering experience to see them whizzing along the same roads and hills that you've just been grinding along slowly.

Still, I console myself with two thoughts; one - 'this is all they do'. They get up in the morning, race, then that's it for the day. They don't have to build audio equipment, rig lights, load PA systems, drive the truck, and the thousand other little jobs that make up the working week in the production biz!

Consoling thought number two? - they're easily half my age so they should be at least twice as fast as me!

However, this year the public ride was cancelled at the very last minute, due to the weather conditions; with temperatures of 45 degrees or more there was the very real

risk that some middle aged riders might be slightly less than optimally fit, and cark it on the final mountain climb!

So instead we just rode the 10k to the start of the race in Norwood, had some breakfast, waved the riders off and rang our cow-bells, then pedalled back to the hotel to watch it on TV in air conditioned luxury. By the time we got back to the hotel my eyeballs were well on the way to roasting! The tears were evaporating off my eyes faster than the eyelids could replace them!

Watching the race on TV, I could see that a lot of the pro riders were wearing ski goggles that totally isolated their eyes from the hot wind. Wish I'd thought of that!

The next day we drove down to the beachside suburb of Glenelg, where the Beach Volleyball championships were being held. My gf wandered around taking pictures while I was forced to watch team after team of ultra fit girls playing volleyball. The things I do for this magazine!

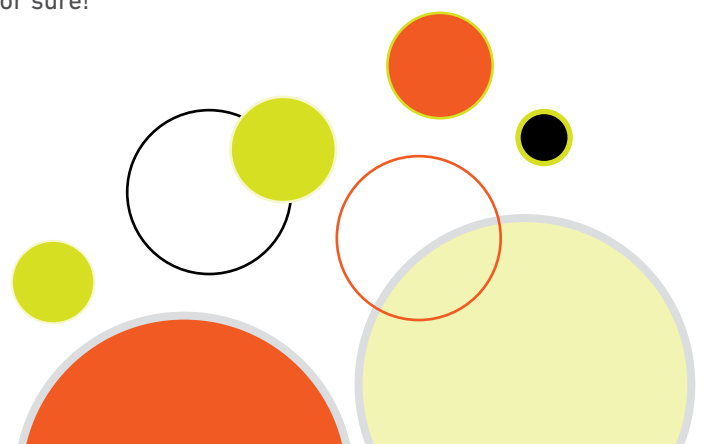
Even though I watched intently for half an hour or so, I have to confess that I know even less about the rules now than I did before they started. It mainly seemed to involve hitting the ball in the air with their arms, hi-fiving, falling face down in the sand, hi-fiving, getting up again, hi-fiving, and then hi-fiving the competing team, until I was all hi-fived out! Lordy.

Reading through the Tour Guide in the newspapers on the final day, an unusual event caught my eye in the What's On section.

It was called the Wilson Car Parking sprint. Basically two riders at a time (male or female or both) race each other up 12 levels of a multi story car park. It's like a miniature Alpe d'Huez (the Tour de France mountain with 21 u-turns) and very fast. Had I known that anyone could enter (you just fronted up and got a number) I would have had a go myself.

We arrived there at 9 o'clock that evening and the event was in full swing. The place was jammed with riders and watchers. Every 30 seconds or so another pair of cyclists would tear up the ramps for their burst of fame. The audience would clap, yell, run alongside them, wave their beers and cheer.

It was really great fun, although I can't remember who won. A better PA might have helped. Two plastic DJ boxes on sticks to cover a few thousand rowdy fans don't cut it. Despite this, the event was an excellent ending to what had been a truly well organised week of sport and entertainment. If they have this car park sprint again I'll be in it for sure!



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