CX

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Mandylights gets atmospheric with Antari at Vivid

'The Liminal Hour' is a theatrical experience designed by the artists at Mandylights, Earth Visual & Physical Inc, Jacob Nash and James Brown, transforming the Barangaroo's Wulugul walk in Sydney into a magical bushland.

As a part of the Vivid Festival in Sydney, the show features an enormous six metre high illuminated artwork named Marri Dyin – meaning "Great Woman" in the Eora language – who moves through a spectacular illuminated landscape each night.

To provide the atmospheric effects for 'The Liminal Hour' experience, Mandylights specified and supplied eighteen Antari IP-1500 smoke machines, purchased from ULA Group.

"Having used the Antari atmospheric machines extensively in theme park environments for years, I knew they would be a perfect solution for this unique installation", says Clint Dulieu, Technical Designer at Mandylights. "I was sure they would be able to deal with the Sydney Harbourside environment and exposure to the weather for an entire month at Barangaroo. They have been fantastic, performing flawlessly every night," he commented.

The Liminal Hour

The work's narrative sees Marri Dyin calling on natural forces, transforming peaceful bushland into a raging bushfire, then a torrential storm - a cycle of regeneration which assures new life and prosperity for future generations. While the storm calms, Marri Dyin then sits to share a moment with children. Marri Dyin is not a traditional spirit, rather a contemporary concept. Her existence seeks to recognise the influence and importance of the First Nations women, including Barangaroo, who lived in Sydney prior to settlement. Marri Dyin represents their strength and spirit, and their role as providers for their people through a connection to the land and its waterways.

The Liminal Hour (photos courtesy Destination NSW)

Gearhouse Broadcast
On The Ball with
Shure Axient Digital and Clear-Com

The frenetic pace of the Rugby Sevens and Tens competitions sees stripped-down teams competing in a gala atmosphere with lightning fast-halves and quick turnarounds between games. To sporting audio and comms provider Gearhouse Broadcast, this means having around 40 referees fitted with wireless mics and monitoring, sending audio to broadcast and the coaches, and receiving audio back through their in-ear monitors, all with one minute to changeover active frequencies between games. In this mission-critical environment, Gearhouse relies on Shure Axient Digital wireless and Clear-Com matrices to make sure no-one misses a call.

"The Rugby Sevens at Sydney's Allianz Stadium were 79 games across three days, and the Rugby Tens at Brisbane's Suncorp Stadium were 40 games in two days," reported Andrew Henderson, OB Supervisor at Gearhouse Broadcast. "At the Sevens, we had 40 referees that had to be wired for comms. Each ref had a Shure PSM 1000 receiver for listen and a Shure Axient Digital AD1 bodypack transmitter fitted in their vests. Each game saw six refs on the field, with the main ref mic always open. The two assistant and two goal refs and the sideline manager all had push-to-talk buttons. The coaches had Clear-Com talkback panels so they could speak to the referees if they thought they needed to review a decision."

As you'd imagine in central Sydney and Brisbane, the RF environment was busy. "There was a lot of background RF, and a lot of RF on-site," added Andrew. "But Axient Digital frequency management is really good; Shure's Wireless Workbench software scans the area and does the hard work for you. I changed one frequency before we started and that was it for the duration. We couldn't allow everyone to have their own frequency, so we ran two groups managed out of Wireless Workbench. For each game, we loaded a new file and pushed it to the receivers. There was about

one minute between each game, so we were restricted with time and turnarounds. We had 12 frequencies live at any time, with all of the in-ear-monitors on same frequency."

Andrew routed all incoming audio through a DSP unit that automixed the wireless mics before outputting to a Clear-Com Eclipse PiCo 36 port matrix. Audio was fed from there to the referee's in-ear-monitors, the TV broadcast, and to Clear-Com V-Series Lever Panels in the coaches' boxes. The mics from The Clear-Com Lever Panels were then fed back through the Eclipse PiCo into the DSP and back out to the coach's ears.

Gearhouse's rapid adoption of the new Shure Axient Digital wireless system has brought instant advantages. "Last season we were using Shure's top-of-the-line analogue UHF-R system," Andrew elaborated. "As soon as we swapped over, I could immediately hear the difference. I couldn't believe the quality - it's amazing. And the way Axient Digital manages its frequencies, I'm getting a lot less interference."

Another huge bonus for Gearhouse is the ease of set-up. "Allianz Stadium is very big, and we were located at the top at the radio boxes, almost the furthest point from the field," continued Andrew. "We had two paddles just outside the radio box on a couple of handrails, and we didn't have dropout all weekend - I couldn't believe it. The broadcast crew asked me how I was covering the field. They all thought we were running RF over fibre to multiple antennas, they were so happy with the quality."

Gearhouse Broadcast has now built 15 kits with Shure Axient Digital and Clear-Com Eclipse PiCo, and will be getting heavy use out of them in the upcoming seasons of the AFL and Super Rugby. "We took on Axient Digital at the end of last year's AFL season, and it's the best radio mic system ever I've ever used in terms of both audio and RF quality," concluded Andrew.

Gearhouse Ref Comms

TLC Global announce two new partnerships

IVL Carré

Lighting distributor TLC Global have added two new brands to their portfolio – Montreal-based Minuit Une and Irish tracking company Spotrack.

"Our team prides itself on the ability to put innovation and technology in the hands of our creative Australian and New Zealand peers," said Sean McKernan, General Manager of TLC Global. "As designers and users ourselves, we were instantly drawn to Minuit Une and the incredible potential that their IVL technology offers. It unlocks an alternative way of thinking and inspires change in how we see and utilise light. This technology impels new possibilities and creates a category of lighting products that has no rival."

IVL Carrés are game-changing lighting products that allow you to create multidimensional advanced shapes from one source of light. Each IVL Carré covers a wide area by producing four directive light plans, one on each side of the square. Each plan is adjustable at a 180° angle to create stunning perspectives when combined together. The light plans of each IVL Carré can be cut into 1, 2, 4, 8, 16, 32 or 64 beams.

"With their skilled and talented team, TLC Global is known for providing excellent guidance and support to customers, before and after sales," said Eric Phelep, Sales director of Minuit Une. "That is exactly what we are primarily looking for in our partners: reliability and confidence! TLC Global will be the best possible partner to develop our brand in the very promising Australian and New Zealand market."

Spotrack AFS is an automated intelligent followspot tracking system that uses any DMX controlled moving light as a followspot, with the capacity to control up to 20 moving lights simultaneously.

"Davey and the Team at TLC Global have been fantastic and we have been working with them for some time on this product," commented Liam Feeney, Managing Director of Spotrack. "Their ideas and insights into real-world uses and operation of the Spotrack system have been amazing. TLC Global's team has the knowledge and experience to understand the infinite capabilities of the system and to see that it is so much more than just 'another' automated

followspot system."

"The fact that you can purchase a system for around the same price as a 2500W long-throw followspot and have a system that can control up to twenty spots at the same time from any angle, keeping the spot operators out of the truss or FOH towers is a win for all concerned" remarked Davey Taylor, Managing Director of TLC Global.

Spotrack is currently touring with Metallica in the USA as their exclusive followspot system. Four systems on the tour each control five lights per performer.

Aurélien Linz, CEO, Minuit Une, Sean McKernan, General Manager, TLC Global, Eric Phelep, Sales Director, Minuit Une

Liam Feeney, Managing Director, Spotrack with Davey Taylor, Managing Director, TLC Global

Allen & Heath SQ-7 ①

The SQ-7 is the 33 fader flagship console in Allen & Heath's 96kHz SQ series. The SQ-7 takes the same XCVI 96kHz FPGA engine and adds extended control and I/O in a larger format, boasting 33 faders, 32 onboard preamps, 16 custom soft keys and 8 user-definable soft rotary controls.

SQ-7 is a 48-channel console, fully compatible with a range of remote I/O expanders, including the portable DX168 96kHz stage boxes. Inputs and mixes can be individually assigned to 192 fader strips across 6 layers, while 16 softkeys and 8 user-assignable soft rotary controls allow the mixer's workflow to be customised to the needs of each show and operator. Forthcoming Dante, Waves and SLink audio networking cards further extend the scope for expansion, system integration, FoH / monitor splits and recording.

Australian Distributor: Technical Audio Group
www.tag.com.au or (02) 9519 0900

② Dynacord TGX

Dynacord's TGX 4-channel live sound amplifiers come in two models; the TGX10 running 4x 2,500W at 4 ohms and the TGX20 running 4x 5,000W at 4 ohms. Both models run uncompressed 96 kHz DSP with FIR-Drive processing and Dante networking, and include OMNEO integration for seamless compatibility with Dante and OCA. A Full colour touch screen is included for control without software.

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

③ Elation Artiste Picasso

The Artiste Picasso is a full-featured luminaire featuring a new 620W 6,800K Cool White LED engine delivering over 23,000 total lumen output, fast 7° to 55° zoom, full CMY colour mixing system, linear CTO colour correction, and 6 dichroic colours including a high 87 CRI filter. It includes 7 rotating/indexing glass and 7 static-stamped metal interchangeable gobos, 4 rotating full blackout framing blades with +/- 45° individual blade rotation, full 360° bi-directional animation wheel, 4-facet and linear rotating prisms and 2 frost filters. It comes with Elation's E-FLY internal wireless DMX transceiver built-in as well as 5pin XLR, RJ45 etherCON, and powerCON TRUE1 connections.

Australian Distributor: Lexair Entertainment
www.lexair.com.au or 0477 539 222

Epson LightScene ④

Create stunning visual displays and immersive environments with LightScene, the digital signage solution from Epson. A convergence of lighting and display technology, LightScene laser projectors captivate audiences by simultaneously illuminating and projecting on virtually any surface or material, unleashing dynamic, experiential content for digital art, commercial signage and décor applications. Designed to blend in discretely to any setting — from retail, hospitality and event spaces to showrooms and museums — LightScene offers a sleek, spotlight design, with an array of configuration, mounting and programming options.
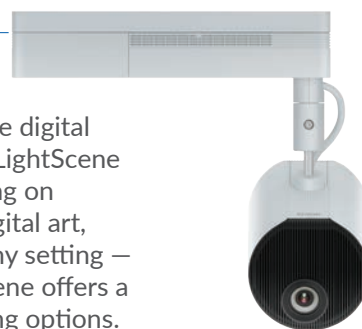
Australian Distributor: Epson / www.epson.com.au or (02) 8899 3666

⑤ Ergheiz Fusion 2

The Fusion 2 marks the begging of a new era in Linear Lighting. Because of its intelligent connector system the Fusion 2 creates seamless light lines — horizontal or vertical, indoor as well as outdoor. It features 20 Osram 15W RGBW LEDs, Constantcolor 6° optics, a fanless IP65 rated outdoor design, and seamless connection using its patented intelligent connector system. When used with its diffuser plate, it can achieve beam angles of 20°,40°,60° and 10°x60°. All 20 LEDs are separately controllable, and a vertical stand and hanging installation brackets are available.

Australian Distributor: TLC Global
www.tlcglobal.com.au or (07) 5539 2142

Eventec M1S80W ⑥

An updated version of the successful M1S75W, this new unit features an advanced 8000K white LED module, adjustable manual beam angle of 10 to 16 degrees, and 16 facet prism. It has a single colour wheel featuring 8 colours + open, single rotating gobo wheel with 7 gobos, focus via DMX and 2.4" colour LCD control panel. RRP: $1,290.00 inc GST.

Eventec CB1 - Crowd Barrier

Expanding on the Event Lighting stage series, Eventec have introduced the Crowd Barrier system. Comprised of the CB1 and CB1R (corner section) the CB1 has an aluminium frame with dimensions of 1m x 1.25m x 0.15m. RRP: $559.00 inc GST (CB1) $669.00 inc GST (CB1R).

Australian Distributor: Eventec
www.eventec.com.au or (02) 9897 3077

7 JBL VTX A8 and B18

JBL have announced the JBL VTX A8 dual 8" line array loudspeaker and companion B18 single 18" subwoofer. The VTX A8 combines proprietary JBL transducers and latest-generation high-frequency waveguide acoustic design to provide 110 degrees of horizontal coverage, while the companion VTX B18 compact and lightweight subwoofer is designed to extend the low frequency response of full range JBL VTX systems below 30Hz.

The VTX A8's 8" neodymium low-frequency woofer is based around JBL's 4th-generation Differential Drive technology, featuring a dual-voice coil, dual-gap configuration. Midrange drivers are integrated into JBL's patented Radiation Boundary Integrator (RBI) for a seamless transition across each band and maximum transducer density. VTX A8 integrates two instances of the JBL 2423K 2" compression driver found in the larger VTX A12. The innovative JBL 2423K driver combines the compression drive, phasing plug and line array waveguide in a single part, which provides increased accuracy and sensitivity, along with lower distortion and lighter weight.

Australian Distributor: CMI Music and Audio
www.cmi.com.au or (03) 9315 2244

Martin RUSH MH 10 Beam FX 8

The Martin RUSH MH 10 Beam FX is a compact 60W RGBW LED Beam moving head fixture with an independent, built-in LED ring. With 24 individually-controllable RGB LEDs surrounding a central beam lens, the RUSH MH 10 FX offers a variety of exciting visual effect possibilities at an affordable price.

Other features include continuous pan and tilt and lightweight build, providing a number of interesting rigging possibilities and high-speed looks. The Martin RUSH MH 10 is a perfect fit for nightlife, houses of worship, cruise ships and small-to-medium touring and rental customers.

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

Meyer Sound UP-4slim 9

The UP-4slim is a three-way system comprising two 4-inch cone drivers, a 1-inch metal dome tweeter, a three-channel amplifier and dedicated signal processing. The integral three-channel amplifier produces 500 W total output power. As with the other loudspeakers in the IntelligentDC range, the UP-4slim receives balanced audio signal and 48 V DC from a remote, rack-mount MPS-488HP power supply and signal distribution unit. The UP-4slim measures 404 mm x 109 mm x 145 mm and weight is 5.9 kg.

Australian Distributor: Audio Brands Australia
www.audiobrands.com.au or (02) 9659 7711

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10 Sennheiser TeamConnect Ceiling 2

TeamConnect Ceiling 2 uses automatic adaptive beamforming technology to automatically focus 28 omni-directional microphone capsules integrated within the discrete ceiling array to the voice of any speaker in the room regardless of their position. It supports Dante networks, including compatibility with Dante Domain Manager (DDM), and uses Power over Ethernet. It will be compatible with Sennheiser's Control Cockpit software and offer remote configuration and monitoring via an open media control protocol (API), allowing for easy integration into media systems and camera control applications. TeamConnect Ceiling 2 can be installed virtually invisibly into the ceiling to allow for truly flexible usage of a space.

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

Smoke Factory Spock 11

The new Spock 3kW Fog machine is equipped with a new type of nozzle design, with an output volume of only 82.5dBA (from one metre in front of the nozzle at full output). It is designed for applications that require large amounts of fog at near silent volumes. In addition, the machine has two different pumps - a small 24 volt pump delivers the fluids for the first thirty percent of the output, while the larger 230 volt pump delivers the greater amount of fluid for the upper portion of the output. Thus, it is possible to produce a fine and regular output of one to one hundred percent, which can provides theatres with high flexibility. Thus, fog effects can now be used in quieter scenes on stage and steady fog flow can be used in lower volume ranges.

Australian Distributor: TLC Global / www.tlcglobal.com.au or (07) 5539 2142

12 SSL L100

Solid State Logic (SSL) have announced the release of the L100 live console - the newest member of the SSL Live console range. L100 provides a physically smaller solution in a compact, 12 + 2 fader configuration frame, while retaining the same fast access layer / bank switching and Super-Q technology to ensure no channel, group, aux, VCA, or master is ever far away from the engineer's fingers. Users who require more faders can expand the L100 with the addition of SSL's new Remote Tile and more screen space can be added via an external touchscreen and the addition of tablet control.

96 fully-processed paths provide ample capacity for small- to mid-sized live productions, and its flexible architecture means it can be configured with up to 64 input channels, 36 aux sends, 12 stem groups, 12 VCAs, and four masters. An additional 4 x 32 input, 12-ouput matrix is always available.

Australian Distributor: Amber Technology / www.ambertech.com.au or (02) 9998 7600

13 Theatrixx xVision HDMI-HDBaseT Converters

Theatrixx xVision is proud to announce the first HDBaseT converters designed with rental and staging in mind. Completely compatible with HDBaseT 1.0 devices, these new units support HDCP-protected content transmission at up to 4K30 resolutions thanks to their HDMI 1.4 ports. HDBaseT connectivity is provided on a professional locking EtherCON connector, preventing accidental disconnection. An auxiliary 10/100 Mpbs Ethernet port is also included for remote LAN control of projectors, media servers, and other devices. The units have been tested with a good-quality CAT6 STP cable and are capable of up to 100 metres transmission with a 4K30 signal with no compression or latency.

Australian Distributor: Lexair Entertainment / www.lexair.com.au or 0477 539 222

Infocomm: IC18

AVIXA
Audiovisual and Integrated Experience Association
steps up

By Analog Julius

June is InfoComm time, where what was once just the AV industry shows new stuff and huddles in conference rooms. These days it's a whole lot more, so the organising association have rebranded themselves.

Now they are The Audiovisual and Integrated Experience Association. To make a point they made the entry hall at Las Vegas Convention Centre funky. There was a DJ and lots of lights and I think the message of 'let's be younger' worked. It's also a message that says that screens, video, control and audio are all one happy integration.

800 exhibitors ranged from the enormous Crestron experience down to the little booth with the scary Bad Dog Tool dude, selling his never-go-blunt blades and chopping up blocks of cement as a demo. How he got away with it I will never understand – the noise of the saw, the dust and metal filings, and his axe murderer demeanour made great theatre.

In between you found most audio manufacturers, every screen vendor from A to Z, every control and cable option,

mounts, furniture and even some pickup trucks for sale. There was a lonely little lighting corner missing most major brands, so hold off for LDI at Vegas in October for lights.

InfoComm draws 40,000 people from around the world, and several hundred from Down Under. The show management is first class – enough eating, drinking, and transport. If you try you can find free beer towards the end of the day too, along with more than enough free swag. It has demo rooms, so you can wander around in a technopian stuporia and indeed there are people who live that nightmare.

Outside the Vegas summer is brutal, and the hotel swimming pools are full of people holding bottles. The street is not the place to be.

LG seemed to have the most interest of all the screen makers.

PRODUCT HIGHLIGHTS:

(1) Here's a picture of the OLED Canyon with its winding LG Open Frame OLED panels in convex and concave configurations.

But this caught my eyes: these transparent 55-inch OLED displays! Supposedly meant

(2) for retail environments and art galleries - where products can be placed behind the display without distortion or where special effects may be displayed on the Transparent OLED signage. I guess. But wow!

Jason Grbevski showed me the Sennheiser Team Connect Ceiling

(3) 2, which has cunning programming to find voices in rooms and also to avoid noisy areas like doorways. It uses 24 microphones and he likened it to having a bunch of follow-spots which can be opened up wide or narrowed right down.

"We demo by Skype – a client can call in to our boardroom and see us walking around talking. It really works!"

(4) Epson claim to be the number-one selling projector brand worldwide, and showed the world's first 12,000 lumen native 4K 3LCD laser projector.

(5) Over at PowerSoft they make amplifiers that do things we could only once dream of. Now their 4 and 8 channel amps have 'power sharing', quite literally you assign output power as required (within the overall limits of the device). Example: the Quattro Canali (4 ch) comes capable of 4 x 1,500 watt channels (6,000 watt total), so you could have a pair at 2,000 and a pair at 1,000 watts. Even more handy you can tell it to give you 70v or 100v outputs for those enormous strings of little speakers in a retail store.

(6) Jands Vista sold to Chroma-Q! End of forty years of lighting control manufacture at Jands in Sydney as AC Lighting brand Chroma-Q picked up the range for an undisclosed price. Jands boss Paul Mulholland says the Vista 3 software, Vista MV and Vista EX are all new and there is another product 'in the pipeline'.

7 Dante was everywhere (go Australia!) and the new Visionary Solutions Duet Encoder/Decoder stood out. It splits your signal into 4k video (VLAN) or audio (Dante) over GB Ethernet on a single platform. They call it 'video for audio professionals'. I call it easier to understand than a lot of the stuff at IC18!

8 And there were an additional 790 exhibitors including my personal favourite, Mr. Bad Dog Tool Man. This dangerous individual was cutting up a storm over in a corner booth with sawdust, cement and steel bits flying about as he showed and sold 'indestructible' cutting blades. Sure enough, he would slice through a brick then a slab of steel. At $100 a pop, his assistant was having trouble keeping up with all the sales.

Bat Country

Five years ago I drove to Vegas, channelling Hunter S. Thompson (minus the drugs) in a Mustang with the deliriously eccentric John Maizels. Of course we broke down, in the desert, detailed in my Blog at https://juliuslife.blogspot.com/2013/06/usa-trip-that-scarred-me-for-life.html

This time I had another go because I detest the short flight from LAX which features a long and fraught TSA screening, and a long taxi and ground hold. So why not drive? It takes 4.5 hours in normal traffic conditions. But previously I'd arrived and driven to San Diego and found that quite fatiguing straight off the overnight flight from Sydney.

My solution was to check in to the Airport Hilton after my Air NZ flight arrived at 1pm, and have a late lunch or an early dinner, sleep into the night, and drive when I woke. Sure enough I was awake and on the road at 3am. Which is a perfect time to drive to Vegas!

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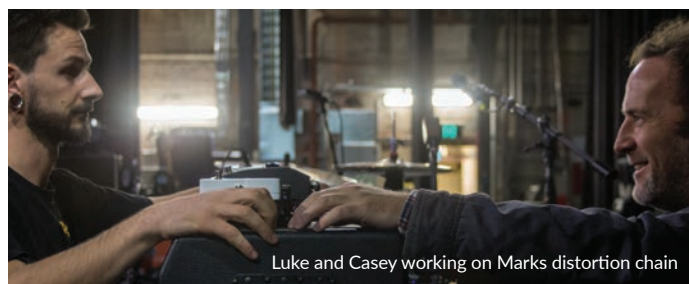**SENNHEISER**

JET GET BORN…
again

Jet remind us what made them one of Australia's most successful rock bands of all time with a killer show

By Cat Strom
Photos: Troy Constable

James 'Oysters' Kilpatrick

Luke and Casey working on Marks distortion chain

Aussie rockers Jet have completed their 15th anniversary national tour in celebration of their 2003 debut album Get Born.

Entitled the Get Re-Born tour, the Sydney show was at the Enmore Theatre where The Vines were support act for a night best described as controlled chaos. This was a gig that went off!

At FOH was James 'Oysters' Kilpatrick on a DiGiCo SD10 with a redundant Waves Extreme Server. James doesn't use any of the DiGiCo processing but every single channel has Waves processing on it to try and emulate the sound of Get Born.

"The drums are all Solid State Logic channel plug-ins, the guitars and vocals are all on Shep Neve 1073 and the keyboards are Abbey Road EMI with analogue drive and distortion," he said. "Everything on it is Waves, such as H Vintage compressors on guitars and bass and I'm only using really the pre on the console, mutes and faders. The rest is made up with Waves C6 multi band compressors that kick in when the band really starts to rock to try and manage the high end from getting out of hand."

"It's a lot different to the type of work I've been doing recently as there are no sequencers or samplers, it's entirely organic. It's really a hands-on, old school mix which I'm really enjoying. It all fits in one layer on the console too so I don't have to change pages!"

James said the mix was entirely about the tone with 'vintage' instruments. Luke Stabb (guitars) and Casey Hilliard (Drums/Keys) are specialist backline techs who meticulously tuned drums and replaced heads, set guitar levels and tones for every different room. This included adding or changing cabinets depending on the size and environment so the backline was always at its optimum sound for the venues they worked in.

"From a backline point of view the key to the overall sound is the blend of clean and overdriven tones," added Luke. "Most of the amps are running loud(ish) but still relatively clean. This contributes to the large sound of the band. The amps are not compressing the sound with distortion. We will swap out amps depending on rooms if they are too loud or bright/dull. There is the occasional use of pedals to push the amps harder."

Lead guitarist Cameron Muncey has two amps, one running clean and the other more distorted. He switches between the two as desired for certain songs but on the whole they both run together. Lead singer Nic Cester has a Selmer Treble and Bass 50 mk1 (1964) amp while keyboard player Louie Macklin's keys are Nord Stage 2 and a Hammond XK-1c.

"The bass has a DI pre and post the pedals as well as a mic," said Luke. "The pre DI is to get a clean sound when the bass fuzz is in use.

Chris Cester's drum kit was a Ludwig Classic Maple with a 22" kick drum and centre tom mount for cowbell, a 13" by 9" mounted tom, a 16" by 16" floor tom and two 14" by 5" Supra-phonic snare drums. Bass player Mark Wilson had two Fender Super Bassman 300 watt bass heads and a Fender Super Bassman 810 speaker cabinet.

As the band have played together for such a long time, James reports that their playing is pretty even and there's not a lot of cueing, just for guitar changes and backing vocal parts.

"As there are a lot of monitors, guitar amps and no IEMs, I do cue the backing vocal mics on and off just to try ease up on the spill a bit," explained James. "I've got it down to 12 control groups, in fact it's set up just like an analogue console so I have two hands on the faders and no automation!"

Rod Matheson

Anthony Petruzio

Rod Matheson ran monitors also with a DiGiCo SD10, using d&b audiotechnik side fill, M2 wedges and subs. However it was not overly loud onstage with the band going for tone over volume. The band like it fat onstage so the subs are usually to fill drums and bass out. A Porter and Davies' Buttkicker was added as part of the drummers' monitors.

"I can honestly say for such a powerful act, I hardly ever noticed the backline or monitors even in the smaller shows. Tones and levels were first rate," said James.

Microphones included Sennheiser e935s on vocals, except for Nic who used a MD 431. Guitars were mic'd with Shure SM57s as they can handle a lot of pressure and are not too bright. A standard Sennheiser kit was deployed on the drums.

JPJ Audio supplied the control package and David Darlington as the tech whilst in-house PAs were used.

Lighting designer Anthony Petruzio had never worked with Jet before this tour however a good rock band is very much his genre so he was in his element.

Recently Anthony started working for TLC Global but was given time off by TLC Global's Dave Taylor to do the tour. Anthony resisted the temptation to load his show up with TLC product although there was some GLP and Portman gear.

"Davey was happy for me to keep touring as we try not to be just

suits selling the products," he said. "He likes that we're using the products and we're in touch with what's going on. At this point, I'm not quite ready to give up touring although I am winding it down as I get older."

The brief was basic; keep it simple and produce an old school rock show without lots of colour - which is exactly the type of show Anthony likes to design and does best. The gear was a mixture of old models and the latest tech wonders. There were 8-way ACLs with PAR36 ACL lamps in them as the band like a lot of tungsten.

"They like that warmth which is why I brought in the Portman P2 Hexalines retro fixtures as well," said Anthony. "I use a lot of CTO and whites in the start of the show, the Get Born artwork is all black and white so I didn't want to put too much colour into at least the first part of the set."

The six Portman P2 Hexalines are placed at a couple of different heights, along with lots of blinders and 4-lites on the ground, the ACL 8-liters in the air as well as a few DWE duets. Primarily used as eye candy, the P2 Hexalines do pack quite a bit of punch especially when all six are on at once.

"I don't know that I'd replace a DWE with one but it does give you that blinder effect and a couple of times I flash them a bit, although mainly I use them in the softer songs with a few chases

across them," commented Anthony. "Basically I just wanted some more tungsten that wasn't ACLs or blinders ... an old school feel in a new school kind of way."

In the air were 16 Martin MAC Viper Profiles, a fixture that Anthony particularly loves saying they are nice and bright, with decent gobos. "However I don't use that many gobos on this show," he said. "They also have a nice zoom range and I always like to have an iris. I'm not much of a beam person, I'd rather iris down a profile spot than have something like a Sharpy."

For wash there were ten Claypaky A.leda B-EYE K10, six at the back and four in front of the amplifiers. Downstage were MAC Auras for side and front light plus another four DWEs for up light.

Eight GLP JCD1 strobes, four at the back and four in front of the cabinets were prominent in the lighting design.

"I use them primarily as a wide angle wash light on this show," said Anthony. "I fell in love with them a year ago when I had them on Airbourne. Again I wanted a wide angle wash light like a Stormy but once I also tried the strobe part I removed all of the Atomics I had on my touring floor package. I use them as strobe and a big bang blinder on this show but mainly as a back wash light. I don't move them too much, in fact there's only one cue in a song where I tilt them. I try not to overuse that but they have nice little effects within their strobe function such as zigzags."

Regular old school Profiles were used for front light as Anthony preferred the warmth of tungsten just to lift up over the top of any side colour or front colour. As Anthony said, nothing is as nice as just two profiles onto somebody.

Control was an MA Lighting MA2 light with Phaseshift Productions supplying the tour, except for Perth.

"It's a rock show, it's nothing hard, just follow what they do," concluded Anthony. "I'm pretty happy with the way it has come up."

Education

In this issue, CX surveys the types of formal education on offer for those seeking to learn about live production - what they teach, how that curriculum is set, and what pathways to employment are provided. It boils down to two flavours – degree courses offered by a variety of private institutions and universities, and the nationally controlled Cert IV and Diploma of Live Production and Technical Services delivered by the vocational training (and occasionally university) sector around Australia.

While the educators interviewed in these pieces were coincidentally all based in Melbourne, their observations apply nationally. A simple web search for the Cert IV or Diploma of Live Production and Technical Services will bring up a list of institutions providing it in your area.

Both the School of Audio Engineering (SAE) and the Australian Institute of Music (AIM) Sydney offices were contacted with a list of questions about any live production training they provide, but both declined to respond.

Deb Hatton, Teacher and Trainer, Lighting, Stage Management, and Production Management units, Production Lighting for Live Events short courses, RMIT.
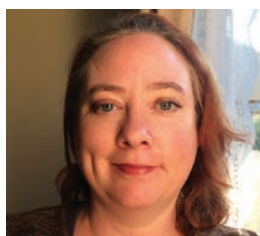
Deb Hatton has an extensive background in lighting, stage management, production management, and AV. Still working in the industry, Deb also teaches production management as part of RMIT's delivery of the Cert IV and Diploma of Live Production and Technical Services.

Job Ready

I am very keen on making my students as job-ready as possible. As well as fulfilling all of the compliance of the course units, I have some absolutes that I drum into them. The first is cable management. Next is comms; headsets and cueing, and communication in the context of live performance. I'm also adamant about using correct stage terminology; Prompt Side and OP, stage right and stage left, upstage and downstage. And then Ohm's Law. They're things that a potential employer needs you to have when you walk in the door. From there, you have to build up other skills. It's tricky to teach 25 adults who are at different levels, but that's the job.

Course Structure

The Cert IV and Diploma of Live Production and Technical Services is a federally mandated training package, and wherever it's delivered it has to have 16 units in it. But there is some variation on which 16 units are chosen and how they're taught. That's why different institutions will have a different 'flavour' to their course, for want of a better word. Part of the job is to translate these units and make them as relevant as possible to actually working in live production.

Content

RMIT have what they call the Program Advisory Committee. They sit in a round table with representatives like my coordinator Rebekha Naim, teaching staff, and interested parties from the industry like Show Technology, MCEC, or Harry the hirer. Everyone offers advice about what should be delivered in the course. But because the units are controlled at a federal level, it can take a couple of years for the course to catch up with any major cultural or technological changes in the industry.

The RMIT live production tehcnical services program teaches lighting, video, projection mapping, and a lot of audio, with live audio a particular focus. We also cover broadcast in the newly finished television studios that the students will soon be doing their practical work in, filming live bands, for example. I teach production management, and I have some background in audio and visual as well, so I can correct students up if they are doing something wrong. And then there's a specific sound production course with no lighting or visual, and a screen and media course.

Pathways to Employment

We see our graduates picked up by the industry pretty quickly. The industry in Melbourne is so prolific that there's a need for new workers. This year, there's a few students that are already working while studying, at places like Gig Power, Staging Connections, and Active Lighting, and events like the Comedy Festival and White Night.

Luke Hill, Head Audio Lecturer, JMC Academy Melbourne.

In addition to his long experience as an educator, **Luke Hill** has been a studio and live engineer for bands including Eskimo Joe, Amity Affliction, and The Drones, as well as contestants from X-Factor and Australia's Got Talent. He has also worked on sound for film and radio for National Geographic and the Southern Cross Austereo Network.

Content

JMC's Audio Engineering and Sound Production degree and diploma have a strong hands-on live sound component, from a basic small café set-up to a big pub gig. We also cover large scale system design and operation to the level of a venue like the Crown Palladium.

Hands-On

Because we're a creative arts school, we're lucky to have a music department and a small auditorium running regular performances, so our audio students set-up and mix those gigs. We also do things off site; at the moment, we're taking the students to Sound City in Spotswood, which is a rehearsal facility with a performance space. We also get our audio students to do production for the JMC performance nights at venues like the Bendigo Hotel, Memo Music Hall, and The Tote.

Core Principles

Students graduating JMC's degree or diploma have a very good understanding of PA system signal flow. They graduate with the ability to spec a PA system for a venue, including putting together all of the documentation required. They have a strong grounding in live mixing, the principles of mixing music, a base understanding of lighting, and elements of production and stage management. We make sure they get practical experience in all of these areas.

Pathways to Employment

In developing our course material, we consult with industry, and many of our lecturers also work for organisations like the MCEC, Mediatec, and Staging Connections. I've seen a lot of our graduates start work at the MCEC, Staging Connections, Audio Visual Dynamics, and some of the smaller production companies around Melbourne. JMC has built a good reputation with the industry in Melbourne, which greatly benefits our graduates.

Chris Dickie, Box Hill Institute.

Chris Dickie is an ARIA award-winning producer and engineer, with a long list of international album production and recording credits.

Content

I teach live sound and studio recording techniques for Box Hill Institutes' Bachelor of Sound Production, a three year degree with sound production as its main focus. The live sound component includes analogue and digital audio, microphone selection and operation, wireless microphones, and the set-up and operation of PAs.

Hands-On

Box Hill has a music performance stream and it is to the benefit of both the music performers and the live sound students that we run a weekly simulated workplace where the students provide live sound reinforcement for the performance groups. It runs in a similar way to how a walk-in might work at live venues around Melbourne. We also have a small PA that students use for lunchtime performances at a variety of locations between the Box Hill, City, and Lilydale campuses.

The students also have the opportunity to work on internal events. Sometimes they're like a corporate event, sometimes graduation and fashion events, sometimes local school big bands in Box Hill's Fountain restaurant, or Open Day events.

The end-of-year event sees the students transform what would

normally be an industrial training facility into a three-day fashion and musical theatre event, working alongside the industry professionals who are supplying the equipment. The students spec and plan the event and run all aspects of stage management, sound, and lighting.

Vocational Placement

We encourage external work placement. Vocational placement gives the students the opportunity to see what is expected of them in the workplace. They also have the opportunity to begin building a network, and they often find themselves working with crew who are ex-Box Hill students.

Facilities

Our live sound equipment includes a DiGiCo SD11, Avid Venue Profile with FOH and Stage Racks, Allen & Heath QU24, Soundcraft GB4, Midas Venice plus a few smaller analogue desks, two Yamaha O1V96s (one fitted with a Dante card), Sennheiser wireless mics and IEMs, a variety of self-powered speaker boxes and subs, and a variety of passive boxes and amps. Our new performance venue, recording studio complex, and rehearsal facilities currently under construction will be running a d&b audiotechnik line array installed by JPJ and a Midas M32 desk, as well as a nice new lighting rig.

Our recording studios are a partnership with Sing Sing Studios. Studio A will have the SSL K Series 72 input desk, a large performance space with three iso booths, 5.1 Quested monitoring, 5.1 Genelec monitoring, and a lot of beautiful analogue mic pres, signal processing, and effects. Studio B will be a 32 input API 1608, Genelec stereo monitoring, three room recording space, and an excellent selection of analogue mic pres, signal processing, and effects. Studio C is an AVID S6 post production and foley studio, although it can easily record music projects. Our three production suites include one Focusrite RED4 pre that can connect via Dante to pretty much anywhere in the facility. They also have a selection of vintage and new synths and drum machines, Sennheiser microphone kits, UAD Apollo interfaces and a smaller selection of beautiful analogue mic pres and signal processing.

Jamie Henson, Sessional Lecturer - Live Production and Technical Services, Costume for Theatre Arts and Specialist Makeup, Melbourne Polytechnic.

Over four decades, Jamie Henson has worked in almost every aspect of live theatre and production, including as an actor, technician, stage manager, lighting designer, technical coordinator, operations manager, usher, FOH manager, production manager, and producer.

Melbourne Polytechnic run several courses in performing and dramatic arts, including the Diploma of Live Production and Technical Services. They have several cohorts because there are two electives that also cover costume for performance, with specialist makeup based in the film and TV course.

MELBOURNE POLYTECHNIC

Facilities

Our facilities include the 117 seat David Williamson Theatre, running over 200 lighting fixtures including LEDs and movers, and seven different lighting desks. FOH sound is through an Allen & Heath digital desk with other desks for foldback and seven Mac laptops for QLab playback. The vision system incorporates three Canon cameras, Blackmagic ATEM mixer and six LCD projectors. We use this venue for sound and music performance platforms, which are a collaboration with the Cert IV to Advanced Diploma courses in Music. David Williamson Two is a 99-seat space downstairs running between 36 and 96 dimmers. We have an area in another building, which has patching, 24 dimmers, and a fixed grid at 4.2 meters, which we use for sound and music performance platforms, shows and projects. It's a sound-proofed studio, which has simple lighting and sound control. We're very well resourced with rostrums, drapery, and truss. We've got our own workshop for demonstrating rigging, tying knots and applying slings to truss on chain blocks, a scenery workshop with portable battery drills, drill presses, drop saws, and hand tools, and a paint shop.

Content

We're bound by the national code in the elements and criteria we deliver for each unit. Every year we must validate two units from the Diploma. That process includes somebody from industry, the person who's delivering the unit, a mediator, and a note taker. What we want to hear from industry is if the unit content is still valid. We can't change the elements in it, but we can report back to the national body IBSS that we want to rescope the course. We regularly get feedback from companies like Harry the hirer, Resolution X, and Moving Light Productions, and Victorian Opera, with our vocational secondments running in September.

What industry doesn't usually understand is that we're set by a national code for the unit content, and we're also limited by hours for delivery. At the moment we're delivering the Diploma 25 hours per week, in 34 weeks over a year. The time period is tight. Roughly it's two and half-hours to three hours per unit a week. Some of the units are only one semester. Industry wants our students to have hands-on training, and we do it with equipment as much as possible. We have one counter-weight fly-line, and I would like a full system, but that's resources. I have in past years gone into the Comedy Theatre and Athenaeum Theatre to show classes how to use a complete system.

Vocational Placement

We set up two weeks of vocational placement for our students with companies like Resolution X, Harry the hirer, Moving Light Productions, Lighting Lab, Imported Theatre Fabrics, and Scenic Studios. Dates aligning with their workload to do this are the big problem; we don't send our students out at all during the semester. We only have 34 weeks of contact, and it's quite intensive, so vocational placement happens during the holidays. Some students choose to work on the Adelaide Festival or the Fringe Festival, but what they miss from the course is equally as valuable as what they learn on-the-job.

Pathways to Employment

What we don't do is say to our students 'You do these units, and you'll be employed', because it's impossible to say they will get employment. These courses help you – they outline an educational and career pathway. Some students want to go and be lighting or set designers. Some go to the Victorian College of the Arts, get their BA, and do four years as an LD's assistant. Some go and start working the bump-ins and bump-outs. Some go into animation, or company management.

Next semester I'm teaching a Diploma of Events with three units of technical. The industry is not just live production and technical services. Some of our production students go on to work on festivals, which give them a broader understanding of what the entertainment industry is about. It's not all proscenium arch theatres and theatre companies. There's festivals, community events, opening and closing ceremonies, and sport. They've got to think how they can apply their audio, lighting, and visual skills in a broader variety of contexts.

By Julius Grafton

Formal training is acronym heavy - Why 'on-the-job' training is so popular

Training for the technical production industry remains predominantly 'on the job', twenty years after a push to get formal vocational education training (VET) into the industry. It started with the CUE98 training package, which arrived fashionably late in 1999. A sort of gold rush saw hardy optimists (like me) set up accredited colleges.

These Registered Training Organisations (RTOs) were effectively mini TAFEs, operating to the same standards. Unlike higher education diploma and degree courses at Universities, VET courses are 'competency based', a reassuring notion that requires any graduate holding a Certificate Two, Three or Four qualification be 'competent' at all elements and units in the course.

In the opening years of last decade, some progress was made – some venues became RTOs and some private operators emerged. But then the Australian Government overreached and opened up vocational training as part of the senior high school curriculum. They allowed the COE03 Certificate Three to be trained in schools and the ensuing wave of partially or poorly trained school graduates smashed industry confidence in training.

It also decimated course sales at RTOs, so yes - I do have a bias here!

There are a handful of credible high school trainers but most are well intentioned, overworked music teachers who have been seconded to running a Certificate Three course over years 11 and 12. Somehow most students were assessed as competent (by their trainer-teacher) and graduated with the qualification. They then presented themselves for employment and usually proved deficient in the eyes of older industry folk who often have a mistrust of formal training.

Meanwhile the smarter college operators, like the School of Audio Engineering (SAE) and JMC Academy quickly realised that delivering higher education qualifications was considerably easier than meeting the compliance nightmare of VET. The higher education degrees were also longer and more lucrative. They were eligible for Government student loans, so the student often didn't think about cost.

A quick look at the six core units of the current applicable Certificate Three (CUA30415 - Certificate III in Live Production and Services) illustrates the challenges of VET training:

- BSBWOR301: Organise personal work priorities and development
- CPCCOHS1001A: Work safely in the construction industry
- CUAIND301: Work effectively in the creative arts industry
- CUAWHS302: Apply work health and safety practices
- CUAPPR304: Participate in collaborative creative projects
- SITXCCS303: Provide service to customers

Can you prove this?
How long is a piece of string?

From the assessment requirements component called 'Knowledge Evidence' for the core unit CUAIND301, 'Work effectively in the creative arts industry':

'To complete the unit requirements the individual must demonstrate well-developed knowledge of:

- relationships between different sectors of the creative arts industry
- terminology associated with own industry sector
- issues of appropriate behaviour and ethics as they apply to key work areas
- key roles and responsibilities in own industry sector
- sources of industry information and ways of maintaining current industry knowledge
- describe key features of awards and conditions of employment for own work area'.

Then: 'describe key aspects of the following:

- consequences of infringing copyright
- how copyright is enforced
- organisations that deal with copyright
- copyright ownership and protection.'

But wait, you also need to get a handle on these:

- 'legal issues that affect negotiations and contracts
- nature, role and functions of unions and employer associations
- rights and responsibilities of employers and employees
- work health and safety (WHS) requirements relevant to own work context
- current and emerging technologies used in own industry sector.'

These are the six core units of the fifteen total units in the qualification. The other units include all kinds of things with at least one 'basic' audio or lighting unit showing up, depending how the RTO structures the course. The problem is the sheer volume of unhelpful material that a trainee must wade through. See the breakout box for an example of this.

In higher education, a University or an accredited college can build a course with less dross and allow a student (note; a trainee is a VET customer, a student is a higher education customer) a pass if they score greater than 50%. They can be graded, and the top performers get a distinction. Over at a VET college the trainee must have been assessed for EVERYTHING and found 'competent'. There is no grading – and trainees quickly come to resent being lumped together in a 'one size fits all' regime.

Then in 2008 the Australian Government introduced VET Fee Help, opening up student loans for students at TAFEs and RTOs. The result was that course fees started to rise since students were less concerned about cost. The next result was that the RTOs discovered two things: amazingly there seemed to be little control over numbers and costs, and the scheme put a down payment into the RTO bank account for every new signup.

Suddenly trainee enrolments at a lot of RTOs went through the roof, some of those signed did not know what they were signing for and did not attend any training classes. Corruption took off like wildfire and within a few years the scheme was out of control.

Court cases since have exposed the scale of the disaster which has cost the taxpayer some billions of dollars in fraudulent payments to dishonest RTO proprietors. (I predicted the scheme would produce less motivated students and didn't participate – part of the reason I closed my RTO college in 2010).

VET FEE HELP diminished confidence in RTOs, and by association TAFEs. Which leads us full circle, back to 'on the job' training. It should be noted there are a few employer-based RTOs out there, most notably Staging Connections where they have fused together a credible traineeship program based in part around the Certificate Three.

On the job training works well when mentor staff share knowledge with new staff. With improving workplace cultures and generally better educated school leavers, on-the-job is more effective than ever, albeit with skills gaps and lack of assessment.

The old 'train the trainer' qualification, TAE40110 - Certificate IV in Training and Assessment is a great tool for anyone providing on the job training because it is (in part) intended for this purpose. But again, like everything in the confusing acronym soup of VET training, you need to enrol in a SUITABLE course. The best TAE40110 course is one that is NOT correspondence – you need to be in a group – and one that is neither the shortest or the longest on offer.

No two courses are the same. Which makes the whole notion of a nation of 'competent' qualified and consistently trained people into some kind of utopian fantasy, doesn't it?

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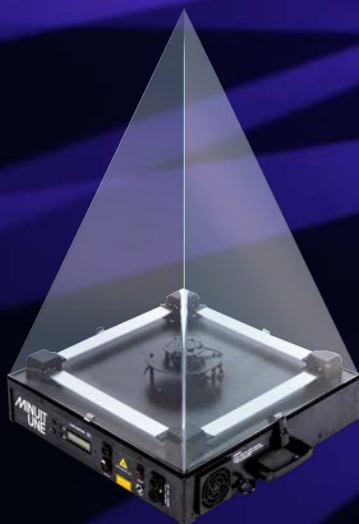
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Portman P1

By Simon Byrne

Safe Data at Live Events

Data storage plays a huge part in live events in this modern world. From digital audio desks to processors, lighting control, recorders, video processing, and display. In some way they all use templates, media, and complex configurations that are stored digitally.

This brings enormous power and creativity to our productions, but equally expose us to serious consequences if our data is lost, so it is worthwhile taking some time to look at the technologies underlying data storage, as well as some strategies to make sure the show does go on.

We use USB memory sticks a lot as nearly everything has a port for one which lets you save shows, presets, firmware, and so on. There are however, lots of counterfeit USB sticks out there. These counterfeit sticks use much cheaper, lower quality components, quite often have less memory than they are supposed to, and are obviously more likely to fail.

Name brand USB sticks from reputable dealers is the only way to avoid the counterfeits. Even then, some find their way into the reputable retail channels. Some audio desks are fussy as to the USB sticks that they'll work with, (often because they use type 2 USB ports) so it is important to find ones that work with your gear. Best practice is to format the memory stick in the device that is being used. That is, in the desk, not your laptop.
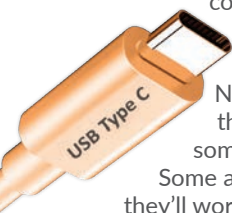
	Maximum Transfer Rate	PCM Audio tracks at 24 bit, 96Khz	Apple Pro Res HD 422 video stream
USB 1.1	12 Mbit/s	5	No chance
USB 2.0	480 Mbit/s	208	2
USB 3.0	5 Gbit/s	2170	22
USB 3.1	10 Gbit/s	4340	45
USB 3.2	20 Gbit/s	8680	90

Only buy as big as you need. Drives being cheap, the temptation is to buy bigger but this increases the risk of failure. The higher the data density, the harder it is to keep reliable so larger drives have higher failure rates.

What about external drives? Hard Disk Drive (Spinning), or Solid State Drive? It depends.

Hard disk drives are proven mechanical storage devices which are cheaper with much more capacity. But, about 2 - 4% of hard disk drives fail per year. I'm betting that in our industry, the failure rate would have to be higher because of the tough treatment touring equipment suffers.

Solid State Drives are more expensive and offer less capacity, but are faster and extremely reliable in harsh environments because they have no moving parts to fail. Well under 1% of SSDs fail per year and they will survive extreme cold and heat as well as being dropped. This makes them the ideal solution for a touring environment.

I've replaced all the spinning HDDs in my show laptops with SSDs. In my office though, I use still HDDs (I've got about 200!) because low price with greater capacity are more important, and my office is not a harsh environment.

Ports, Connectors and Speed

USB (Universal Serial Bus), is by far the most common port type for external drives and was developed to define cables, connectors and protocols for connection, communication, and power supply between personal computers and other devices.

As you can see from the table, version 2, currently the most common, can transfer up to 480 Mbit per second (or 60 megabytes) which is respectable, but version 3 which is coming out now, can transfer up to 5 Gbits per second (625 megabytes) and version 3.1 and 3.2 even faster.

Speed really becomes important when moving large files or recording multitrack audio. With version 3 onwards, you are looking at serious transfer rates indeed.

As well as the USB version numbers, there are connector types too. Connector Type A is the bulk standard that memory sticks and most computers use. USB version 3 uses these as well, however they will be blue in colour.

Prior to version 3, USB was only a unidirectional interface. By that I mean it could only be physically connected in one way which is why you never found a cable with Type A connectors on both ends. Hence a type B or C connector is always on the peripheral.

Version 3 Type A connectors are backwards compatible with the older connector versions but you can recognise them as they should be blue, plus they have an extra 5 pins in the back of the plug shell. The Version 3 Type Bs which are also blue, are designed so that they cannot be plugged into a version 2 port, but a version 2, Type B cable, can be plugged into a version 3, Type B port.

I do hope I have not lost you!

Then there is USB port Type C! This is the new kid on the block and we'll be seeing them everywhere.

For the first time, the cables have the same connector on both ends and they can rotate. No more inserting it in the wrong way! With USB 3.1 and a Type C connector, the combination has a top speed of 10Gbps and can deliver a power output of up to 20 volts at 5 amps (a massive 100watts).

Another benefit to the Type C connector is that it can also be used with Intel's Thunderbolt technology to deliver a huge 40 Gbit per second (5 gigabytes). Apples latest Macbook Pros have Type C connectors which are used for USB 3.1, Thunderbolt 3, charging and support for two 4k monitors. Quite the little connector!

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Data Backup

Irrespective of the underlying technology, all drives will fail over time. Harsh treatment aside, if a drive is going to fail, it will usually do it very early in its life, or after a very long time. What I am saying is that problems either show themselves early, or will be as a result of significant use and wear. Consequently, a good safe life for a drive in a professional environment seems to be about three years. After three years, replace them.

The internet went nuts in 2014 when it was reported that DJ David Guetta had to cancel his world tour because he lost his memory stick containing his entire set! A great story, but it was not true (check your facts people). But it does highlight the importance of having a good backup strategy that securely backs your data up, as well as being available when you need it.

3 - 2 - 1

All USB Sticks and drives can fail, be overwritten accidentally, be lost, or get stolen, so you need to have your data backed up. Use the 3 - 2 - 1 strategy - three copies, in two locations, one of which is offsite.

The 3 - 2 - 1 Back Up Strategy

3 Keep at least three copies of your data. That includes the original copy and two backups.

2 Keep the backed-up data on two different storage devices. If two copies of the data are on a single device and that device fails, you've lost them both.

Therefore, if you have data stored on an internal hard drive, make sure you have a secondary storage type, such as external HDD or removable storage, or the cloud. For desk files that are on USB sticks, copy them onto your laptop.

1 Keep at least one copy of the data somewhere else. Even if you have two copies on two separate storage types but both are stored in, say, your backpack, a theft would wipe out both of them. Keep a third copy in a separate location like your hotel room or the cloud.

When flying, I have one copy in my hand luggage, and one in the hold. That way if either gets lost, I'm still okay.

Test the backups thoroughly; you'll need to be able to rely on them one day.

For the 3 - 2 - 1 strategy to work, it actually has to be done. But I subscribe to the rule that if it requires effort, I'm unlikely to bother which is a bad mistake.

Therefore paying for a fully automatic cloud-based backup solution is money well spent. I use Carbonite. It sits and runs in the background and quietly backs up my files to the cloud when connected to the internet.

When I get back into my office, I use Apple's Time Machine to do the second local backup. Combined with Carbonite for the offsite backup, I have fully automated 3 - 2 - 1.

Naming Show Files

A good approach for naming and saving files is essential so that you can find them quickly in the future.

Incremental version saves (V1, V2, V3 and so on) means that you can revert back to an earlier version which sometimes can be useful. Basically, when I make a significant change to a file, I'll save it as a new version.

I name files with this format:

Client_ YearMonthDay_ Venue_Desk Type_ Save Version

so a real example might be:

Crazy_Hamsters_20180617_ICC_CL5_V5.CLF

Looking at the filename, I know it was the Crazy Hamsters, on the 17th June 2018, at ICC using a Yamaha CL5 and that particular file is fifth version.

The above format makes it really easy to find files at a later time because you find that they display in order of firstly the client, then the date, then in order of venue, and assuming you don't change desks on a particular day, version number.

Do not use spaces, because they are not recognised by some software. Instead use underscores (file_name).

Firmware Installs

Never, ever, install new firmware in equipment on show days unless you have no choice.

Firmware updates have a habit of not going as smoothly as they should. Leave that for a day when you have time to carefully update your widgets and solve whatever problems arise.

And if you are in real trouble...

HDD failure with no backups? A pretty dire situation, and you only have yourself to blame. But there is a piece of software called SpinRite that might just get you out of trouble.

SpinRite is a computer program for scanning magnetic data storage devices and recovering data from them and refreshing their surfaces. It analyses their contents and refreshes the magnetic disk surfaces enough to recover most, if not all the user data.

It can literally take weeks but I have recovered data from desperate client's HDDs after they've been to the so-called data recovery professionals who claim it could not be done.

Once you are setup, safe data management requires little effort and it will ensure that you don't have a lost data catastrophe in the future.

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You're Always Mixing

By Andy Stewart

You may not even realise it, but when you call yourself a recording engineer – or more importantly, think that's all you are – your might be selling yourself short. You're also a mix engineer by default too, whether you like it or not. Why? Because you're always mixing.

It's seems like an odd statement to make – 'you're always mixing.' Surely there are heaps of roles in the audio industry in and around the process of audio production that don't involve mixing. Don't some of us record, edit and restore audio, overdub and so on, but not mix?

Well, sure, in a way we do. But there's a dangerous distinction being drawn here when engineering roles are discussed as involving only one specific technical process, like say recording, as if mixing is somehow an entirely separate process that only ever follows afterwards. It also infers that judgment calls in and around the recording process – whether a take was good or bad, whether a certain sound is right for its context, and so on – somehow occur in isolation, as if their mixing context is irrelevant for now. That's almost never the case.

Crucially, mixing also occurs during the production process, often dozens of times and in countless ways for a variety of specific purposes: headphone mixes (paramount), rough mixes, overdubbing mixes, test mixes, mixes for editing etc. To say that it's somehow a separate process to an album's recording, or somehow exclusive to a club of dudes that don't get their hands dirty in tracking sessions, is a gross over-simplification of what mixing is all about, and a semantic demarcation that can bite you on the proverbial when you least expect it.

1 The Perils of Mixing Rough

A perfect example of this occurred to me only the other day. There I was tracking on my own, adding a couple of new parts to a song. After a few hours of recording, and few more editing, I was finally happy enough with the parts that I quickly sent off a rough 'mix' to the client, to get her up to speed with where the song was now at.

To give this example a little more context, I'd played drums on about six other songs on the album, and of all the performances this was the one I was most happy with.

I was shocked then, the next day, to discover that the drums overdub had gone down badly with my client – like a lead balloon, to be specific.

'We're going to have to ditch them from the track, I think,' was her polite way of saying she didn't like them very much (or worse).

'How is that even possible?' I thought to myself, as I read the email over a heart-starting coffee. I was sure she was going to love these drums. What had gone wrong?

I re-read the email, trying to imagine what it was that could have specifically engendered such a reaction. Then I called up the track and listened to the previous day's performance.

Weirdly, there seemed to be nothing inappropriate about it. (Sometimes you wake up the day after a tracking session, listen to your performances and gasp in horror – we've all had days like that. This was not one of those days.)

'They're fine,' I thought to myself. 'What can she be thinking?'

As it turned out, the newly overdubbed drums were just way too loud in the rough mix I'd sent, and that carelessness on my part had thrown my client for a loop. The performance itself was okay; the problem was that the drums were just too loud for her to be able to properly gauge their musical role. I should have placed them in a more approximate and sympathetic context before I sent her the track. I kicked myself for having been so stupid. I was in such a rush to get the tracking over the line that I shot a mix from the hip without paying it much attention. As is so common when you record overdubs, the thing you record last is always the hardest to mix, and invariably it's too loud because it's been loud in headphones and you've grown acclimatised to that excessive volume.

When someone hears a new overdub for the first time in a poorly mixed context – particularly when they weren't around to witness the performance themselves – often the natural instinct is to take a dislike to this new musical element... which is precisely what happened here.

2 The Levels They're Always A-changin'

For almost any audio production – but certainly for music production more specifically – mixing is a constant process of re-establishing levels: putting an overdubbed instrument into a musician's headphone mix at a level best serving them at the time, and later dropping this level by 10 or sometimes even 20dB! This radically shifting mixing focus is an art-form unto itself, sometimes involving all the instruments, sometimes only a handful, sometimes with the newest drenched in a hall reverb, and in the final mix, dry as powder. It's all about establishing the right mix for each different occasion, never assuming that the one you setup last time somehow applies to your new circumstances.

This is one of the specific reasons why a 'mix engineer' is sometimes called in to land a project. Because they're not the producer or tracking engineer – namely someone new to the production – they've not been privy to all the different production mixes along the way, making their perspective 'fresh' and unbiased. That's the theory at least. Sometimes hearing a track mixed 50 different ways over the course of 12 months can do an engineer's head in, making their production of a final mix difficult to say the least.

Or not... it depends entirely on your circumstances. Other engineers find this background work vital to the production of a great final mix. Indeed, for some, this in-progress mixing constitutes half the work already done. There's no point doing it all again if it already sounds good, is there?

3 Editing Your Way Onto The Rocks

Another example of how crucial mixing can be halfway through a production's timeline is during an editing session of a new overdub or two. Sometimes an engineer may decide to edit the new parts with several of the other instruments muted, allowing them to hear timing and pitch with greater clarity (maybe the overdubs were recorded this way too, who knows). Maybe the engineer just goes with the last headphone mix he or she established in the DAW session... sounds like a plan.

Problem is, when you do this you may discover that, upon un-muting all the other tracks, the timing of your editing work and/or the decisions you made around which performances were best, suddenly seems questionable again now that the full instrumentation has been restored to the mix bus. Here again, mixing is crucial because with half the track muted or playing at the wrong level, your perspective can be thrown out of whack.

4 Highly Developed Immunity

There are countless circumstances where a mix is required (often at breakneck speed), and for every one of these situations, the right one needs to be established. The important thing to understand about most of these different mixes is that they can impact upon others in ways that you, the engineer, have a highly developed immunity against. You may find it easy to set aside any issues associated with a rough (sometimes very rough) mix in your own brain (like I did with the overdubbed drums) but for others less involved in the more technical side of the process, this may be far more difficult to do.

The obvious example of this is a headphone mix for a musician (assuming it's not you). A great headphone mix can make or break an artist's performance, but for the engineer there may be no real appreciation of its impact. It's important therefore to remember that for a musician, a headphone mix sounds different than it does to the engineer, even when you're monitoring the exact same mix. The musician experiences things like latency, volume and pitch in ways you simply cannot appreciate from your perspective. So be mindful of this, and vigilant against their adverse influence – even if there's a problem with a musician's headphone mix, they may not be able to articulate what's wrong.

Very few engineers I know mix exclusively; the rest of us spread our skills wider. But make no mistake: we're all mix engineers. So embrace the role, improve your skills, and never assume mixing is separate from the other roles you play.

<<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>>

Vera Blue

By Cat Strom

Vera Blue, aka Celia Pavey, is one of Australia's most promising emerging talents. Following the arrival of her debut single 'Hold' three short years ago, Vera Blue has released an EP 'Fingertips' and her first full-length album 'Perennial', and also featured on tracks with Illy, Slumberjack and PNAU.

In addition to her recording success, Blue has also hit the road for two national tours that sold-out numerous shows, and played festivals including Curveball and Groovin the Moo.

With her most recent national tour – 'Lady Powers' – Vera Blue has, for the first time, been able to incorporate a sizeable production into her show. We spoke to Production Designer Matt Smith of Colourblind and Video Designer Rachael Johnston of Strictly Lowdown about the tour.

"One of the initial creative concepts we developed was to create a separation between Vera Blue and her band on stage. We decided to place the band quite high on a 1.5m high x 8m wide riser with a LED façade, to create silhouettes of Vera Blue," Matt explains. "She loved that concept despite initial concerns that there may be too much

distance between her and the band. It worked really well."

With such an expanse of video, LD Nick Beachen had to be extra careful with fixture placement so, as with many of Colourblind's designs, it was a clean, simple and symmetrical set up.

Matt's initial plan was to have one wide screen behind the band as a parallel to Vera Blue, but opted for three columns of LED screens behind the band as a clever and more cost-effective solution. Eight ladders between the screens formed four frames, each containing two GLP impression X4 LED washes and two SGM X5 strobes. A line of seven GLP X4 Bar 20 fixtures were situated on the downstage edge, mirrored by seven more on the band riser.

"I love GLP products and I use them as much as possible," Matt says. "The X4 washes and X4 bars are both

exceptional units, I've been putting them on everything for the last 18 months including current projects with Rüfüs, Du Sol and Flight Facilities. As well as being great products, I also chose GLP gear for consistency; when you take all the fixtures to magenta, it's all the same. There are a couple of points in the show where we wanted a consistent, big-colour look."

Eight Martin MAC Vipers were rigged overhead as the workhorse fixture and Colourblind were fortunate enough to secure the first six Robe MegaPointes in Australia thanks to Jands.

"They are an excellent fixture," Nick said. "I'm not usually a fan of hybrid fixtures as a lot of the time they are doing three things averagely rather than one thing really well. However, I love the MegaPointe. I mostly used them as a spot because we had the eight MAC Vipers overhead so for the most part they were trying to match what the MAC Vipers were doing, which they did very well. They have really good globes, zoom and prisms plus the colours are very nice, rich and saturated. I found the CMY flags in the MegaPointes were much, much faster than the MAC Vipers overhead. There were a couple of points in the show where I had them down to a beam look and they did that exceptionally well, I'll definitely be using them again soon!"

They show is completely time-coded on a MA2 light, with time code fed from the playback system by both a Green Hippo Hippotizer and the MA.

Matt has collaborated with video artist Rachael Johnston on various projects since 2003, when they both worked with Brisbane's Family nightclub, so there is an established level of trust that their lighting and video work will be complementary.

The downstage riser screen is a 7m wide by 1.5m high Dicolor M480, which covers most of the riser and is edged in black, while the three back screens, also Dicolor M480, are 2m high by 1m wide.

Rachael describes the show as being super fun to work on, adding that she was given a lot of creative freedom. "I came up with most of the creative ideas and Vera Blue just liked all of them. It's unusual for an artist to like ideas straight away," she laughs. "I got my inspiration from her music, lyrics and visuals – for example her Instagram feed features many flowers, so I incorporated a flower motif into the visuals."

Rachael was excited to engage in some film work for this

project, as a counterpoint to the EDM-type visuals that she's been used to. "So, we did a film shoot with Vera Blue, who is very striking," says Rachael. "One visual that ended up being a favourite of mine and Matt's was a set of coloured ribbons tied to a fan and filmed in slow motion with some added post effects... it was so simple, yet extremely effective."

Although Rachael often operates video, everything is edited really tightly for timecode. It was a huge job given that she assembled thirteen songs' worth of content, a lot to achieve on a modest budget. "There were a few moments of strobing so it was really important that the video was exactly in time which we were able to achieve with ease."

Content was run via a Green Hippo Hippotizer, Colourblind's media server of choice.

CREDITS

Production Design: Matthew Smith, Colourblind

Touring Lighting Director: Nick Beachen, Colourblind

Lighting Technician: Nathaniel Collins, Novatech

Vendors: Novatech, NexStage

Photos: James Hughes

Audio Control: 8th Day

Audio: James Livingston

Monitors: James Luscomb

Rachael Johnston
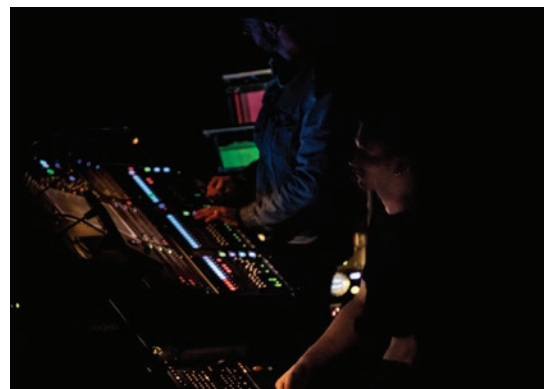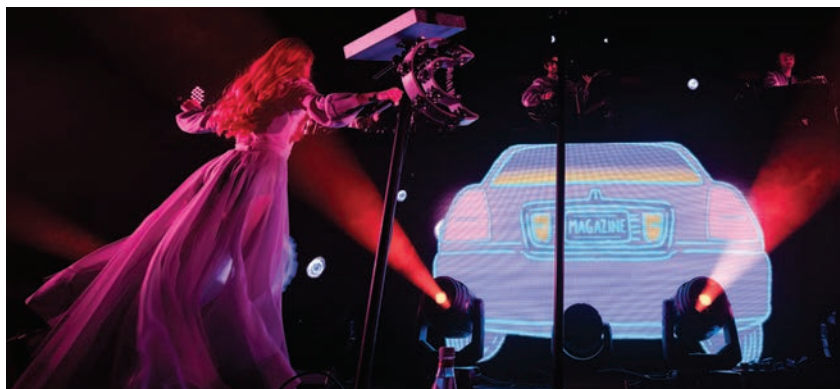
How to: **Add Third Party Dante Devices into Symetrix Systems**

Proudly presented by **Symetrix**

The purpose of this 'How To' guide is to provide instruction on how to add third-party Dante devices to the User Library of Symetrix Composer, leveraging the industry leading native integration of Dante and AES67 technology from Audinate.

Symetrix Composer contains a list of supported third-party Dante devices. When these supported devices are added to a site file, Composer can create transmit/receive subscriptions as well as provide control for some devices.

The User Library is located in the Third-party Dante Devices section of the Toolkit in Device View. Any third-party Dante device can be added to the User Library. Once a device is added to the User Library, Composer will treat it as a supported third-party Dante device.

There are two methods to add a third-party Dante device to the User Library:

» Browse Dante Network (this walkthrough)

» Import a prepared XML File

Browse Dante Network

Here are the instructions to add a third-party Dante device to the User Library by browsing the Dante network:

(This example uses a Radius AEC, an AtlasIED POE Dante Amplifier and a Shure MXA910 Ceiling Microphone)

1. From the Toolkit, add a Radius AEC to the Site View page.

2. Next from the Toolkit, expand Third-party Dante Devices.

3. Expand the User Library and add a New Dante Device to the Site View page.

» The Dante Device User Library Manager window will open.
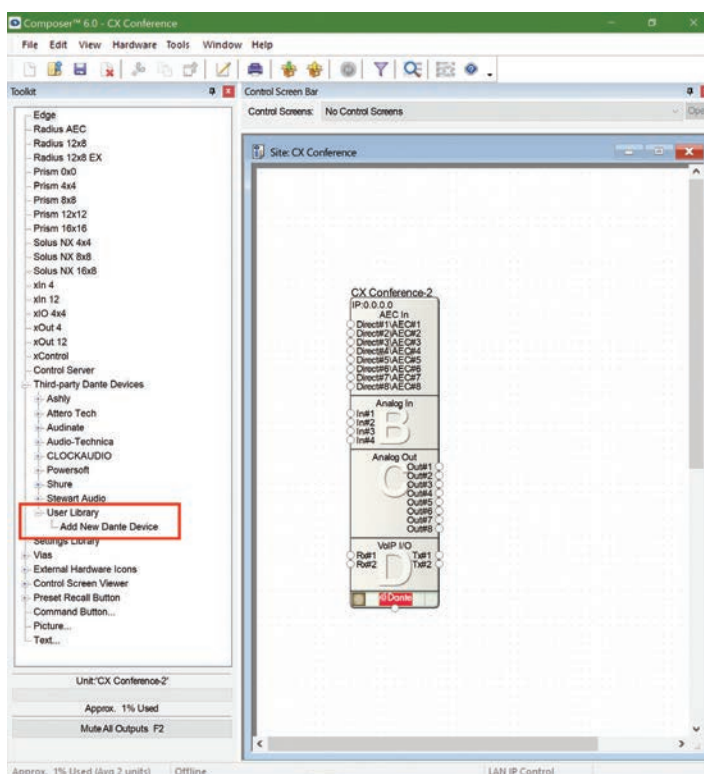
4. Click the "Browse Network" button.

5. The Locate Hardware window will open and display all available Dante devices on that network.
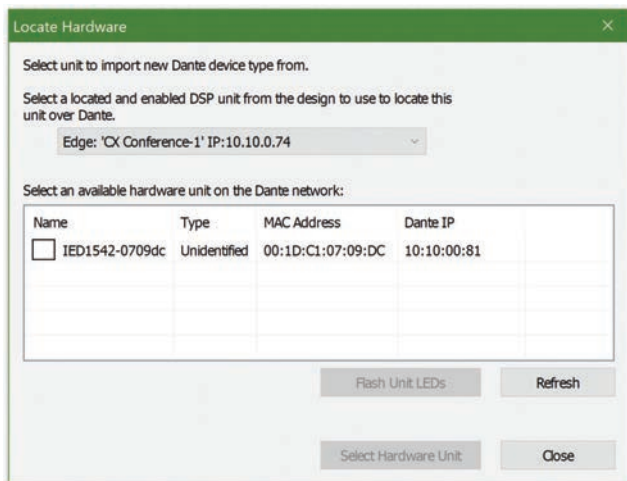
6. Select the desired Dante device, then click the "Select Hardware Unit" button.
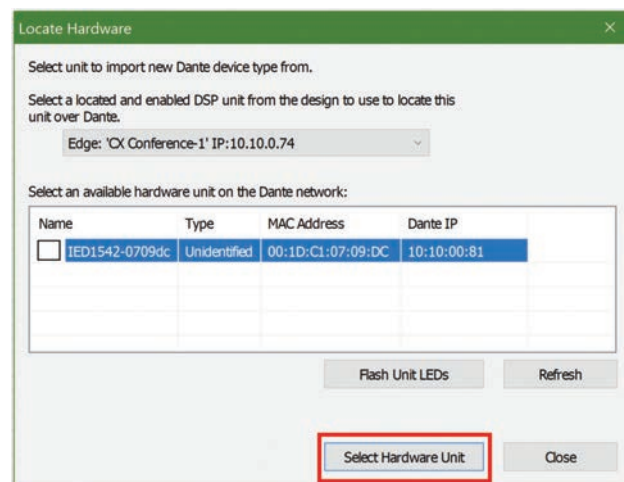
7. The Dante Device User Library Manager will now list that Dante device. Select the desired Dante device and click the "Select Device Type" button. This will add the device to the site view page.
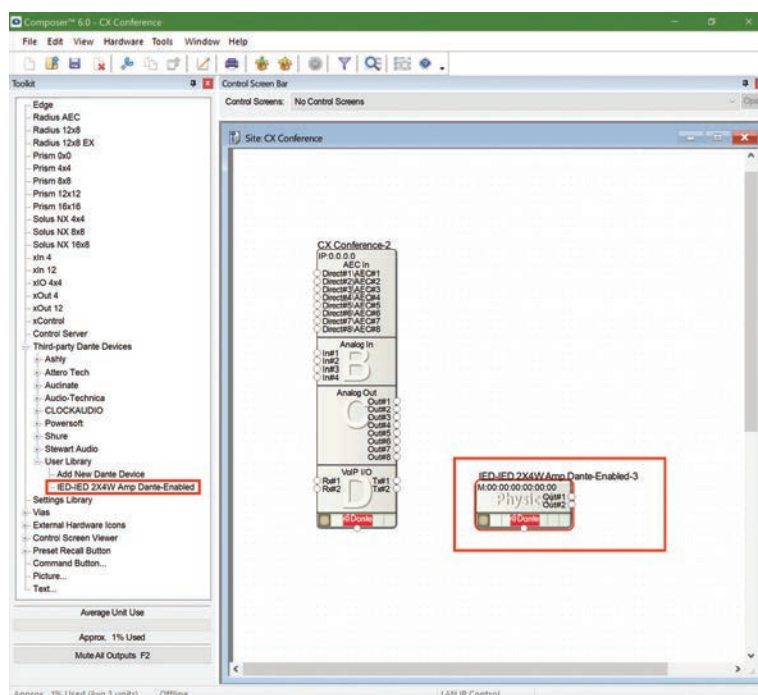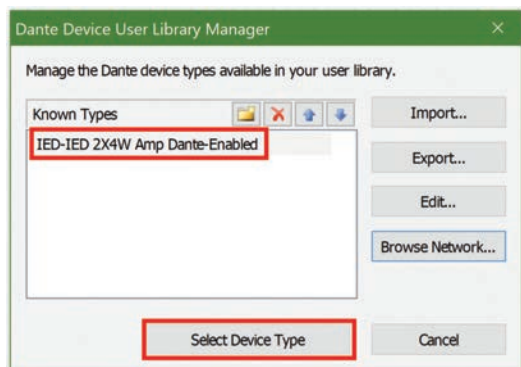
8. You can also add pre loaded 3rd Party elements, like the Shure MXA910 Ceiling Microphone System which in this case allows a far greater interaction with the 3rd party device including launching its proprietary software.
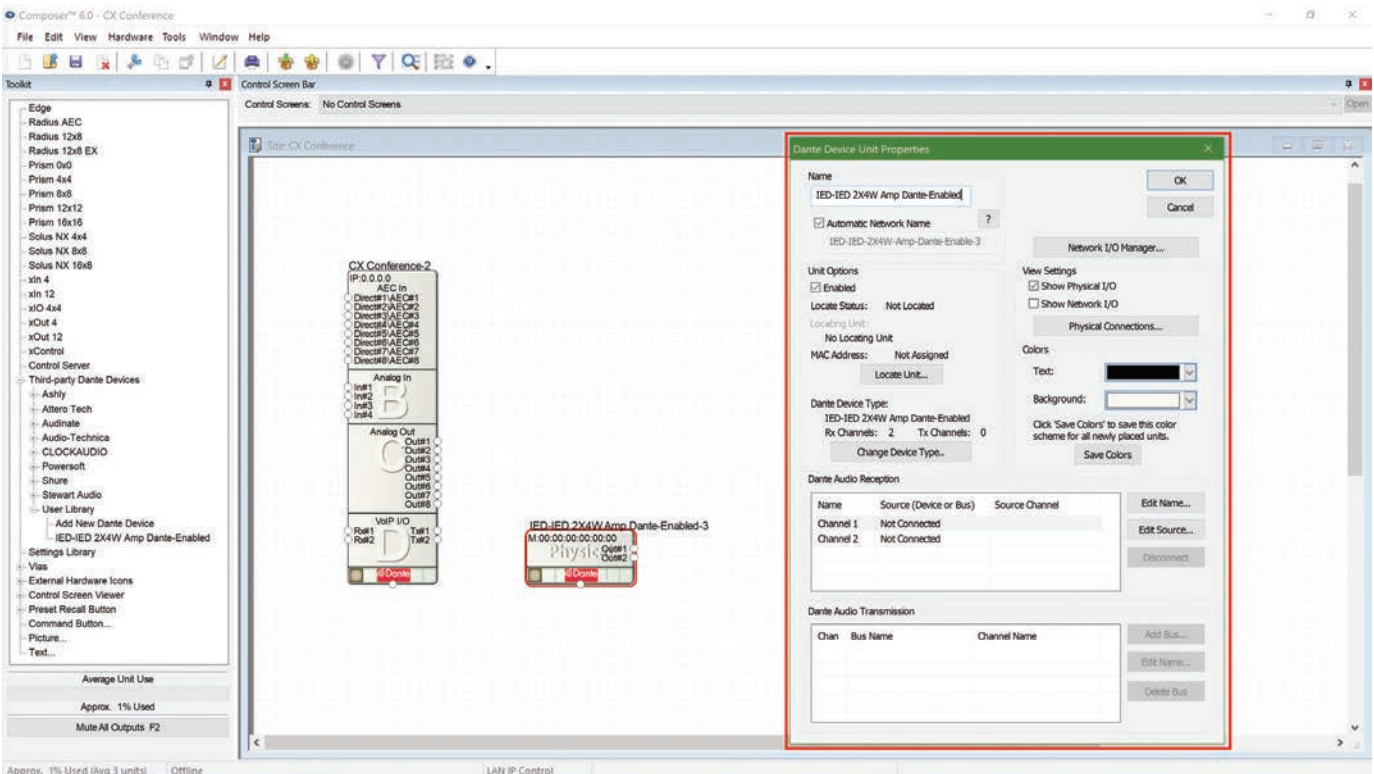
9. Once added to the library, these devices are available to add to any site file for audio routing and management. Open the Design View page by double-clicking the Radius AEC.
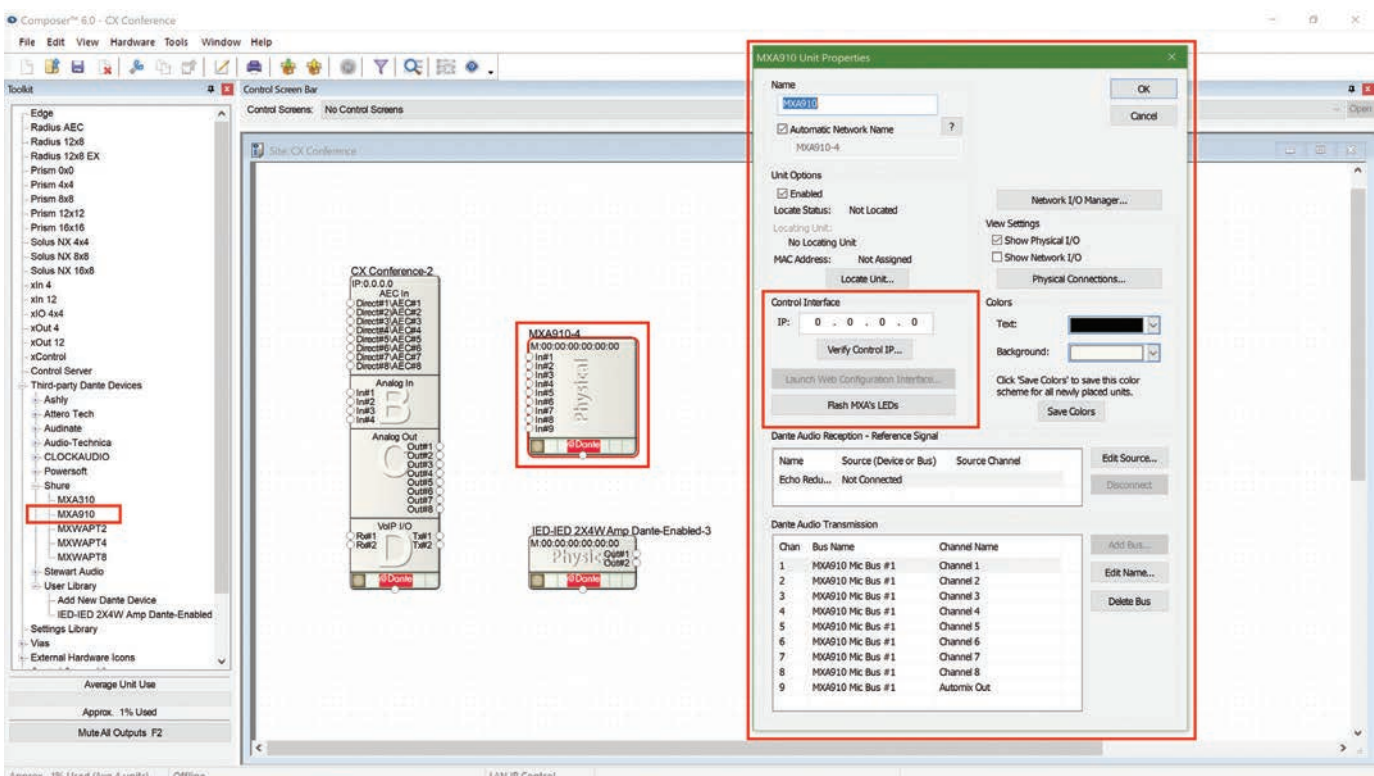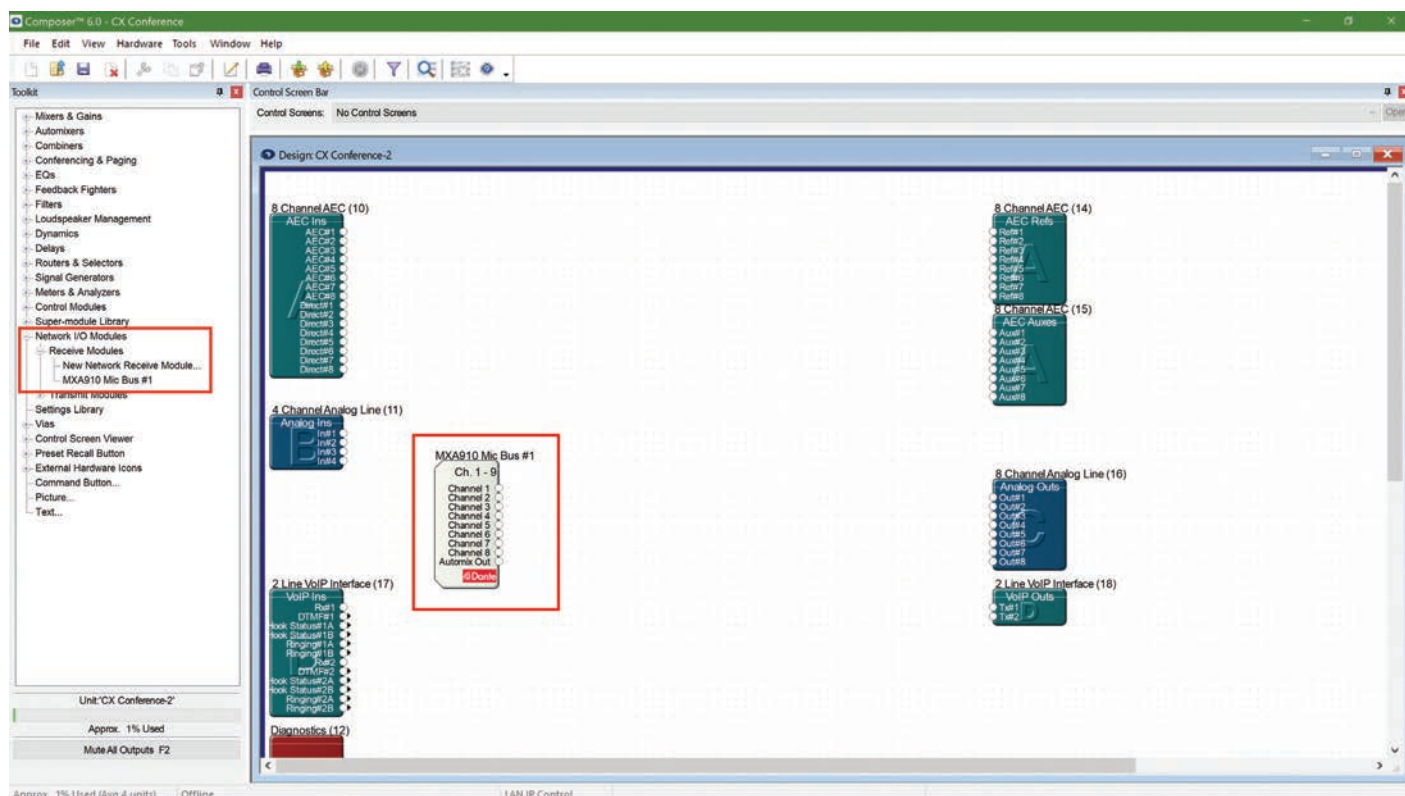
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How do:

SGM® fixtures keep themselves dry internally?

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If you've been to a pro lighting tradeshow in the last few years, you will have seen the brutal punishment that SGM dish out to their IP65 rated fixtures to prove how serious they are about weather proofing – sitting in ponds with jets of water trained on them, sitting under waterfalls, and copping immersions in any other way SGM can dream up. While protecting a fixture from water ingress is one thing, deciding what to do if water DOES get in is another.

An IP65-rated lighting fixture normally utilises a polytetrafluoroethylene membrane (commonly marketed as GORE-TEX) to equalise the air pressure between the interior of the fixture and the exterior environment. The equalisation of the air pressure is an essential part to protecting the seals in the fixture from breaking.

When power is connected to a LED light it generates heat within the light source, which causes the air pressure inside the fixture to increase and the contained air to expand. The expanded air will pass through the polytetrafluoroethylene membrane, equalising the air pressure both inside and outside the fixture. When the temperature inside the fixture is cooler than the surroundings, the air pressure inside the fixture will be lower than the outside air pressure, causing air to be sucked in via the polytetrafluoroethylene membrane until pressure is equalised. However, if the surrounding air contains humidity, this will be sucked into the fixture along with the air, since the polytetrafluoroethylene membrane cannot prevent humid air and other gasses from entering the fixture. Ultimately, this process increases humidity level inside the fixture.

When the humidity concentration reaches a certain level inside the fixture, it will eventually condensate and lead to corrosion. This process, then, leads to a degeneration of the lighting fixture as well as a reduction in the product's

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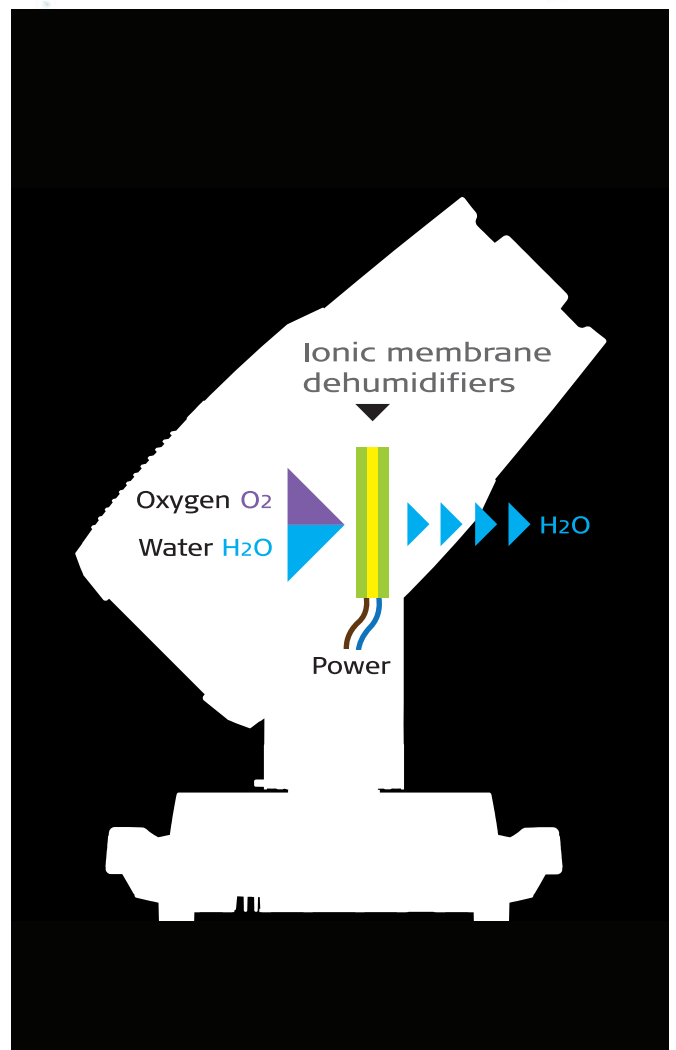UNIFYING LIVE PRODUCTION, THEATRE, EVENTS, INTEGRATION AND INSTALL.

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nsl   PHILIPS Entertainment   SENNHEISER   AD AUDIO VISUAL DISTRIBUTORS   ShowQuip   SHOWTECHNIX ONE COMPLETE SOURCE   ULA group   Pacific AV   ELS   Ey Electro-Voice   Metro   JPRO   TLC GLOBAL

ENTECH HD

lifetime. Along with humidity, air pollution that contains H_2SO_4 (sulfuric acid) will enter unhindered through the polytetrafluoroethylene membrane and into the lighting fixture, further causing destructive corrosion.

SGM's patented Dehumidifier, incorporated in the SGM product range, constantly (when connected to mains power) removes trapped hydrogen from inside of the lighting fixture in a solid state electrolytic process with no moving parts. SGM's Dehumidifier breaks down corrosive H_2SO_4 molecules, derived from polluted air, and eliminates the effects thereof. This unique process eliminates any risk of humidity, which would otherwise lead to condensation and corrosion.

The DMA's

By Cat Strom

Photos: David Youdell
and BCS imaging

The DMA's do not disappoint on their long awaited Australian tour

Jeff Hahn

With a sound and style heavily influenced by '90s Britpop, it's no surprise that Australian band The DMA's are a big hit in the UK. Having just finished a 24-date run there, the band finally found time to return for an Australian tour selling out venues wherever they went.

FOH engineer Jeff Hahn has worked with the band for the past eighteen months, picking them up as his other main act Violent Soho wound down their touring cycle. However his 'proper' job is Production Manager at Brisbane's Triffid, a position he has held since it opened in 2014.

"Luckily the venue owners know it's important to have me out doing stuff with current acts and keeping my finger on the pulse," added Jeff. "That way I can relate better to the touring techs and artists that come through
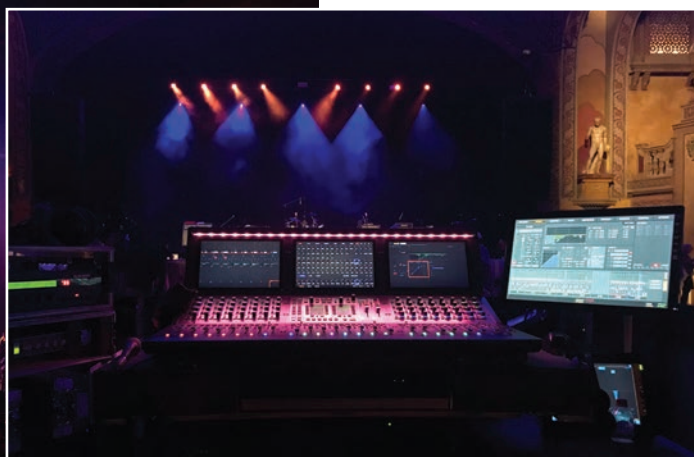
the venue and know what's really needed from a venue when you're in their position"

Jeff has generally been an Avid Profile man but for this tour he stepped up to the Avid Venue S6L saying he found the console very intuitive to use.

"I had only used an S6L once before this tour but was immediately impressed with it from day one," he said. "The huge improvement in processing and pre amps add significantly more weight and headroom over the previous Venue consoles. Sonically it is certainly a big step up."

On the last Violent Soho tour Jeff took out a Midas XL4, partly to challenge himself but also he just wanted to use a great sounding console on those big PAs.

"I've used every make and model of modern console and I feel that all the digital consoles I've ever used are compromised sonically for the sake of convenience and I just wanted it to sound as good as possible without that compromise. The S6L doesn't sound as compromised to me; it sounds really good straight in and straight out with plug ins used for taste rather than being essential. Importantly, the channel EQ feels more musical to use

than other digital consoles."

Jeff had some outboard gear such as a Smart Research C2 compressor over left and right saying he really likes what they do to a mix.

"I'm only just touching the mix with it," he added. "I always like having a good analogue compressor after a digital console, I prefer to run digital consoles pretty cool and then give it a kick on the way out than try to run them hot at the output stage. That's always been my typical approach and I used it on this run partly to have something familiar at hand."

A TC Electronic M5000 reverb unit was used as lush reverbs are a big feature in The DMA's music especially on Tommy's vocal.

"I use copious amounts of reverb on Tommy's vocals, more than I've ever gotten away with before," said Jeff. "It just sticks to his voice and helps to make it sit better out front. The more I put on it, the better it seems to get! He's got a fairly unique tonal timbre to his voice that's very open and throaty and the right reverb just sticks to it beautifully."

Despite Tommy being a great singer, it's always a challenge for Jeff to lift his vocal above the wall of sound on stage.

"He gives me plenty of level but it is dynamic music and the guitars swell at times producing a cacophonous wall of sound," he explained. "The main vocal channel is the money channel, lose that in the mix and you'll lose your gig pretty fast!

"They're a very good sounding band and not hard to make sound good out front but I'm always working during the show, I have to constantly ride levels because you never really know what you're going to get from night to night from the stage, especially with so many different combinations and stacking of gain stages on all of the bass and guitar effects. I do use some group sidechain compression to help with this; I sidechain the guitars off Tommy's vocal just to duck them a couple of dB when he's singing, it frees up a bit of room in the mix and helps keep his voice front and centre."

Jeff tours all his own microphones with DMA's preferring a blend of old and new models. On the kick and toms were Sennheiser MD421s, Shure 57s on snare top and bottom, an AKG 451 on hats and a RØDE NT4 stereo X/Y for overheads. All vocals were Sennheiser MD431s with Jeff commenting that it's been his favourite vocal mic for a long time.

"They're just a great sounding mic, as I was coming up and trying different combinations it was one of the few microphones that when put in front of them, experienced singers would often ask, what mic is this?," he remarked. "They have a lot of mid-range present in them and to my ears are a simple, natural sounding vocal microphone with a tight pattern and you can do with them tonally what you will. I have a Beyerdynamic M88 on bass which is a big part of the tone, the bass amp is about 60% of what comes out front with a REDDI tube DI and a Sans Amp making up the rest, guitars are all Sennheiser e906."

The drummer utilizes hard wired IEMs and a sub with the rest of the band all on wedges, preferably M2s or M4s for Tommy, making for a loud stage. Monitor engineer Harrison Maher, on his first tour with the band, ran an Avid Profile.

In-house PA systems were used throughout the tour with the FOH control supplied by JPJ Audio for the east coast shows, Novatech for Adelaide and At Audio Technik did Perth.

Tech Tips

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

By Simon Byrne and you, our readers!

Unexplained reduced RF performance from your wireless gear?

As well as the usual suspects, try turning off the house lights to see if they are the culprit.

Manufacturers are reporting that as venues replace incandescent lamps with LEDS in house lights, that they are seeing increased RF noise due to the replacement LEDs having poor shields, so they spew lots of RF noise, thereby raising the RF noise floor.

Try reducing the distance between the transmitters and receivers, directional receive antennas, or even better, a well-located low-gain receive antenna.

Desk Dust and Grunge.

Desks build up dust and grunge and due to the numerous knobs and buttons, they are hard to clean.

A clean, unused paint brush makes the job easy and for areas where you need to get right in, wooden toothpicks are ideal because they are hard enough to remove the grunge, but still soft enough so as not to damage the desk surface or screen printing.

Alistair Howard sent in a couple:

When fault finding apply the 'a chain is only as strong as its weakest link theory'. 15 years of live sound taught me

to look at the parts most likely to fail first, which on the road is often cables.

When in doubt about microphone choice, an SM57 will always give you a workable result.

And thanks to Phil Cartledge for this gem:

First check the power is ON!!

Dan Bright says 'Don't lose your Sharpie!'

A few wraps of Nitto around your favourite Sharpie lid to the end of a lanyard and you're set for a few seasons!

Pros:

- Wrap that lanyard through your belt loop on your shorts/pants and your Sharpie is always attached.
- When someone needs a marker they have to return it to you cos the lid is attached to you. (Genius!)
- When your Sharpie turns into a Bluntie just replace the marker.
- Reuse a lanyard that was bound for landfill.
- Nitto comes in all different colours – get creative!

Cons:

- Make sure you don't forget it's attached to your pants and send it through the wash. (Doesn't matter, all your clothes are black anyway!)

Nice one Dan! A Shure SM57 courtesy of Jands, is on its way to you!

And Craig McNamara offers this sage advice:

An SM57 is not a hammer!

And Analog Julius has some old school lighting tricks.

Dim lighting effect without dimmers:

Ancient readers may recall the fabulous SPLITTER or TWO-FER that enables series operation of 2 x 110v Par 64 cans in series. The splitter was a 'Y' cable with a male 240v plug and two short cables each with a round earth (or dual round live) pin socket. Thus two cans were connected. The series wiring was done in the male 240v plug. If both Par 64 lamps were working, the circuit would be complete and they would run at 120v (slightly overrated as our mains is 240v). If one lamp filament was failed, both cans would be dark until you figured out which was dead and replaced it.

Anyhow, my tech tip is to make your own Two-fer but with all 240v plugs and use it VERY CAREFULLY. Why would we do this? Well, back in those days before LEDs we sometimes needed a dimmed lighting state and without dimmers. Thus if you connected two IDENTICAL lights, like 2 x 300 watt Par 56s or 2 x 500w theatre profiles, they would run at 50% output. Nice for moody scenes!

Note that running un-equally powered lamps (like 1 x 500w and 1 x 650w) produced unequal outputs and also that running anything other than a pair of incandescent or halogen lamps is highly verboten.

Campfire Flickering Lighting Effect:

I needed to create a camp fire for a theatre scene. Connecting a 40w fluorescent tube starter across the active wire and using a 40 watt light globe encased in red gels did the trick. It'll flicker and carry on quite authentically. It'll also freak out the audio guys.

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

LSC Lighting Systems Clarity LX600

By Grant Watson

Grant Watson is the lighting director and lighting designer at Strauss Productions. He has been in the industry since 1972, working also as a director of photography. Strauss Productions have been extensively involved with lighting for broadcast reality television, including work on The Voice, My Kitchen Rules, Interview with Andrew Denton, The Living Room, location and reality sets for Australian Ninja Warrior, Farmer Wants a Wife, Beauty and the Geek, Australia's Next Top Model, and The Biggest Loser.

I was a little bit apprehensive about LSC's Clarity when it was released, but once I started to use the system and see exactly what it was, I thought 'This is amazing!' It suits our requirements perfectly. We are still controlling a large number of conventional fixtures in any one show, having anything between 160 and 300 dimmers running, and we're obviously also running moving lights and LED in many forms and combinations.

FINDING CLARITY

I have found Clarity to be the simplest, most forgiving, and reliable system for our applications. By 'forgiving', I mean that it doesn't matter what you ask it to do, it will do it. It never jumps, it never bucks; it's just very user-friendly. At the moment, we're using the LX600 on The Voice Reality sets. It

doesn't matter what we throw at it, it will do it and it will perform. There's an ease in transitioning from very simple dimming control operations, through to complex networking, pixel mapping, and an endless number of complex cue lists.

We own a number of Clarity units; from Clarity software on a MacBook Air which travels the country doing MKR, to a Clarity that we run off an LSC VX20 wing, an LX300 console, and our premium Clarity, the LX600. The Clarity operating system is seamless across its different platforms. I look at Clarity as a senior lighting member of my crew, as opposed to just a lighting desk. I have never found any limitations, and it is a great value for money desk. I'm not saying it's cheap; it is an economical, Australian-made, viable alternative to other market leaders. Clarity holds it own!

FIXTURE CLONING

Fixture Cloning is a fantastic feature of the Clarity system. You might go into a venue with your touring show which is populated by predominantly Martin fixtures. The next stop on the tour is another venue which is populated by primarily Claypaky fixtures. Fixture Cloning means you can say 'All right, I want to clone all my Martin Quantum Profile spots over to a comparable Claypaky unit," and it will do that. You can just adapt your show file to be running from predominantly Martin fixtures to Claypaky fixtures.

FREESETS

Clarity's Freesets concept is similar to Cloning. Let's say we're setting up a parameter or attribute in a moving light; colour, for example. Colour and colour temperature in TV is very important - you have to get in right. So let's say I'll set the desired "TV Colour" on a Robe Robin 600 LED wash. I'm happy with it so I save it as a Freeset. I may be using a lot more of the same type of RGB fixtures and say a number of alternate fixtures that are CMY. I can just select all of those 'other fixtures', activate the Freeset, and the correct colour will be set into all of the fixtures. A very handy tool and quick! You can use Freesets for any parameter or attribute.

WORKFLOW

The LX600 has a very comfortable workflow with minimal keystrokes. It's very intuitive. For example, if you build a cue in Clarity, that cue could consist of X number of conventional dimmers, running just conventional lights. It could also consist of moving lights. You could just build whatever you want on the output and then record it as a cue. There are very minimal keystrokes. It doesn't sound too different to any other lighting desk, but once you've recorded that cue, and you want to go back and see what fixtures are in that cue, and the attributes of those particular fixtures, it's very easy to have all of that mapped out in front of you. You can then seamlessly modify any of the fixture's attributes. I find that a huge advantage over some competitor's desks. We use very cue-based systems, and at any given time we need to be to able, with minimal keystrokes, make adjustments to any attributes that are within those cues.

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ERGONOMICS

I just love the ergonomics of the desk. When you first take the LX 600 out of its case, the screen lies flat. You can then tilt it up to an operating angle that's comfortable for either sitting or standing operation, from 180 degrees up to almost vertical.

SET-UP

The LX600 is very straightforward to set-up for both complex and simple shows. One of the beauties of the system is that the basic patch and layout of any show can be done off-line with the free downloaded software on a Mac or PC. That file can then be loaded into any Clarity system and away you go.

SERVICE

LSC is very responsive to user suggestions, and their after-sales service and backup has been second-to-none. I can be on the phone to either the software developer or a hardware engineer within moments. We always get a response.

Brand: LSC Lighting Systems
Model: Clarity LX600
Pricing: $19,500 RRP ex GST

Product Info: www.lsclighting.com
Distributor: www.lsclighting.com

VuePix ER Series LED Panels

By Paul Rumble and Ben Morris

Vuepix ER

Paul Rumble is Technical Production Manager at Scene Change, Melbourne. Ben Morris is the Executive Manager - Technology at Gold Coast Convention and Exhibition Centre.

PAUL RUMBLE

Scene Change is a national company supporting TDs and producers in delivering their events. We're working on events of every scale and size, often without the luxury of set-up days, so we needed a LED panel solution that we can get set-up and running quickly. We've invested in a sizeable fleet of VuePix ER 3.9 pixel pitch panels.

HANDLING AND RIGGING

We've been providing predominately ground-supported LED screens, but we have flown them for a few projects, normally in a wide, unusual aspect ratio of 3:1 or 4:1. One of the things we considered when purchasing a LED panel product was the weight, as a lot of the venues that we work in don't necessarily have the capability to support much from the roof. We found the VuePix ER Series relatively light compared to some of its competition.

The way that the VuePix ER Series goes together and rigs is very intuitive. The magnetic retention system is really effective and means the panels easily lock together. The locking system is totally integrated so there's no external pins or anything else to lose. The one metre by 50 centimetre form-factor speeds up the assembly process quite a bit, and they line up really well because of it. You don't have anywhere near as many joints.

PIXEL PITCH

We're currently using the ER3.9 in indoor applications. We have found that a 3.9 pixel pitch works in most environments. We looked at whether to go smaller and decided that 3.9 is the sweet spot for most venues when you run the screen upstage. That puts the screen around five metres from the first row of

seats, which is perfect.

SIGNAL, POWER, AND CONTROL

We're using Novastar R5 controllers chosen for the number of outputs, and their ability to rotate images. We use Barco E2 presentation switchers as we're almost always using wide-format screens, with PiP and other content dropped in. We've done one event where we haven't used the E2, and that used a Barco PDS-902. We have a fibre unit which we mount on the rear of the screen that receives signal from the controller, and distribute signal via Cat5 from that. Power wise, it's all powerCON, keeping it very simple and intuitive. Signal runs redundant in both directions, and has been completely reliable.

COLOUR AND BRIGHTNESS

Colour reproduction and brightness is comparable to any product with similar specs on the market - it does what it says on the box, as they say. We use VuePix ER at a lot of large corporate events where the accuracy of colour in branding is important, and it certainly fulfils those requirements. When used for IMAG we don't see any artefacts or tearing, and there's no perceptible latency from live camera feeds.

SUPPORT

Our relationship with ULA Group was a big factor in our purchasing decision, and with ULA's Melbourne office, we've got the support we need. Ultimately, the VuePix ER Series is a product designed with professionals in mind. Assembling and dismantling has been well considered, and you can get it both deployed and struck quickly. We're definitely happy that we've made the right decision with this purchase.

BEN MORRIS

THE GCCEC invested in more than 200 VuePix ER4.6 panels in September 2017. We were branching out to adopt new technology in the display space, following global technology trends for corporate events as well as providing a high impact visual display for sporting events and exhibitions. The beauty of LED panels is they have many configuration possibilities. That's a big benefit to our business, as we can then service many different styles and scales of events with the same modular product. We're primarily using the VuePix ER4.6 panels for large format conference screens, stage sets, and display solutions in high ambient light applications like exhibitions and sporting events.

APPLICATIONS

During the Commonwealth Games, we deployed the ER4.6s as a screen cube over the main basketball and netball arena. The cube itself was four sides of 6.5 metres wide by four metres high, providing a 360-degree visual display for the stadium. That event was in our 6,000-seat arena, and is so far the largest scale application that we have used them on, though we did build a 21 metre by five metre screen in our arena space for a plenary just last week!

We're also using the ER4.6 for small scale digital banners in exhibition spaces, we can fly small LED displays of various sizes and aspect ratios to replace traditional vinyl banners. This solution adds to the dynamic look of the exhibit, and potentially saves the client on costs.

PRACTICALITIES

Selecting a LED product was all about the usability for us, particularly the ability to build a screen quickly and safely, because of the associated labour cost. We really like the unique magnetic locking system, as it means

just one person can clip a panel in place. We didn't find another product on the market that could do that.

SIGNAL, POWER AND CONTROL

We're doing all of our processing with Novastar R5 controllers always configured for running redundant signal paths, and CVT4K-S fibre convertors for long distance signal transmission via Neutrik OpticalCon tactical cable. We use LSC Advanced Power System distribution which gives us monitoring of volts, amps, and load per phase and per circuit. We use Barco E2 and S3 Event Master switching almost exclusively. This gives us ultimate flexibility given the various aspect ratios used with LED.

SUPPORT

ULA Group provided us with both the warranty and a service level agreement with regards to replacement. All the panels are modular, made up of the LED panels, the chassis, and the control block. They're all hot swappable, so if there's a failure we can swap a module live on-site. ULA will then replace any items that are swapped out. We've found the failure rate to be so low, it's a non-issue.

There's a big, wide world of LED panels out there, and there's massive variation in quality and pricing. Local support from the distributor was vital to us, and ULA has an office right on the Gold Coast. The quality of the VuePix ER Series is equivalent to any comparable product in the market and having local support within Australia was the top of our list when making a purchasing decision.

Brand: VuePix
Model: ER3.9, ER4.6
Pricing: depends on config.

Product Info: www.vuepix.tv
Distributor: www.ulagroup.com

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By Jim Kumorek. This review was first published in Church Production Magazine

Elation Fuze PAR Z175 LED Wash Fixture

In a nutshell, Elation's Fuze PAR Z175 is a COB-based LED wash fixture with RGB colour-mixing capability, zoomable lensing, and strobe capabilities. One of its standout features: brightness.

Fuze Par Z175-LT4

With the advent of Chip on Board (COB) LED technology, LED fixtures have received a huge boost in brightness potential. COB enables LED emitters to be packed tightly together directly on a circuit board, making the matrix of emitters appear more like a solid light panel instead of a spaced-out cluster of packaged LEDs. With the greatly increased emitter density comes higher-power lighting fixtures.

Elation's Fuze PAR Z175 is a COB-based LED wash fixture with RGB colour-mixing capability, zoomable lensing, and strobe capabilities. It also includes macros for colour mixing automation and colour presets, and it also allows users to manually mix their own colours.

The fixture consumes up to 200W of power (the COB LED engine consumes up to 175W of power), and uses powerCON connectors for electrical power. Both three-pin and five-pin DMX in and through connectors are available. Fixture options can be set via the control panel at the back of the unit, or through Remote Device Management (RDM), which allows settings to be changed

over the DMX cable from a remote RDM system.

Twelve different profiles are available, providing at its simplest four channels controlling red, green, blue and white emitters. At the more advanced end, the fixture takes 14 channels to give you access to all features, including colour and colour-mix presets. One of the profiles will provide 16-bit control over colour and intensity for finer levels of manipulation.

REVIEWER NOTES
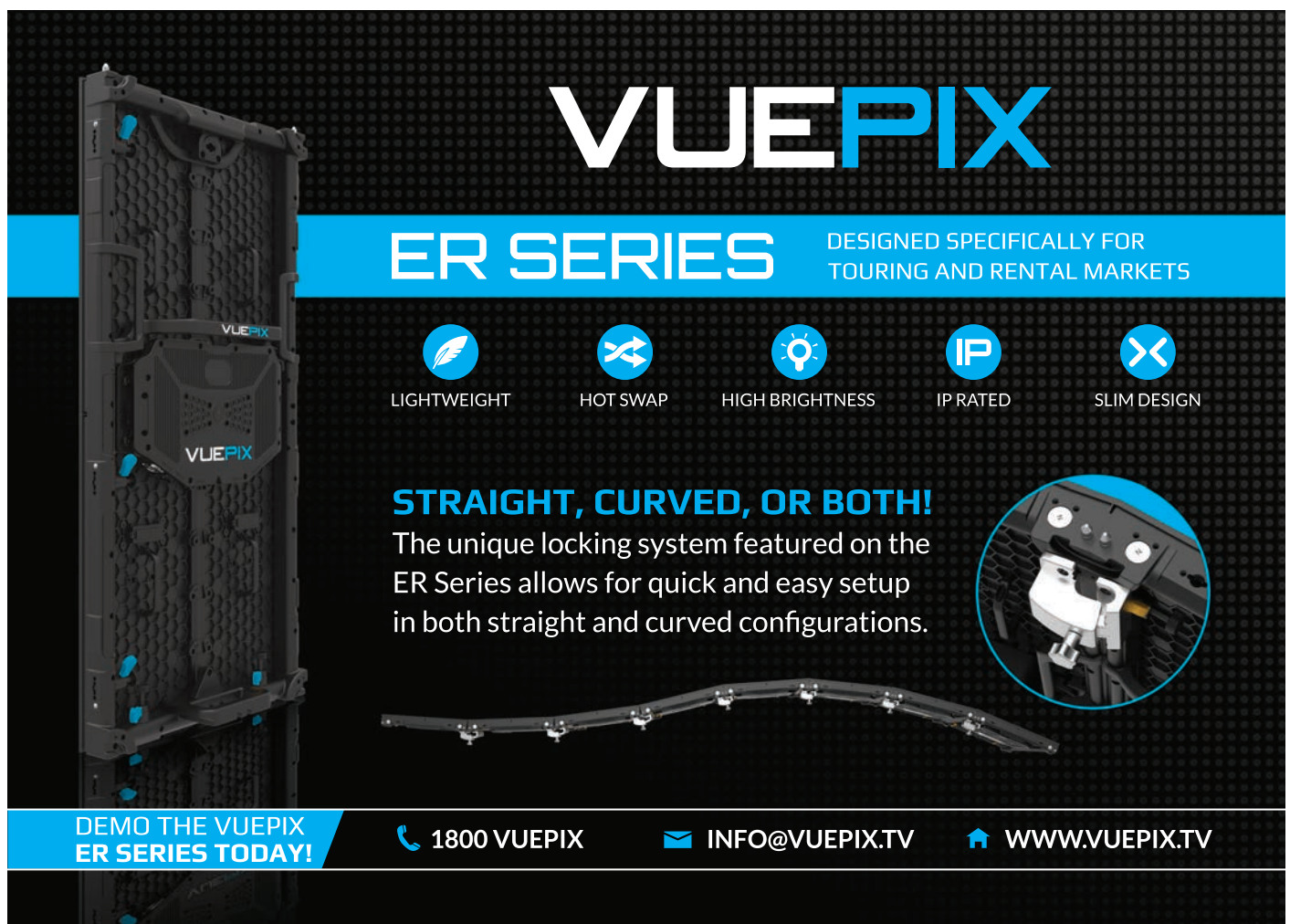
On unpacking the fixture, one thing I noted immediately is the weight. This is a hefty fixture, weighing in at about nine kilos. It's on the large side, but appears to be well-built and sturdy. Part of the weight is undoubtedly from the motor that controls the zoom feature. Included in the package are a set of barn doors and a gel frame which, in particular, enables you to add colour correction filters,

diffusion material or +/- green filters for fine-tuning the fixture's colour to match other fixtures in your rig.

Set up was easy- just needed to add a mounting clamp, power and DMX. Setting things like address and fixture profile were straightforward from the rear menu system, and RDM control over these attributes also worked well. Having the option of RDM control can make changing parameters after the fixture is already attached to a lighting pipe a lot simpler.

On using the light, the first thing that's obvious is that this is a bright fixture. Really bright. I was very impressed with the brightness of the fixture even when wide. When zoomed in tight, it's blinding.

At a five metre throw distance at its narrowest zoom setting, I measured 249fc (foot-candles) at centre. The

beam radius was about 35 centimetres, yielding a beam angle of eight degrees - exactly what the spec sheet states. The field angle I measured to be 14 degrees. (Beam angle is defined at the point where the light measurement drops to 50% of the highest measurement. Field angle is where the light level drops to 10% of maximum.)

At its widest zoom setting, I measured 27.5fc at centre, with a beam radius of 68 inches. This yields a beam angle of 37.5 degrees--slightly more than the spec sheet, but certainly inside any margin of error for the simple measurement techniques I use. The field angle was measured to be 48 degrees.

TAKEAWAY

I was very impressed with the brightness of the fixture, and the zoom function worked smoothly and was reasonable quiet. It's also nice to have an LED colour

changing fixture where, when the lens is visible to the audience, the lens is a uniform colour and not the "chiclet" look of multiple coloured LEDs that you get with older LED fixtures.

On video, the fixture exhibited no signs of flickering, so using this fixture in a video setting would work well.

The native colour temperature of the fixture isn't specified, but from just casual visual appearance, I'd say it's close to an arc-source lamp — perhaps up around 7,000K. With the colour mixing capabilities, you can dial it in to get close to Tungsten or daylight if desired. Given that its native colour temperature isn't daylight or tungsten, this fixture is probably most useful for a stage or wall wash instead of as front lighting. But with careful colour mixing, you could certainly use it for front lighting.

The fixture dimmed smoothly, and you can specify some

Fuze Par Z175-RearLT

Fuze Par Z175

standard dimming curves via the back panel, or certain fixture profiles provide for DMX control of the dimming curve. The dimming curve sets a maximum rate at which the light intensity will change; LEDs turn off instantly when the intensity parameter drops immediately to zero. Traditional tungsten fixtures take a little time to completely go out, so these dimming curve settings will help you match this LED fixture more closely to the rate at which other lights in your rig change intensity.

It's not a cheap fixture, but you get a lot of brightness for your money. And with the ability to zoom and its higher brightness levels, this fixture could take the place of several lower-output LED fixtures, so from that perspective you might see some cost savings. It's definitely worth taking a look at for washing your stage or walls.

Brand: Elation
Model: Fuze PAR Z175
Pricing: $1,390 ex GST

Product Info: www.elationlighting.com
Distributor: www.lexair.com.au

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By **DUNCAN Fry**

Fast food on the road; fast, hot or good?

If you're lucky it's any one of those three!
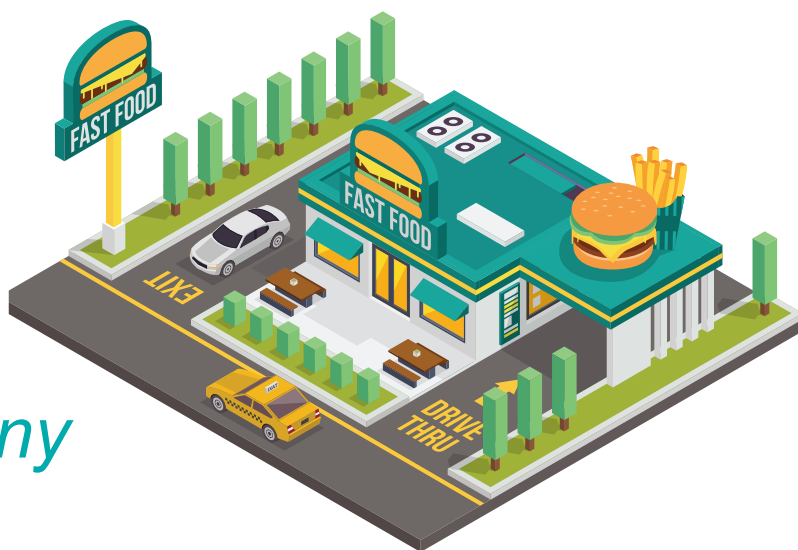
Considering how much fast food I've sampled over the years, the bad experiences have been very few and far between.

A steak ordered rare from a beachside diner in Venice, California that left me doubled up in agony all night, and put me off rare steak for about five years; a late afternoon (a bad food time, having usually been kept warm since lunch) burger that had me doing the Tijuana two-step; and that was about it.

I should have known my run of luck had to end sometime. I suppose it's a legacy of days and nights on the road, eating on the run in all sorts of places, because when you're out on the road, food is survival. 'I've been drivin' all night my hands wet on the wheel – Dah da da dadda dah.'

It's a way of stoking the body's fires to keep going for another 20-hour working day, so it needs to be fast, hot or good. If you're lucky it's any one of those three! An added bonus is buying it if possible at a petrol station roadhouse so that the hamburgers, chips, drinks etc. can be surreptitiously added to the band's fuel bill.

"Geez the old truck must be running a bit rough, guys - we seemed to have used an extra hundred bucks of juice - look, here are the receipts!"

There is also an unspoken bond between you and the person who sells it to you, and that is - once you've eaten the food, that's the last you expect to see of it. Life being what it is, though, it doesn't always happen that way, which is one reason why the major fast food chains do so well.

If you pull into Pigsbottom, West WoopWoop, and there's a choice between getting something from the totally unknown quality of the local greasy spoon or Hungry Mac's, then Hungry Mac's wins every time. It might be a little bland and predictable, not exciting thought-provoking cuisine, but at least it's reliable.

But if you're in a small town, hungry, and there is no outpost of one of the major chains, then you're on your own.

I was doing a mini tour with a country star in the Snowy Mountains, and my trusty assistant Jim and I had gone to the local Fish and Chip shop for some dinner. We were walking back to the pub with two big wrapped hot bundles when we bumped into...the star. Let's call him Pete. A great guy to work with who came from deep in the bush, and who had never looked back since discovering the lure of showbiz!

"Hey, come on over to my room," said Pete, "I'm just having a hamburger myself."

"OK" we said, and followed him in.

Jim and I opened up our bundles and started munching.

I had played it safe and restricted myself to basic fish and chips, but Jim had ventured into the realms of gourmet delights, and was happily crunching on some crunchy batter-filled things.

 "What've you got there, Jim?" asked Pete.

"Oh, just some prawn balls," said Jim in between munches.

"Some what?" said Pete, not quite believing what he'd heard.

"Prawn balls," repeated Jim. "They're really nice. Would you like to try one?"

Pete still stared in disbelief at Jim.

"Prawn balls?" he said, "But...but...they must be TINY!"

Jim and I looked at each other and burst out laughing. Pete looked at us, not getting the joke. So we explained.

"Pete," we said, "They're balls made of prawn, not prawn's balls! There is a difference!"

Well, old Pete laughed so much that I thought he wouldn't be able to do the show that night. He told us that he had always eaten meat, and had never tried seafood in his life.

I should have followed his example.

I was standing at the mixer that night, twiddling the knobs, when all of a sudden I could feel my insides turn to water. I realised that I had to get to the toilet FAST, but Pete and the band were only two or three songs into their set. There was no way I could wait until they finished – as everyone who has been in this situation knows, when you gotta go, you gotta go!

Jim was doing monitors at the side of the stage, the place was jammed and there was no way I could get to the stage to tell him to urgently come and take over from me before

the monster from The Thing burst its way out of me!

I quickly scanned the desk levels - all OK. I turned and grabbed the nearest guy standing next to me.

"Hey mate - want to mix?"

"Sure, no worries; what do I do?

I had all the effects running down to a single group fader, and I pointed to it.

"See this knob? It's on –5 now, just below the line that says zero."

He leant over and stared at it.

"OK? When the song finishes, pull it all the way down until it stops."

He nodded in agreement.

"Alright then. Now when he next song starts - push it up to –5 again. Don't touch anything else. OK?"

I stood him at the desk and made a dash for the dunny. Luckily I made it in time. I should never have eaten fish so far from the coast, but it's nothing but the best for old Dunk when he's away on tour! You'd think that bubbling away for ten minutes in boiling oil would kill most germs, but obviously not!

Anyway, about 2 or 3 songs later I bounced out of the executive washroom (not!) about 10 kilos lighter, and walked up behind the guy I had left at the desk. His mates were all gathered around him asking questions about what does this knob do and what does that knob do. Finally he threw his hands in the air and turned around to face them.

"Look," he said, "you wouldn't understand. It's technical! Hold on, hold on, I can't talk, the song's ending." and he put both hands on the effects return fader and slowly brought it down.

His mates watched in awe. He stood there, looking knowledgeable, and as the next song started, slowly pushed the fader back up.

I tapped him on the shoulder and thanked him for his help.

"Oh, no problems, mate - glad to help out. By the way, how much do they pay you to do this sort of thing?"

I gave him a rough figure, not letting on that the price included supplying the PA system and the truck, and his eyes popped out of his head. He wandered back to his mates, shaking his head in disbelief, and I could hear him talking to them.

"Jeez, I've got to get into this mixing, guys. It pays really well and it's a piece of piss!"