CX

MONTHLY TECH NEWS

CX127 JULY 2017
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▶ ## WINTER IN THE ZOO
Vivid lights up

▶ ## UTILITY KINETIC INSECT
Robotics, sound, light, art!

FROM TRARALGON ◀
TO THE WORLD:
Live at Spectrum

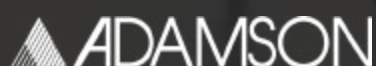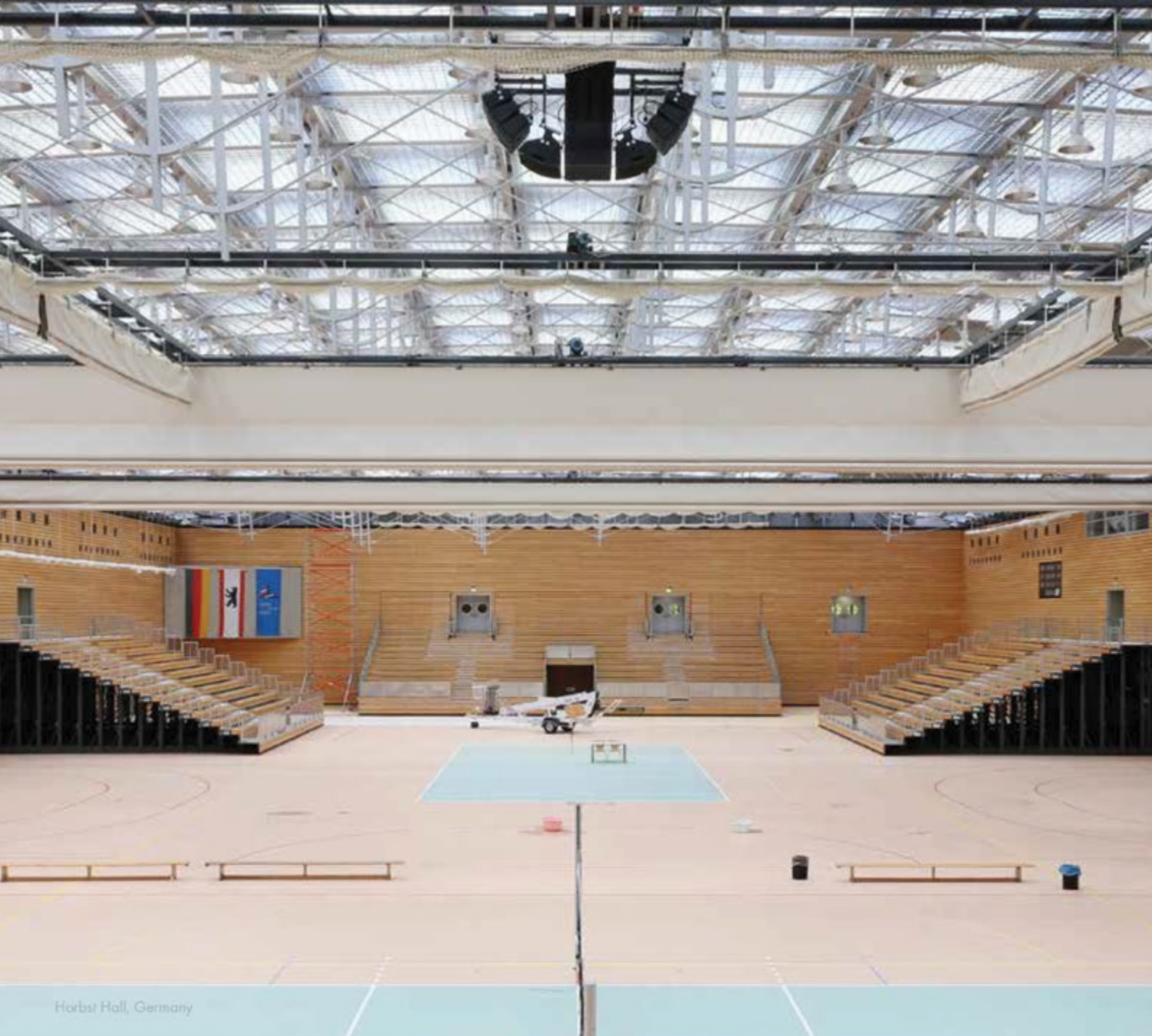| NEWS:	ROADSKILLS:	REGULARS:	GEARBOX:
• Altronics turns 40 • SMPTE, Helpmanns • Nitro, chaos and comms • ProCab for Audio Logistics	• Sheppard • The Avalanches • Goldfrapp	• History • New Gear • Biz Talk: Invest. In a mine! • Tech Tools: Show Redundancy	• QSC K2 • Presonus ULT15 • Acme Stage Blinder IP • Tascam SS-R250N

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• Cover photo: Tony Lukeman

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Altronics celebrates 40 years in business
Perth firm builds audio gear as well

Altronics is in its fortieth year as an Australian owned and operated electronics retailer and manufacturer. In an era where so much of Australia's manufacturing base has been shifted offshore, Altronics have achieved four decades of innovation and steady growth in its commercial audio and retail electronics businesses.

When Jack O'Donnell founded Altronics in 1976 it was a small electronics retail store in Stirling St, Perth with a wholesale division located in Subiaco. Initially it was staffed by just four people. Since that time it has expanded its operation to a national business employing over 100 people, with retail stores in WA, NSW, VIC and QLD.

Altronics are also the manufacturer of Redback public address products, a renowned brand of quality Australian Made audio equipment. Redback is now used by installers throughout Australia, New Zealand, Asia and the Middle East, proving that Australian manufacturers can still provide innovative quality products to the international marketplace.

Director & Sales Manager, Dean Stephens adds that many of Altronics achievements can be attributed to their keen focus on customers.

"Our customer service has always been the primary focus of our business. We enjoy having discussions with customers about our products, because inevitably it enables us to develop and design products better suited to the market. It is a distinct advantage of dealing with the manufacturer directly and not just selling products off the shelf".

"We are thankful to our many customers for making this milestone possible" said Brian Sorensen, General Manager of Altronics. "Their feedback has helped to shape our company through the years. We look forward to continuing to serve our valued customers for many years to come."

SMPTE, HELPMANN IN JULY

Every two years SMPTE showcases broadcast technology and it shows for the first time at Sydney's new International Convention Centre, in Darling Harbour, between July 18-20.

SMPTE17 has technical sessions on the industry's issues, like 'High Dynamic Range - closer to the human eye', 'Moving to IP-based systems - the challenges' and 'Virtual Reality - a new frontier'

These are a few of a slew of sessions held alongside the expo which is worth a looksee. Google SMPTE.

Meanwhile the Helpmann Awards come down on Monday 24 July at Sydney's Capitol Theatre. These are the major awards for performance.

AUDIO LOGISTICS GO PROCAB CABLES

Established in Belgium in 1997, Procab offer a complete line of premade and bulk cables, connectors, adaptors, cable reels and cable accessories.

With a product catalogue of over 4000 products, Procab's range includes audio, video, data and power solutions for every application including installation and touring.

Based in Melbourne, Audio Logistics distribute an extensive range of pro audio and integration equipment. The addition of Procab cables, truly allows them to offer complete end-to-end solutions.

"We're thrilled to represent Procab! The breadth of their range provides something for everyone, no matter what part of the industry you're involved in", said Adam Dullens, CEO at Audio Logistics.

www.audiologistics.com.au

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SHOWS

Bodyguard goes off with a bang

Fresh from acclaimed seasons in many places, including South Korea and of course the West End, this adaptation will play Brisbane in July before opening in Melbourne next month. CX caught the show at Stephen Found's gorgeously upgraded Lyric Theatre in Sydney.

Provided you like the music (and this is the pre-condition for anyone who buys a ticket for a jukebox musical) it was far better than anticipated. The show was tight, moved well, and well adapted from the movie. It came with some points of difference, but told the story of a mythical singer and her downtrodden (and talented) sister – played brilliantly by Prinnie Stevens. The premise is that someone is stalking the singer.

Paulini Curuenavuli came close, very close, to matching the unique and stunning voice of the late Whitney Houston (who led the movie, and whose songs feature) AND proved that she can ACT and DANCE as well. The sound was fat and full from a L-Acoustics' Kara PA supplied by JPJ Audio from a design by Richard Brooker. It was adapted by resident JPJ senior theatre fellow Michael Waters.

Technical producer Frank Harlow always delivers, and this show is LOADED with effects, fire, gas and whiz-bangs. The lighting design by Mark Henderson was neatly adapted by Trudy Dalgleish, and had plenty of colour and movement. PRG supplied the goods.

CVP video did some good work too, and we should also credit the live eight piece band who labored unseen somewhere but who were featured in the final minutes of the encore, up on video. So they existed!

Julius Grafton

(Pictures from Bodyguard website, not Australian cast)

Additive Lighting's sweet success with Hot Brown Honey

Fresh from acclaimed seasons in festivals around the world, Hot Brown Honey returned to Sydney Opera House this June. With lashings of sass and a hot pinch of empowerment, this posse of phenomenal women smash stereotypes, remix the system and dare to celebrate our similarities and differences.

Lighting this audacious platter of dance, poetry, comedy, circus, striptease and song, was Paul Lim of Additive Lighting.

As the show title suggests, the set was designed to represent a bee hive with Busty Beatz, the musical director, the queen bee on top of this hive structure. The set designer Tristan Shelley came up with the idea of a honeycomb facade made up of yellow plastic buckets heat-formed into hexagons. As Paul thought about how to light this structure it became obvious to him that he had to light each bucket and create their own low resolution LED screen.

"I wanted it to be a backdrop for the performances in front of it, but also character in its own right," he explained. "I spent many late nights exploring the grandMA2 Bitmap Engine in MA3D, finding images and text that worked on the unconventional pixel layout. It turns out text is not that easy to render in a hexagon grid!"

Paul's biggest challenge was the budget, saying he built an LED screen on the smell of a soldering iron!

"I knew what I wanted it to do and I knew that if I ordered components direct from China, I could build it myself," he said. "However this meant that there were many late nights soldering plugs and sockets and control boxes and hot gluing LED strip. We had a lot of reliability issues early on, but after

a couple of iterations on how the set is constructed, we've made it robust enough to be transported and bumped in in two hours."

The main touring rig consists of six profile moving lights (MAC Quantum Profiles), six LED wash moving lights (Claypaky K10 or MAC Aura XB) and six small LED Pars for footlights. In the Sydney Opera House, in-house stock consisting of MAC 700 Profiles and MAC 250 Wash were used. Control is grandMA2.

The hive consists of 266 x 24V warm white Led strip in buckets with twelve 27 channel LED controller.

"As the hive is monochrome I really enjoyed the different textures, images and text I could render on it," said Paul, when asked for a favourite moment in the show. "We got enough variation with the single colour and I feel that the simplicity is part of its strength. I particularly enjoy the smiley faces bouncing around during Bali Bagus and scrolling text during Hair. The strength of timecode should not be underestimated in programming a show like this. It promotes repeatability as well as real visceral link between the music and the lighting."

Recipients of the 2016 UK's Total Theatre Award for Innovation and Australia's Greenroom Awards for Best Production and Best Design, Hot Brown Honey have lit centrestage at the most prestigious venues and festivals across the globe including Sydney Opera House, Melbourne Arts Centre, Brisbane Festival, Tiger Dublin Fringe, Auckland Pride Festival and Hull Freedom Festival to name a few.

Cat Strom

BYTES, BITS & RUMOURS

- **Priscilla Queen of the Desert** returns next year! After opening in Sydney in 2006, the franchise has been almost everywhere, somewhat strangely showing in Manilla and Athens – as well as many other markets. But it was that BUS that made a lot of headlines when it broke down, costing a handful of shows in Sydney and at least one in London. It'll be interesting to see it in 2018, presumably with it's unreliability well and truly sorted out.

- **Do we have an over representative cluster** of left handed people in tech, ponders Daryl Edwards from Perth? For that matter, is it true that the majority of all people in tech are also musicians? In which case, we don't see THAT many left handed guitars or drumkits. Do we? Check the CX Mag Facebook page for exploration. You may be surprised!

- **Melanie Bownds won a defamation case** in Melbourne against trash magazine publisher Bauer Media in June. Melanie is the sister of Liberty Mair, wife of Lexair boss Alex. Melanie convinced a judge that silly things published by Bauer in a slew of its gossip rags cost her alter-ego Rebel Wilson some very serious movie roles - worth maybe gazillions of dollars. The damages award is pending, and CX is reviewing its defamation policies in nervous anticipation of an upswing in this kind of litigation. The launch of our latest title, a gossip mag called 'Dontell' about people who work backstage, has been suspended.

- **Alex Mair discovered the power of the paparazzi** some years ago while visiting his sister in law. They went out for a quiet dinner, and next day photos appeared online of 'Rebel Wilson's New Mystery Man'.

- **Something is going on behind the scenes,** as former Audio Products Group boss Ken Dwyer seems to be behind a new entity distributing consumer audio visual goods. An online AV trade newsletter penned by a notorious former Fleet Street 'journalist' made all kinds of assertions, speculating on Ken's links to Ambertech (he is a shareholder, it is a public company) and Hills (he is or was a director on its board). Some smoke, no fire.

- **Head of Hills AV division** Shane Meyers has left the firm, which he joined a very long time ago. We wish him well.

EMAIL US: juliusmedia@me.com or text +61 408 498 180

Nitro Circus - Regional Rampage
Chaos with dirt, calm with comms

Travis Pastrana's Nitro Circus Live - toured 15 Regional Australian towns and cities this autumn. The P.A. People supplied the communications solution for the whole tour.

The P.A. People solution included Motorola Two Way Radios, ClearCom HelixNet Digital Party Line Belt packs, ClearCom HX Frame and V Panel Key stations. The capability and reliability of equipment provided, were an effective match for the challenging audio conditions inherent in this type of event and the rigorous 15-event tour schedule.

The Tour publicity stated - 'the series of events feature 30 of the world's best extreme athletes in freestyle motocross, BMX, and skate, plus a host of ridiculous contraptions being launched 50 feet into the air by the crazy Nitro daredevils. Expect to see the world's biggest and most dangerous stunts in a fully choreographed action sports theatrical spectacular! More than 60 World Firsts were performed at the Nitro World Games in 2016, and you can expect to see the majority of them performed for the first time ever in Australia, on the Regional Rampage Tour'.

history

by Daniel **Cole**

1990: **2017**

Each month we delve into **our archive** and highlight what was said, slurred, alleged and reviewed five, fifteen and twenty-five years ago this month.

➔ **Connections** July 2002 / **15 years ago**

Fifteen years ago July 2002 marked the 100th edition of Connections Magazine. Taking ten years as a measure since Channels (thereabouts) Editor John Grimshaw spoke of a maturing industry starting to take OH&S and training seriously while adapting to rapid change in technology and business, especially the downturn of the live music industry.

The cover mentions the Sydney Opera House's new Euphonix System 5 console. We spoke with The House's head of audio David Claringbold and sound supervisor Severin Sieben about it and the fine art of opera sound reinforcement - including using the Euphonix's hot-swap module in the stalls as a remote!

An article by John Grimshaw about Tag and Testing aimed to clear up confusion about the scheme. John outlined the varying rules by State and by industry (theatre, film and television) that has made compliance confusing, especially when touring interstate. We still ask: is your appliance and/or lead safe and legal - now - wherever you are?

In Venue Lighting, John also compared the costs of running either a conventional or intelligent lighting rig. The results surprise, and accompanying template and methodology should still be applicable.

Also in Lighting Graham Walne asked whether the language of programming protocols in contemporary lighting consoles match the needs of real-life lighting and plotting. The article mentioned Fred Bentham's 1935 Light Console, regarded as the first lighting desk able to record a series of channels.

In 2002 Bytecraft advertised the Strand Lighting's 300 Series Console in the magazine, to put this into perspective.

Regular features included Reviews - the Emagic compatible Logic Control surface and the Pioneer PDP-433MXE Plasma display - and Market Reports: Wireless products and Video Distribution (devices used for getting vision from one point to another).

Closing out the edition Duncan Fry recalled that most convivial of conveniences, The Cafe Bar.

➔ CX MAGAZINE JULY 2012 / 5 years ago

In CX Magazine July 2012 we sadly reported on the collapse of the Radiohead stage in Toronto that killed drum technician Scott Johnson and injured three others. According to the October 2016 online edition of music publication Pitchfork, justice for the Johnson family remains elusive with one of the defendants, promoter Live Nation, moving to have the case dismissed due to an 'unreasonable delay' in proceedings. Delays caused by the defendants, Pitchfork suggests. Their story is here:

http://pitchfork.com/thepitch/1310-waiting-on-justice-for-the-radiohead-stage-collapse-that-killed-scott-johnson/

(See also our investigation of the Indiana State Fair collapse in CX May 2012 #125.)

In Features, Mike Kovacic covered the key aspects of live entertainment automation ("all equipment can fail and all people can make mistakes"), and Andrew Mathieson summarised the various German, British and Australian classifications and codes for motorised chain hoists. John Maizels reviewed Vivid 2012, speaking with Technical Direction Company, Electric Canvas, and Urbanscreen about technology and approaches used.

As Julius Grafton suggests in Biz Talk, action is everything for entrepreneurs, and advised how to recoup legal costs DIY - especially when lawyers structure their days around billable 6-minute segments.

Elsewhere in the edition Julius spoke with Noel Lightfoot about the liquidation of Lightfoot Sound, and attempted to make sense of Phaseshift Production's corporate maneuverings. Industry trade association ACETA brought some sanity to proceedings with a sobering analysis of the industry at the time, and Paul Matthews in The Installer outlined margins, carrying inventory and offloading excess equipment.

Gearbox reviews included the Electrovoice ZXA1-Sub, Roland's V-800HD Multi-format Vision Switcher, wireless systems from Riedal (Acrobat) and Shure (ULX-D), and in LX reviews of High End Systems Trackspot Bolt and the Robe ROBIN 100 LEDBeam.

Image courtesy www.fulltable.com/vts/c/colourmus/31.jpg

Organ Console Switchboard Presents Symphonies in Color

A 23-YEAR-OLD English youth, experimenting for years in the attic of his home, has perfected a one-man control to handle the intricate stage lighting of the largest theater in England. So delicate are the effects achieved that his device can be used as a solo instrument to play color symphonies.

The general appearance of the apparatus invented by Frederick Bentham is that of a conventional pipe organ console. The keys and stops control all the lights in the theater. A battery of various colored lights in the foots, wings, flies, and even in the auditorium respond to a touch on the keyboard, producing an ever changing panorama of color.

Lighting scores for an entire production can now be composed like music, and the execution of the score is left in the hands of an artist instead of in the hands of a crew of electrical mechanics. The young inventor is now writing his own lighting scripts and opening the way to a new form of art.

This is the new stage switchboard, where lighting effects are played by an artist instead of an electrician. It can also be used as a solo instrument to play elaborate color symphonies.

(In case you were wondering, a summary of Channels June-July 1992 edition was covered in CX June - it was a good one with Prince on the cover for the first time.)

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BOSE EDGEMAX

Designed for mounting near wall boundaries, EdgeMax loudspeakers project high-frequency sound throughout rooms up to 20 m wide using only perimeter mounting locations, and can effectively cover an area that would require up to four conventional conical-coverage models. Thus, EdgeMax loudspeakers can eliminate the need for conventional ceiling speakers mounted in the centre of rooms, or surface-mount loudspeakers mounted on walls.

BOSE MB210

The MB210 compact subwoofer is designed for background/foreground music and small sound-reinforcement systems that require low-frequency extension down to 37 Hz. It features two 10-inch high-excursion woofers in a compact Baltic-birch plywood enclosure optimised for fixed-installations. Featuring outstanding performance-to-size ratio, the MB210 is designed to complement Bose Professional FreeSpace, Panaray, and RoomMatch Utility loudspeaker models with additional bass impact.

BOSE MSA12X

The self-powered Panaray MSA12X features a slim, unobtrusive acoustic design with twelve full-range 2.25-inch transducers (with 75 Hz – 14 kHz response) in a columnar line array configuration, to provide consistent audio levels with outstanding vocal intelligibility and full-range music reinforcement in acoustically challenging spaces. The MSA12X model includes 12 internal power amplifiers (50 watts per channel; total 600-watt rated power) and onboard DSP to allow digital control and beam steering of array vertical coverage patterns. Proprietary Articulated ArrayTM configuration allows wide, 160-degree horizontal coverage. Independent level and EQ control is supported for two separate beams per array, and onboard memory stores up to 10 user-selectable presets. The MSA12X features both Dante network connectivity and line-level analogue input.

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

ACME CM-S6

The Acme Solaris is a 6x6 LED panel with 36 x 15W RGBW LED and 49x 0.06W CW LED (6500K), producing a beam angle of six degrees. Suitable for beam, wash, pixel, star background and moonflower beam effects, the Solaris has 0~100% smooth dimming with four optional dimming curves, and adjustable strobe speeds. Noise is low thanks to heat pipe technology and automatically adjusted fan speed.

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

ALLEN & HEATH DX168

The DX168 is a rugged, portable expander for adding remote I/O to a dLive S Class or dLive C Class system. Each DX168 features 16 mic preamps with independent Phantom Power LED indicators, plus eight XLR line outs. Up to six DX168 units can be connected to a dLive system – four via the MixRack and two via the Surface – allowing up to 96 remote inputs and 48 remote outputs in addition to those provided by the MixRack and Surface.
The DX168 connects via a single Cat5e cable to the dLive Surface, MixRack or upstream DX168 via a secure EtherCon port. A second locking EtherCon port is provided for redundant connection to compatible hardware, or for daisy-chaining to a downstream DX168 for additional remote I/O.

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

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BARCO WICS-2100 ⟨04⟩

Barco's WiCS-2100 is a wireless collaboration device featuring tools such as visual user lists for moderators and auto layout for sharing content from multiple devices. The WiCS-2100 provides businesses and educators with new features specifically designed for more effective collaboration with Barco's wireless presentation gateway. It includes support for Google Chromecast and Apple AirPlay. When multiple users are presenting, content layout configures automatically to optimise display. Thumbnails of all connected devices are displayed for immediate preview, and Eco Standby Mode utilises discrete power to maintain functionality while conserving energy use.

Australian Distributor: Barco Systems
www.barco.com or (03) 9646 5833

PANASONIC LFV8 ⟨06⟩

Panasonic's LFV8 Series (pictured) is available in 49 and 55-inches at 450 cd/m2 and 500 cd/m2 brightness respectively, with both equipped with native 4K-capable DisplayPort inputs and outputs. When installed in a 2x2 configuration across the four Full HD panels, the result is a single, film-like 4K (3840 x 2160/30p) video image. As well as providing an affordable 4K solution for professional installations, the displays can also enlarge and scale UHD (3840 x 2160/30p) across larger video walls, with greater accuracy than is possible with signals of lower resolution.

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

HK AUDIO - LINEAR 3 AND LINEAR SUB ⟨05⟩

The new members of the LINEAR 3 family are the 12"/1" L3 112 FA, the 15"/1" L3 115 FA and the multipurpose 12"/1" L3 112 XA. The LINEAR 3 mid/high units offer plenty of headroom thanks to their 1,200-watt class D power amps, Intelligent Multiband Limiters ensure tonal integrity at every volume level, and precision directivity means the sound will go straight to the audience, with few unwanted reflections occurring. They are also ideal to be used in conjunction with LINEAR SUB subwoofers, including the new 15" L SUB 1500 A and the 18" L SUB 1800 A. The new subwoofers are each equipped with a stereo input, meaning they can be easily be configured in half stacks, full stacks, 2.1 setups, and in mono sub clusters.

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

FOHHN DLI-130 AND DLI-230 ⟨07⟩

The LINEA FOCUS DLI-130 and DLI-230 are high performance line source systems, which can be electronically controlled and monitored. The systems are equipped with eight or sixteen state-of-the-art Class D amplifiers respectively and DSP technology specially developed for this area of application, plus eight/sixteen coated 4" long excursion drivers. Producing a maximum SPL of 124/130 dB, the loudspeakers' vertical beam dispersion characteristics can be intuitively controlled in real time using FOHHN AUDIO SOFT. The vertical beam width, ranging from 0° to 90°, and vertical inclination angle, ranging from -40° to +40°, can both be adjusted in precise 0.1° increments.

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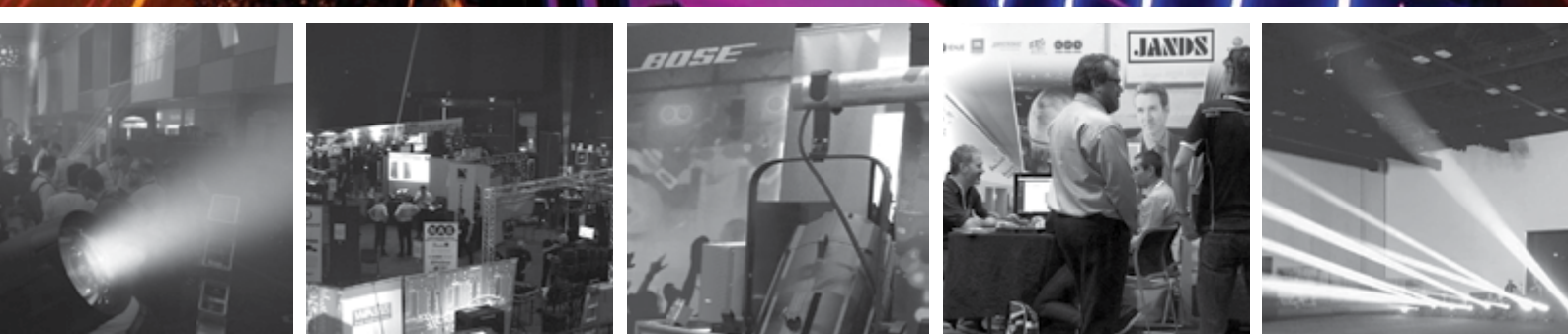CMI Music and Audio
www.cmi.com.au
or (03) 9315 2244

SENNHEISER XS WIRELESS 1 08

The XS Wireless 1 series comprises a total of six wireless microphone sets for the budget-conscious user looking for ease of use, fast set-up and reliable transmission. The series uses the renowned Sennheiser evolution capsules, and employs antenna switching diversity for reliable reception. The individual sets provide up to ten compatible, preset channels in eight frequency banks, and are available in a number of ranges across the UHF spectrum. The receiver provides balanced XLR and unbalanced jack outputs.

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

PHAROS JNR 09

The Pharos is a compact LED profile with output comparable to 575W ellipsoidal reflector spotlights. It features 19° - 36° zoom for convenient versatility across many applications and crisp gobo image projection, even at close range. It is capable of extremely flat-field projection, and ships with gel frame brackets and retaining clip included. Its flicker-free output means worry-free video and quiet operation suitable for studio use.

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

RADIAL BUMPER 03

The Bumper is a unity gain instrument selector that lets you connect up to four instruments and progressively advance through each input using a sequential footswitch. The sequence is determined by the input connections, whereby if only two instruments are plugged in, the footswitch will only toggle between the ones that are connected. Each input features Radial's Class-A buffer for absolute fidelity while enabling longer cable runs without signal degradation. This is augmented with Drag control load correction that lets you adjust the load on each instrument for optimal signal transfer, natural tone and feel.

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

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From Traralgon to the World

Live at **Spectrum**

Traralgon, Victoria, lies 165 kms west of Melbourne in the east of Gippsland's Latrobe Valley. The town of 25,000 is an unlikely place to find a monthly broadcast live music programme syndicated to Foxtel and simulcast on radio, but a DIY spirit, lots of volunteers and multi-talented locals have made it happen.

>> *Brett Tippet*
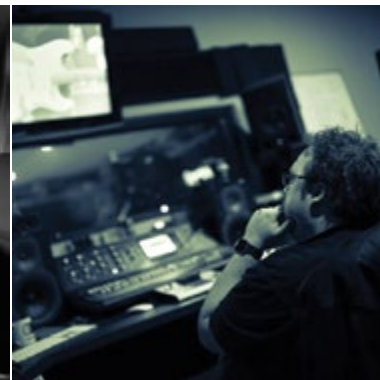
>> *Brett Tippet on the controls*

"Live at Spectrum" host bands and performers from across Gippsland. Once a month, it's streamed live on Facebook and YouTube, simulcast on local radio, and re-screened on Foxtel Aurora, community TV's Channel 31, and Channel 44 Adelaide. Brett Tippet, Producer of 'Live at Spectrum' has a background in broadcast TV and is involved in local theatre production - the show is made in his studio.

"All the theatre people here seem to be musos as well," said Brett. "There's been a decline in places to play, so we thought it'd be good if we could put these little shows on. We were just going to make a couple for web, but it became a lot more; 'Live at Spectrum' now runs monthly, it

gets rebroadcast on TV and we get simulcast on the radio. We wanted to be able to produce something that was our own, as well as give people a platform to come in and get content at the end of it."

The Power and The Passion

Powered by passion and volunteers, the show has been set-up out of the crew's pockets. "We have volunteers from our theatre connections, lighting people, pro camera people, and a couple of techs we've trained up that hadn't operated a broadcast camera," Brett elaborated. "It's all my own gear, to which we've added some updated vision

switchers and a bit of mix-down gear. Last year we spent a lot, but now it's just ongoing costs like the fibre links we need to maintain, advertising, and feeding the crew on show day! No-one draws money from it; they put their own time in, which is the biggest investment."

'Live at Spectrum' draws talent from across the region. "Our net is Gippsland; Philip Island right through to Mallacoota, so it's essentially a third of Victoria," Brett continued. "We put out a call for acts at the start of the season, and got about 60 applications, which continue to come in through the year. If you're playing original music, there's hardly anywhere to perform in Gippsland. They'll let you play in a corner of a café, but there's nowhere to sit down and have 100 people take it in. There used to be a lot more of that round here."

Studio Tech

2016's inaugural season ran eight shows, with 10 slated for 2017. 2016's finale was staged at the West Gippsland Arts Centre, and drew a crowd of 200. Brett and the crew intend on doing it all again for 2017. "It was a two day process taking all the gear out, but every month we seem to set ourselves a new technical challenge. We've had bands saying they've got extra work after appearing on the show, and acts creating their own connections and giving each other supports. It's just a little 7mx7m studio, a crew of 18, eight cameras with three operated, a couple of hosts, some musos, and a prayer hoping it all comes off!"

Lighting is controlled from an ETC Nomad Touchscreen into a DMX King ArtNet dongle with a Fader Wing. The rig is made up of 24 Light Emotion RGBA basic cans, four Chauvet RGB truss warmers, two front DMX-dimmable floods, and five Lowel Pro Lights. Three 4PAC Dimmers and a Unique II Hazer round out the lighting gear, which is rigged from nine lengths of 2m Global Tri Truss, also supporting two drape kits.

>> *Finale 2016*

Mix It Up

Sound is mixed on a Midas M32 fed by a combination of analogue tie-lines and digital signal from its DL16 stage boxes. It sends a two track mix to record, and records multitrack via a Cymatic Audio Utrack-x32 card direct to a USB hard drive. External PreSonus and Avalon preamps are used on some sources. One matrix bus with compression goes directly to the live video feed, while another routes to the FM radio feed. The control room monitors with Adam A8X s, Yamaha NS10-Ms and Behringer Truths. QSC K12s are used as audience side fills and the performer's wedges.

The talent wears Sennheiser 500 packs with Rode Lavs, with the co-host using a Rode Broadcaster and wearing IEMs to take direction from the director and sound designer. The audience is mic'ed with Rode M5s. The band's mic kit is usually Shure Beta 87 or Beta58 on vocals, or Sennheiser 945 and 965s. Drum kits get D6, Beta52, Beta91, E904, E604, SM57, AKG414 and NT55, guitar cabinets SM57, E906, or NT1.

>> In the control room

Video Killed The Radio Star

Five Sony S270 1080i50 Cameras with SDI, one Sony z7p 1080i50 Camera with HDMI wireless kit and three Marshall CV502 Micro Cameras capture the action. A wireless Tally system gives the team a Green (Preview) and Red (Program) indication on the four main operated cameras, fed from a BlackMagic switcher over TCP/IP. The Sony cameras offline record to CF cards, and the microcameras go straight to the switcher over SDI. A BlackMagic ATEM 1 M/E Production Studio 4K provides nine SDI ins and one HDMI. It can be controlled via a modded Grass Valley Panel or with an XKeys system that's set-up as an 8x8 panel with macros for setups, video playback and surface states. Vision is monitored with a Multiview 32" 4K screen.

"We switch and do everything live," reported Brett. "The only thing that isn't live is our two or three pre-recorded stories which go from two to eight minutes. We use that time to set-up for the next band or studio segment. We also pipe in live social media interaction from an iPhone, which is mirrored to an Apple TV that we SDI convert into the switcher. We can then send that via an SDI aux into the live room TV behind the host, or to the program feed."

>> Sony camera in action
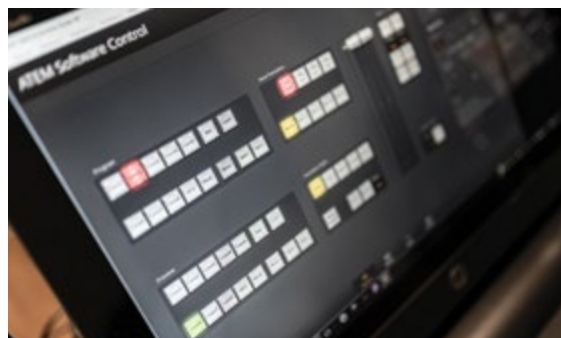
<< BlackMagic ATEM

>> Monitoring

>> Capturing the show

>> Red Rock Drums

>> The grand finale

>> Michael Waugh

The Final Cut

"During broadcast, our program feed goes to three different computers running Wirecast," outlined Brett. "One goes to YouTube Live, the second is a secondary backup stream, and a third machine does our Facebook Live Stream. We keep them separate, because we go live to the platforms at different points. This goes out over our two separate links, each with 40mb uplink capacity. We are blessed in the NBN lotto!"

"The final recordings are then sent to Foxtel Aurora, Ch44 Adelaide and C31 Melbourne the day after the live show for future broadcast," Brett concluded. "We edit an 80-90 minute show down to 55 minutes for them, with commercial break cuts. We remaster the audio and fix any glitches overnight, but try to keep to show as live as it was originally intended - sometimes warts and all!"

Make Mob's Utility Kinetic Insect

ART MEETS TECHNOLOGY

In an unassuming warehouse in Melbourne's hip north, Callan Morgan's Pelican Studios have produced works of art and science combined for three and a half years. Now, with Make Mob, a new collaborative model of working as an association, robotics, lights, sound, and engineering have come together to create UKI – the Utility Kinetic Insect.
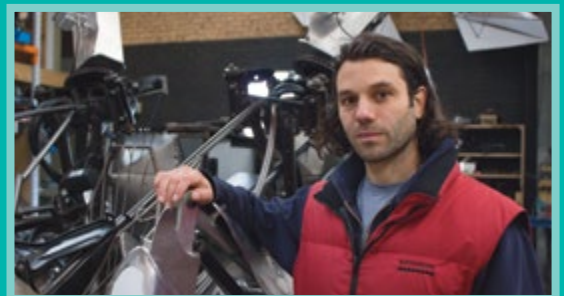
>> *Callan Morgan*

>> *Racked up - PC, amps and monitoring*

According to its creators, the Utility Kinetic Insect is "An interactive kinetic sculpture animated by electric actuators. Her exposed metal exoskeleton, robotic articulations, lighting and surround sound system amalgamate to describe an entomological creature from a prehistoric future." In the flesh, she is a serious piece of production equipment; 5 ½ metres long and almost two metres wide, with a wingspan of six meters extended. Her chassis repurposed from a 1980s Mitsubishi 4WD. And just about everything moves with finely crafted robotics using electric actuators.

UKI's wings are a big LED canvas, completely pixel mapped via the on-board PC using a combination of Resolume's VJ software and Derivative's TouchDesigner control and media software. There's content on-board, or VJs can connect to the PC via HMDI. Fibre optics are threaded throughout the body. DJs have a mic and two CDJs to play with, and a small mixing desk. A whopping Yamaha Commercial Audio sound system consists

of seven self-powered DXR12s spread around the body with a main left-right PA of a pair of Installation Series IF2112/95s augmented by an IS125 dual 15" sub. The system is processed with a Yamaha MTX3 and powered by a PC6501N and a PC9501N power amp. 750 kilograms of batteries power UKI, giving it the ability to drive at 10 kmh, or play continuously for seven hours on full charge.

COME TOGETHER

"UKI is a collaborative, self-funded labour of love," said Pelican Studio's Callan Morgan. "I wanted a project all my friends could work on, and where everyone pushed and challenged themselves. Everyone works other jobs; we've got backgrounds from Formula One car designers, to mechanical engineers that have worked in the military. In most areas we have two or three people that share the load, be it lighting or IT."

Callan's background as an engineer is slightly surprising; "I come from the circus," he explained. "Firstly performing, and then engineering. I've had a lot to do with Circus Oz, and I've made equipment for the major circuses. I set up Pelican Studios three and a half years ago as a place for me to build, and then to bring my friends together under one roof to inspire collaboration. UKI is the first major collaborative project we've done in the space. It was built with some people I'd worked with before, some we met along the way, and other friends with similar interests."

>> *Ready to pounce*

>> *Recycled from a 1970s XA Ford*
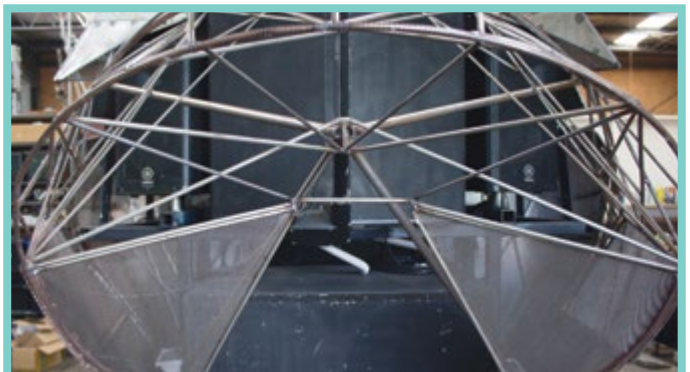

>> *UKI lights up*

MOB RULE

To facilitate and expedite collaborative projects made by shifting personnel, Callan has created Make Mob; an umbrella for UKI and future projects. "The model we're working to is everyone logs their hours and then that hour equates to a percentage ownership," Callan outlined. "Once the build costs and overheads are covered, the profits will be distributed to the owners. The idea is that through Make Mob, you can either leave the profits in to fund other projects, or invoice them out. It's a stepping stone project to inspire more projects, and an entity to deal with other entities."

The Make Mob model addresses the administrative, logistical, practical and promotional problems of collaboration. "It's hard when you're doing a collaborative project" continued Callan. "Individually the people might be known, but together they haven't done anything before. The beauty is that Make Mob is dynamic. You run as an entity and you pool all of your previous projects and experience. There's a certain level and calibre required to run a Make Mob project; you have to run a project that falls within the criteria of sustainability, combining art with technology, and innovation."

COLLABORATE AND LISTEN

Pelican Studios itself is set-up to foster innovation. "The warehouse is separated into studio spaces that people lease," illustrated Callan. "The layout is open so everyone can see what everyone else is doing. And that breeds collaboration, feedback and inspiration. There's about a dozen people working at Pelican at the moment."

One of Callan's long-term collaborators, and co-creator of UKI, is Melbourne electronic musician and sound designer Spoonbill, a.k.a Jim Moynihan. "Jim is an old friend of mine," said Callan. "He originally studied industrial design, so he's a great designer and good on the tools. We conceived the idea of UKI five years ago. Originally, it was a little pedal powered thing, but it grew from there. Jim's had a lot to do with the build and the sound system. Jim is endorsed by Yamaha, and that's how they got involved in UKI. We met with their Commercial Audio Sales and Marketing Manager Mick Hughes and showed him the project. He said "You need some kit to play with!" and the next day couriers arrived with roadcases full of gear. That way, we were able to test multiple systems and configurations."

>> *Yamaha Installation Series flanked by DXRs*

ON THE ROAD

As CX visited, UKI was having some final touches before being put in a shipping container to travel to the USA for the Oregon Eclipse Festival before heading to Nevada's legendary Burning Man Festival. "Eight of us will fly over and truck UKI around," stated Callan. "There needs to be four of us present when it's running for crowd safety. The premise behind UKI is that everyone in their different fields have the time of their lives when they're using it. When the DJ is playing, the sound is amazing, and the sound boffins are happy. If lighting, VJing or robotics is your game, we aim to impress."

Between the core team of 10 working on UKI and input from other collaborators, 20 creators were involved overall. "Now UKI is finished, we can focus on promotion and getting it out there," Callan concluded. "Melbourne Knowledge Week and the Melbourne City Council recognised UKI as a significant piece, and used it as a showcase in their festival. It's created an example of what's possible in Melbourne with local spaces and people."

>> *UKI performs at Organic Audio with Jim & Bear*

Winter in the Zoo
Vivid lights up

Vivid Sydney's wildest precinct Taronga Zoo Sydney is lit up once again for Australia's most colourful festival.

For the first time, Lights for the Wild is a fully interactive and immersive event allowing visitors to experience and interact with the animal light sculptures with a state-of-the-art wristband that lets you become a light for the wild. Mandylights, who officially distribute Pixmob's LED wristband technology, supplied control architecture across the 1.2km walking path, dividing the zoo into 17 zones of interactive lighting effects. Over 100,000 wristbands supplied to all guests and were recycled at the conclusion of the event.

Ten of the giant multimedia animal light sculptures from last year were retained with five new animals introduced including a marine turtle, a swarm of tiny buzzing bees and a giant Port Jackson shark.

Ample Projects create the lanterns with Mandylights in charge of all of the site lighting and associated creatives. Providing the base for the site lighting are 148 x ShowPro Hex LED PARs, 24 x ShowPro Hex36 LED Floods, 80 x Mandylights mPar, 90x Mandylights mPixel RGB Underwater LED and 2,400 x Mandylights mSphere LED Balls.

"Wherever we needed colour washes, trees uplit or even giraffe enclosures illuminated, there are ShowPro Hex LED products," said Richard Neville, managing director of Mandylights. "They are our resilient and reliable base to the whole lighting project. They have a great colour range and as there's an area that is all UV, we've been able to use the UV in the PARs to augment other traditional UV units, which is fantastic."

For this year's project, Mandylights purchased 36 x Nitec Ripple Multicolour LED Water Effect fixtures, a product that Richard says is better and brighter than similar products four times the price!

"We needed as realistic a water effect as possible and the units are small enough and light enough, to be thrown

anywhere and rolled out when required," he said. "They really were a good buy. They're used in an area where we needed to create immersive water effects and the quality of the effect you get out of the Nitec Ripple unit is arguably better than anything you could get out of an ETC Source 4 with a gobo."

Other effects are created with 120 x Eggstrobe, 32 x Custom 1.8m high LED flowers, 140x Mandylights mTubes, 6 x Altman UV Fresnel, 33 x Panels Custom Green LED Mesh, 12 x ETC Source 4 Zoom, 8 x ETC Lustr2 Source 4 LED, 240m of Festooning, 24 x Geni Shimmer and 1,400x Mandylights Wisp Pixels.

Look Solutions Unique 2 hazers, JEM ZR44 foggers and a couple of bubble machines reinforce the underwater environment which is dominated by the gigantic Port Jackson shark.

"We have Unique 2 hazers buried all over the zoo!" laughed Richard. "They're underneath cable car stations, in

The zoo has a fantastic power infrastructure that allows power anywhere on site which is invaluable for creating site wide installations

CREW

Mandylights Designer for Ample Projects - Richard Neville

Mandylights Production Manager - Jean Pierre Jammaers

Project Manager - Declan Wood

Lighting Crew - Jasper Brinkhoff, James Harling, Luke Parry, Andrew Gardiner, Josh Wright

buckets underneath bushes ... there's atmosphere everywhere. There are some areas along the 1.2 kilometre walk that just have Profiles with rotating gobos coming through clouds of haze and these form haze filled tunnels that transition people between spaces. It may sound simple to us, but it has proved very popular with visitors."

Five towers located on the concert lawns are each topped with a Clay Paky B.Eye K20 with Richard commenting that they are using them to their full range and capability.

"We found that the graphics effect from the B-Eyes do a really complimentary 'bubbles rising' effect and swirling around with the cool B-Eye effects," he added. "So they spend some time doing these bubble and lens effects, but then they also operate as a powerful wash with the ability to focus in on areas at different times."

The Claypaky Sharpys are used as 'response beacons' to what is going on in the city. Usually, Bradley's Head is viewed from the city as a dark peak but during Vivid it lights up and the Sharpys dominate from their prominent position.

During programming, the Mandylights crew can be seen driving all over the site whilst hanging out of the back of the buggy with an MA console. They program each area, flash it to the record and then every area runs independently as required.

"As the site is so large, there is no line of sight control anywhere," Richard said. "We have WDMX in some areas, ArtNet in others, but mostly it's a collection of standalone installations that are all programmed on their own loops with various interactive triggers. We've used everything from an MA Lighting grandMA2 light console down to computers running NPUs and also ELC ShowStores. So many of the installations exist in little nooks in the garden or between animal enclosures, where it is just not possible to have a console, so we came up with a combination of ELC ShowStores, Nitec DMX Recorders and various onPC nodes."

The zoo has a fantastic power infrastructure that allows power anywhere on site which is invaluable for creating site wide installations, but the one problem is data especially as it is not suitable to run cables all over the site. Mandylights used Wireless Solutions WDMX (12 x Micro Receivers and 2 x Transmitters) to bounce data around the site which works very effectively. The WDMX also helps make the infrastructure as invisible as possible thus improving the visitor experience.

Invest in a mine!
Pump and Dump

Most people don't have much other than maybe a self managed super fund to invest. Having lots of lazy noodle lying around is incompatible or impossible, especially when you now have to pay $350 for a crappy room in a Sydney share house. Just to survive.

CX often contemplate investments, wandering around the highways and the byways of legitimate and lesser schemes and scams. No one leaves their money on term deposits any more, with returns less than 2.5% from the big banks.

A super good share broker can get you a pretty safe portfolio that will return around 5% via a mixture of growth and dividends, but like always, that is a medium to long term game, with possible lean periods (such as 2007 – 2010, that annoying Global Financial Crisis thing).

Until about now, buying rental houses in secondary markets worked quite well too. I met a retired roadie with 22 properties! The freaking smart and unassuming guy had a strategy. He would go for a road trip, and check out country towns. If there were 2 fast food chain stores, all 4 major bank branches, a shopping mall and some kind of regional employment security, he would buy a house there that same day. Usually the rent was 0.1% - that's the magic number. Pay $250,000, get $250 per week.

In Sydney you pay $1.5 million and get $850 a week. That makes no sense.

"The first four houses were a struggle", he said. "Then market growth meant I could borrow against them for the next deposit. It just rolled along!"

Note that some dumb investors rushed in to mining towns in the boom, and paid much more that they should. They got some high rents, then the mine either wound down; or the development was completed; or the mining company suddenly decided not to hire local and to use FIFO. Crash!

So where do the smart guys, them ones who ride expensive pushbikes in packs dressed in designer lycra, invest their loose cash? The guys who pedal furiously half a click to the coffee shop then sit there talking money with little blankies on their laps. Then they peddle furiously home and clip clop inside, so the missus can see a faint veneer of perspiration on their expanding pates.

A cycling mob in Brighton didn't need to go far, according to court transcripts last month. They piled into a thing called Cleveland Mining Group. This Perth firm ran a straightforward exploration operation, and innocently appointed the Millionaire's Factory (Macquarie Bank) to raise some extra money to look into what lay under their new tenement in Brazil.

So far so good.

Macquarie don't hire hombres. That's the kind of moron you find at outfits like Ashe Morgan – Google them to read of how some of their senior guys mistreat their wives. I fell off my chair – imagine requiring that a wife watch porn so she can be better instructed for her daily duty?

No, Macquarie hire real men, who know how to make money. In turn they have real personal assistants, to do the yucky stuff while they quaff and strut.

The guys at Cleveland were in turn delighted, then mystified, then horrified as their share price leapt up. Several Mac men were very busy talking up the stock to their 'friend' circles, including the riders, and other Mac clients. They were buying the stock as well, indicating a lot of certainty and creating a sense of occasion.

But the court heard that a mysterious blogger, 'Troutfish007' was posting on a mining gossip site called Hot Copper. This person was leaking info that would later be released to the stock exchange. Meanwhile an 'independent' source had valued the tenement at over 3 billion large.

Greed begets greed, and eventually the bubble burst when word got out that under the jungle soil lay just soil - and worthless rock. The guys at Cleveland were rightly devastated, especially as they could see what had just happened to their shareholders.

The activities of the Macquarie guys has now led to court action by a Ballarat investor who had lost $4 million on the stock.

Cleveland Mining Group managing director David Mendelawitz told Fairfax: "We thought we were covered, we had Macquarie Bank in our corner. But we didn't, we had a few blokes pumping up a stock and when their network ran out, it all fell over."

As the case unfolded a separate action loomed over the bank, relating to this same account. Two of the bankers named in the first case are accused of spiking the drink of a colleague on a trip to the mine in Brazil. They plied the victim with valium and laxatives, and drew on his face with a texta, in an attempt to discredit him. They then (clever boys) sent emailed photo's back to their buddies at the Millionaire's Factory. The victim is taking civil action after the bank refused to reprimand its bankers.

David Mendelawitz was an eyewitness and was again quoted in reports, saying that the bankers 'behaved like complete dickheads', and 'it was malicious'. He is prepared to swear an affidavit in support of the drugged former Macquarie staffer.

The bankers concerned have issued legal threats against the media, who (like here) tend to report this kind of thing because it is before the courts, and because if proven true, it is outrageous.

Macquarie of course told the press that they take everything terribly seriously, and investigate anything bad really properly. Naturally nothing currently under litigation can be discussed. Yada yada yada.

The case may fail or succeed, but the sharp dudes will still do what they do best. And give the yucky stuff to the girls to deal with.

There's a myth embedded in the minds of countless musicians and engineers worldwide: that hit singles are always about complicated arrangements, sophisticated technology, enormous track counts and endless refinement, all of which is far beyond the capacity of mere engineering mortals. They are not. Some of the most successful songs ever made are quite simple, and achievable by almost anyone.

LISTEN HERE
KEEPING A LID ON IT

ANDY STEWART

When you're tracking a song, never think for a moment that the number of sounds and instruments you lay down is somehow proportional to its 'professionalism' or potential for success. This is a myth perpetuated by magazines, fan forums and people who know jack about album production.

Some of the best songs are the simplest. And if I'm to reflect on the last 30 years of working in a studio with songwriters and bands, I can honestly say that I can't think of one song that became successful by virtue of how complicated it was. Conversely, I can think of dozens that were far too complicated for their own good.

While there's no specific proof of any link between a song's overly complex rendering and its lack of commercial success, there's no doubting that endless tracking-laying and mixing makes a song harder and costlier to produce. There's also the risk – commonly associated with elaborate productions – that the final mix can lack focus and punch, despite your best efforts and talents.

Simpler arrangements of songs make them cheaper to record, easier to mix and potentially more inviting to a newly acquainted listener. While walls and/or oceans of sound might seem cool to the producer and band, to a listener they can often be oppressive and overwhelming. But more importantly, like a Formula One racing car, overly complicated song productions can be harder to steer, and sometimes almost impossible to nurse over the finish line, especially for the less skilled engineers amongst us. And let's not forget just how many tracks those famous 'Wall-of-Sound' productions of yore often had at their

disposal – eight tracks… sometimes 16? They certainly never had 100-plus!

This is not to say of course that complex recordings, elaborate multitracking and massive mixing projects are, musically speaking, somehow intrinsically bad. I'd never assert that. On the contrary, some of my favourite albums of all time are extremely dense with ideas, and wildly diverse in their production style. Heck, I'm guilty of it myself.

But the vast majority of tracks out there are not like this.

THE MIDDLE GROUND

There are two basic ways to achieve the 'middle ground' during a song's production. 1: by resisting the temptation to add endless tracks or experiment with every possible option; and 2: by editing.

There's no right and wrong about which path to take here. It's entirely up to you.

You might choose to experiment with sounds and musical parts to see where your intuition takes you. After all, very few of us can hear a finished outcome in our heads like Beethoven, and let's face it, there's no telling where sonic experimentation might lead. You might – while tracking the hundredth part – hit on a sound that's truly groundbreaking, and perfect for your song.

Or you may not. Producing is a bit like gold prospecting. You might find a giant gold nugget after only a modest amount of effort, or you might slog your guts out for weeks only to end up with a giant slag heap. The question is simply whether you think this approach is a risk worth taking.

Then there's the alternative (which comes with its

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

own set of risks) – making arrangement decisions as you go; severely limiting the sounds you're prepared to incorporate into the session file as and when you encounter them. In some ways this is the more efficient method, since it minimises the need for so much editing and remixing later. But by adopting this approach you mightn't like the feeling that's sometimes associated with it – the nagging doubt that says: 'If only you'd experimented with some of those sounds further, we might have hit the jackpot!'

If you're overwhelmed by regret of what might have been as you sign off on a song, perhaps you need to be more of an experimenter/explorer type. Just make sure you also become a ruthless editor along the way. Otherwise you'll end up a musical hoarder.

RISK VS REWARD

Either way, the place to hopefully end up is somewhere inside this middle ground. The question for each one of us is simple: which approach poses the greater risk for the greater reward?

To me the answer typically lies with the song and the artist. Which approach to choose might be a decision outside your remit as the producer or engineer anyway. But even if the choice is yours, it often pays to look at the song itself, and work with the artist to form a basic plan of attack.

And before too long it then pays to contemplate a rough, to see what that process suggests or exposes.

Often there's no clear sense of a production's final direction until a rough mix is attempted. If you're open-minded, this process will often clarify a few things very quickly, by answering a few questions sonically rather than intellectually. A rough mix is a bit like pressure testing a pipeline: seeing where the leaks occur and what pipes burst often helps point you towards the production's finish line.

I'd happily assert that much of the real song editing (of playlists, arrangement, timing, pitch and so on) is prompted by just getting on with things and mixing in earnest. These days when I'm sent a song or album to mix, the gloves come off immediately, and unless I'm specifically told otherwise, I simply follow my instinct and use any or all of the methods and tools at my disposal to achieve the desired outcome. Editing becomes merely part of this process; involving individual instruments or sounds in whole or part one minute, and timing of the performances the next. This is also true of mic arrangements. I will often discard, either in part or in full, several mic options that are extraneous to my needs, rather than attempt to use them all.

THE THIRD WAY

But of course there is a third way, one that's blindingly obvious: just record what the band performs when it plays the song! It doesn't get much simpler than that, and yet somehow this has become the least common approach. Once upon a time it was the default method of song production, give or take the odd overdub.

This approach can often be sublimely fast and effective (who would have thought?) so don't forget this option if it's available to you. It's often the least controversial, most direct way to approach a song's production.

Whichever approach you take to capturing a song and rendering it in its most favourable light, never lose sight of the finish line, and never convince yourself that complicated means sophisticated. Be true to the song, track as you see fit, and edit with discipline. And remember: the one with the most number of tracks rarely wins.

SHOW REDUNDANCY – IT'S NOT ABOUT IF, BUT WHEN!

By Simon Byrne

Technical difficulties: you'd expect them at a five-bands-for-five-bucks bash at your local, but when they happen at prominent or world class events, it is a serious problem. A few recent high profile event failures have highlighted the need for better redundancy in show systems. Particularly as systems are increasingly more complex, and now highly reliant on data networking and computerisation. With the advent of social media, a failure is big news.

Radiohead's PA System failure at Coachella this year is a case in point. It brought worldwide coverage but remarkably it seemed that there was no readily accessible backup system when the AVB link on the Avid E6L processing engine failed between Front of House and the stage. Ugly.

Avid's Senior Market Specialist Robert Scovill, is also Tom Petty's FOH Engineer. He is mixing the current tour on an Avid S6L. His FOH setup includes a second backup E6L processing engine. He cannot do a seamless switch over so another S3L desk is standing by with mix stems already setup from the foldback department. Yes, the guy from Avid tours with 2 backups at FOH.

Lighting guys have done this for years. Until recent times, lighting desks have been routinely flakey so there has always been a spare standing by, ready to go.

However production systems are rarely fully redundant in the true sense and in all but the biggest of events, the budget does not permit fully redundant systems. Risk assessments need to be done.

When planning for what can go wrong on events, an assessment needs to be done of what you or the client are likely to put up with in terms of failures. Do you need to guarantee a perfect seamless gig every time? That gets expensive because more equipment and labour is needed. Or can you get through with say a 10 minute downtime? The budget for a small community gig combined with the rarity of an audio desk failure may mean the cost of carrying (or renting) a couple of $20,000 consoles may not be financially viable.

A great solution in these cases is to have an emergency mix setup in the foldback desk. That way when FOH fails for whatever reason, just plug the foldback desk into the FOH speakers and away you go. The system might be off for a few minutes but in the context of the event that might be okay, if undesirable. An old analog desk can sit in the truck for the same reason.

The key is to have properly thought through and tested options for when there is a failure. Because there will be a failure...one day.

There are some simple redundancy/risk management solutions that should be on every show:

Calculate and spread the total power load and ensure that you have not just enough, but plenty to spare. Running close to capacity means you run the risk of losing a circuit, but also voltage drop which can lead to problems with equipment being underpowered. Also, inductive loads (transformers, motors etc) will initially draw substantial inrush current, up to 10 - 15 times their rated draw for a couple of cycles (about 40 milliseconds). In the event of power failure, your power supply system needs to be able to cope with that initial massive draw of your whole rig without tripping the supply breakers.

I always use a 3 phase distribution board even if I know my total load is under 10 amps. It means I have a 40 amp supply and circuit breakers are immediately accessible to me. Talking

of breakers, find out where the house breakers are, inspect their rating to ensure they are adequate, and get the number of the person with the key to the electrical cupboard in case of them being tripped.

This leads to basic power management and distribution. Don't leave yourself exposed to something being overloaded or something being able to be kicked out. On my shows, the distribution board is always up on a case ensuring that plugs cannot be kicked out. Investing in good power cabling and distribution is worthwhile.

In Australia, I've had more problems with uninterruptible power supplies (UPS) than I have had with the actual power supply. Power supplies in equipment are really good nowadays so it could be argued that with the complexity and more connections of the UPS, it has added risk so there needs to be a real reason to use them.

Therefore, I only use them on devices that need to boot up and don't have their own battery. Laptops have their own batteries so I won't unnecessarily load up the UPS with them. However, a digital mixing desk which takes 20+ seconds to boot up, absolutely is on a UPS. It means a 1 second power dropout recovers straight away because the desk does not need to reboot. In Asia and South Pacific the power is variable and a UPS is critical.

RJ45 connectors are an inherently rubbish connector from both a mechanical and electrical tolerance point of view for what we do. As is Cat 5e/6 cable. Through clever design, the designers have managed to stuff a massive amount of data through it cheaply, but it is fragile.

Yet it is the standard which we are often forced to rely on in our high abuse environment. It is prudent to use shielded cable for it's mechanical protection. You don't really need the shield for electromagnetic noise rejection in this instance (it can actually reduce the data performance of the cable) but it is really useful for mechanical protection. Ethercon shells should always be used to limit the damage to the RJ45's.

For mission critical applications, run two cables. Cabling is a big, if not the biggest point of failure. Even if your equipment won't permit redundant connections, it is very worthwhile to run two anyway so that should your primary line be damaged, you can quickly changeover.

Never, EVER update software or firmware on show days. There are countless examples of this not going well. Your day is stressful enough and you don't want to find incompatibilities mid show.

Two microphones on the money sources - It is always great to have 2 microphones on a lectern or 2 wireless lapels on a presenter. If one goes noisy, simply switch over.

There is no point in having redundant systems if they are not tested properly. This is absolutely critical as there will be some surprises and it is better to experience them when it doesn't matter. It is amazing the amount of supposedly failsafe systems, that fail badly.

I often see overly complex rigs which in my view, the complexity does not add much to the final result. That being the case, costs and the risk of failure has been increased for little or no benefit. Are the added features worth the increased risk of failure? If not, don't do it.

It's not a matter of if, but when you have a big ugly, embarrassing failure. Are you ready for that day?

Yes, Radiohead now tour with two desks.

With several ARIA music awards to their name, Sheppard are back on tour

Sheppard

BY CAT STROM
PHOTOS: CARBIEWARBI

Sheppard, Australia's fastest rising indie pop rock sensations, performed a handful of shows ahead of their new album release and tour of the UK supporting Little Mix. The three show run was in support of their latest single called Keep Me Crazy. Chris Braun acted as FOH engineer and Production Manager, having been with the band for a couple of years.

"It all started when I got a call from the Chugg office asking if I'd be interested in doing a show with them," he commented. "They had a festival headline coming up and their regular FOH engineer wasn't available, so I jumped on board to cover it.

"The first show was pretty stressful to start with, a couple days out I get the call informing me that the man himself, Mr Michael Chugg will be attending the show but that he'll probably stay with the band backstage."

Chris soon discovered that Chugg isn't like most managers he's worked with who watch their artists from the side of stage, missing the actual show. Chugg is out front, watching, listening, taking in the reactions of the crowds to changes in the set and making notes. He hears and sees all first hand and is across everything.

"It's about 9:30am and the soundcheck comes around and we're in the line check, getting everything sorted," Chris said. "I'm starting a fresh file on an Avid Profile and as expected, it's all a little shaky to begin with. The sounds are good individually but it's certainly not a mix yet. Then, out of nowhere, Chugg appears next to the console, he doesn't say a word, he just stands there for the next twenty minutes while we work through the check.

"I'm sweating figurative bullets. The rhythm section starts jamming and I start to pull a mix together, it starts coming together pretty quickly and right as I think to myself 'ahhhh there it is, now we're cooking' he turns to me, gives me the thumbs up and heads backstage."

From then on Chris was taken on as the band's regular FOH engineer. They were all one offs to start with, given they were at the end of their Bombs Away album cycle, but now with album number two on the way, Chris was asked to come on board as FOH engineer and Production Manager.

Earlier this year, Sheppard supported Justin Bieber on his stadium tour of Australia, a tour that Chris describes as an absolute killer.

"We didn't really know what we were walking into doing something like that, something that big," he revealed. "I mean, it's as big as it gets but to our total pleasure, everything about it was just amazing."

Chris reports that the Bieber crew couldn't have looked after them anymore than they did saying that his FOH audio team looked after him as if it were his show and his PA.

"The Bieber team wanted everyone to have a good time, it was all about respecting each other and the gig," he added. "For example, I didn't expect that we'd be given access

Earlier this year, Sheppard supported Justin Bieber on his stadium tour of Australia

to use the catwalk and B stages but I had a chat with Biebers Production Manager, Chris Gratton and to my surprise, we were allowed to use the whole thing. There were no egos being tripped over and with it all coming down to respecting the gig and each other, we were allowed to use the catwalk on the proviso that "if any of your guys step out of line, I take it away"… pretty fair to me!"

Prior to the three Australian shows, Chris

had put a lot of new systems in place, building a full monitor rig, new console, RF package and bespoke touring systems for all as well. The gigs were great for the crew to iron out a couple of things and be ready to move forward with a completely dialed system.

Chris says that mixing Sheppard is pretty different to anything he has ever done in the past, particularly as he hadn't done much pop before so it took him a little while to find the right way to mix them.

"After trying a couple different approaches, I took a page out of Pooch's (Bieber's FOH man) book, taking successful influences and treatments from past tours I'd done of different genres, putting them together and am mixing it like an in your face rock gig!" he said. "I've effectively taken the big drums and guitars sounds I had for The Rubens, playback and crisp vocals from Vera Blue and bottom end … well I stole some new tricks from Pooch!

"It all goes together to create a sound that you wouldn't expect from a band like Sheppard, even management and the label didn't see it coming when they saw the new show for the first time but they are loving it. We really do pin you to the back wall!"

The main thing with this band is that there are two very different lead vocals

The main thing with this band is that there are two very different lead vocals. Some songs George takes the lead while on others, Amy has the key vocal. There are a couple tracks where it's 50/50 as well. Ensuring there is always a balance of the two is really important.

"If we are in a song where one of them has the lead, I reduce the other singer in the PA a bit. Not quite to a backing singer volume, but certainly not the full lead vocal volume. I've seen a couple bands that have two lead singers and find it really unnatural when both vocals are kept at the same volume the whole show, even when one singer is clearly the lead for one particular song and the other is doing backing vocals.

"I'm also not doing any scenes for the show, I have them there but found that I wasn't as "in" the mix as I am when I'm just mixing the show, setting what I know needs to be done at the start of each song as they're talking to the crowd. There aren't a huge amount of moves, I mix the show from the VCA's 85% of the time

and have a couple FX that get turned on and off on vocals for a couple songs."

Chris comments that he finds he gets disconnected from a mix when he has scenes, regardless of how much the scene recalls may or may not be doing.

"I'm pretty active on the console from start to finish, there is definitely no standing back and drinking a beer," he said. "I have fingers on the console at all times, moving with the band creating overall dynamics, highlighting sections or particular lines in the set especially when we're doing the big capacity rooms and stadiums."

For the three shows, Chris ran house PA's and consoles with each of the venues housing Avid Profiles or SC48's at FOH which meant he could keep his show the same between venues for the most part. Moving from a Profile to SC48's meant he had to rejig his plug in assignments and run with the bare minimum with primary inputs covered and a select few output buss' rather than his usual buss processing.

"Normally I would have a Midas console at FOH but with this UK run coming up with Little Mix, I'm going to be on a Profile so I wanted to have a dialed show moving into that tour as we'll likely have minimal time to make noise through the PA," Chris explained. "With where the show is at the moment, I am confident in taking it from the 1,200 cap clubs to the 20,000 cap stadiums this show-file will be loaded for next."

Chris' rack of toys that travel with him include a TK Audio BC-1 buss compressor taking care of the LR bus, a Smart C2 across both George and Amy's vocals and an Antelope Isochrone OCX Master Clock lining up all the pesky little Avid ones and zeros.
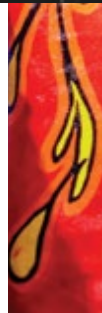
They can go out in front of the PA with no worries at all and still have a natural sounding vocal

"At nearly every show I get asked why I'm using the BC-1 over LR instead of the C2 and there are a couple reasons, but honestly I just find the TK Audio friendlier and smoother when I'm asking it to hold everything in place gently."

Chris says that the C2 split into dual mono on vocals is great; predictable, clean, transparent and precise. In fact he says it is everything he wants in a live vocal compressor and its 1RU! George and Amy can spend a lot of their time in front of the PA - whether it's on top of subs, out on a catwalk or just in the crowd, and Chris needs predictable results because half the time he doesn't even realize they've left the stage.

"I just look up and they're nowhere to be seen, I can still hear them but for all I know, they are about to stand directly in front of a monster PA. I need to know that they can walk past the main PA and out onto the wings of the big stages and it'll all be ok."

The rest of the processing is a combination of the Avid EQ and Dynamics with a few Waves plugins used on key input channels like vocals, guitars, drums, bass, outputs and FX.

FX wise, Chris keeps it pretty simple; a reverb for the drum kit, a medium verb that is mainly for instruments like the acoustic guitars and a vocal verb. Delays are just a slap delay and a tap, all from Waves.

"I find this set up loads across Profiles and SC48's nicely with the reduced DSP available on the SC48," remarked Chris. "When I've got my tour spec Profile, I add a few extra things. Some chorusing and doubling FX for vocals along with some stereo width tools to widen the image of things like playback and acoustics.

"On Bieber I tried something new which

worked pretty well. A buddy of mine sent me the impulse response libraries for basically every reverb unit known to man, new and old. It's the mother-load! So on the Bieber tour I ran Waves Multirack on my laptop with several instances of Wave IR-1 Live which is a convolution reverb that you can load in your own impulse responses. I basically ran Bricasti M7 and Lexicon 480 verbs on everything and it

sounded brilliant.

"I may look at doing this on the Profile in the UK depending on how many DSP cards end up in my desk but it really was beautiful."

The on stage microphone kit was relatively standard with the usual suspects found on most things. There were D-Drum triggers on the kick, rack and both floor toms to key the gates on the respective channels. Dean, the drummer, is a pretty heavy hitter at times and Chris found that he couldn't gate his drums nice enough to get rid of his cymbals without having to make the gates super tight and short.

"To me, that just sounds unnatural and all kinds of bad," he said. "Gina Hanlon on monitors was experiencing the same issue with Dean's IEM mix so we needed a solution. The triggers thing is something I'd done in the past, I can't remember with who but it's a brilliant fixer and allows us to completely shape the envelope of each drum gate to exactly what we want to hear because the gate isn't being triggered by the microphone itself. It's being triggered by the very precise, very consistent trigger "click"

which means that other sounds that come through the mic while the gate is open, don't actually effect the gates characteristics unless he hits the drum again."

On vocals there were Sennheiser 2000 series radios with MD9235 capsules with Chris describing the capsules as sounding incredibly natural while having a great amount of ambient rejection. They can go out in front of the PA with no worries at all and still have a natural sounding vocal.

Monitoring is nearly entirely via in ear monitors with the exception of a pair of wedges as one of the guitarists, Jay, likes to have a little of both the IEM and wedges. This is his first run moving to IEM's as he's always preferred having floor monitors, however Gina Hanlon has been able to get him comfortable enough to do both.

The IEM systems are again all Sennheiser 2000 series with six sends on stage, Gina's cue send and an LX mix as well. There are no sidefill mixes or drum subs, it's a really clean, quiet stage. No one is running any crazy amp volumes although Jay's level can get up there a bit if Chris doesn't check him here and there!

"We actually run all of our guitar amps facing backwards which helps clean up the vocals as well," added Chris. "Given they're all monitoring within their IEM's, it wasn't a requirement to have the amps facing forward and it's been working really well, even in the small clubs. The amount of control I have to be able to create a mix out front without fighting too much stage volume is really nice."

For moulds, Chris has brought the entire band over to JH-Audio with Roxannes being the weapon of choice. Chris says that the Roxannes

Mike MacDonald of Twenty Twenty Creative made a small show look very big

are amazing and are the most natural sounding monitor he's come across by far.

"How they've managed to fit all that gear inside and keep it phase coherent is beyond me!" he laughed.

Mike MacDonald of Twenty Twenty Creative was brought onboard to do what he does best; design a show on a tight budget that looks way bigger than it actually is! Mike and Chris often work together as they run a collective studio in Melbourne.

The lighting design is based on the first show at Eaton Hill in Brisbane, with Mike adapting the venue's standard rig of sixteen Martin MAC101 and four MAC Aura to suit the remaining gigs.

"I always think how I'm going to scale the show, especially with the band Sheppard as we could go from clubs and theatres to stadium shows very quickly", said Mike. "The band has never had a touring LD or anyone to design their shows, so we created a starting point with the first show. I then elaborated on that first show, picking MAC101 and MAC Aura as my workhorse fixtures. As we grow this show, I can clone these fixtures quite easily."

The rig is mostly LED based with the exception of six Claypaky Sharpy which are placed on the floor, one at the base of each of the six truss towers upstage.

"I wanted to create some varied heights onstage rather than just straight trusses," Mike said. "Without using the rear truss and only the towers, it creates an inverted V onstage."

A little past half way up each truss tower is a Martin Atomic 3000 strobe with a 4-lite linear blinder above that, topped with a MAC Aura. Located on the floor behind the backline are five MAC Aura, with the six Claypaky Sharpy placed at the bottom of each tower.

"I've tried to create some big fan looks that really capture the moment," added Mike. "In fact when the band saw the renderings of the show, they questioned if the show would fit into the venues they're playing! Sheppard are all about those big singalong moments so we also have big molefay looks."

The back truss has eight MAC101 and more 4-lite linear blinders whilst the front truss holds six MAC Auras for key light.

Mike owns an MA Lighting grandMA2 command wing but it is currently on a long term hire to the film industry so he had to hire another for the tour.

"I hired one for eight weeks from Matt Downs at SWS as I have six projects on the go at the moment," Mike added. "I want to thank my lighting suppliers Above & Beyond in Melbourne and Chameleon in Sydney and Brisbane. Thanks also to the boys at Additive, for the use of their pre-visualization suite."

THE AVALANCHES

IN THE OPERA HOUSE'S NORTHERN BROADWALK

PHOTOS: DANIEL BOUD

BY CAT STROM

MELBOURNE ELECTRO KINGS THE AVALANCHES TOOK TO THE STAGE FOR VIVID LIVE

The Avalanches kicked off Vivid Live with an explosive performance at the helm of the Opera House's Northern Broadwalk site, making for an electric atmosphere of experimental hip-hop and dreamy pop on the Harbour.

The stage hosted several acts during the festival starting with The Avalanches 'Since I Left You Block Party' featuring special guests DJ Shadow, Briggs, Sampa the Great, Jonti + DJ JNETT.

JPJ Audio provided the audio equipment for the entire festival including a d&b audiotechnik V-Series PA comprising seven d&b V-Series, four J-Infra subs and eight J-Subs with D80 amplifiers.

"The Opera House has some well documented noise restrictions but we did alright with help from the SOH staff," commented Craig Gordon, FOH engineer for The Avalanches. "We didn't get as much sub as we'd like but we still got great levels from the d&b V system. I have a long history of being a system tech for d&b PAs, so it is my preferred brand. Better the devil you know, I say!"

JPJ supplied a console package (Avid Profiles) for FOH and Monitors including Craig's insert rack with three Midas XL-42 preamps which he runs in line from the stage over the snare, top and bottom, over the two vocals and then also over the main playback channels. Added to that are two Smart Research C2 compressors used over the playback group and the drum group. A

Waves Puigchild compressor is used over the two vocals and a Waves BCL over the master buss for a bit of compression.

"I find the Avid Profile console easy to use and although some people say it's not the best sounding console, you can get it everywhere," said Craig. "When I first started with The Avalanches, we had to use a Profile because that was what the festivals used and I was happy with its performance. I like the way Waves plugins work smoothly with a Profile, I also like the DiGiCo consoles although the Waves plugins can be a little clunky."

Craig comments that The Avalanches are a fairly straightforward band to mix for, he basically needs to get a good gain structure and the drums sounding right then it's just minor level and EQ adjustments from there. However he does need to watch the vocals of Eliza and Naeme (Spank Rock) as they dance and move around the stage a lot.

The band recently acquired a Shure endorsement and with that endorsement, they moved to the Shure KSM8 microphones for the vocals.

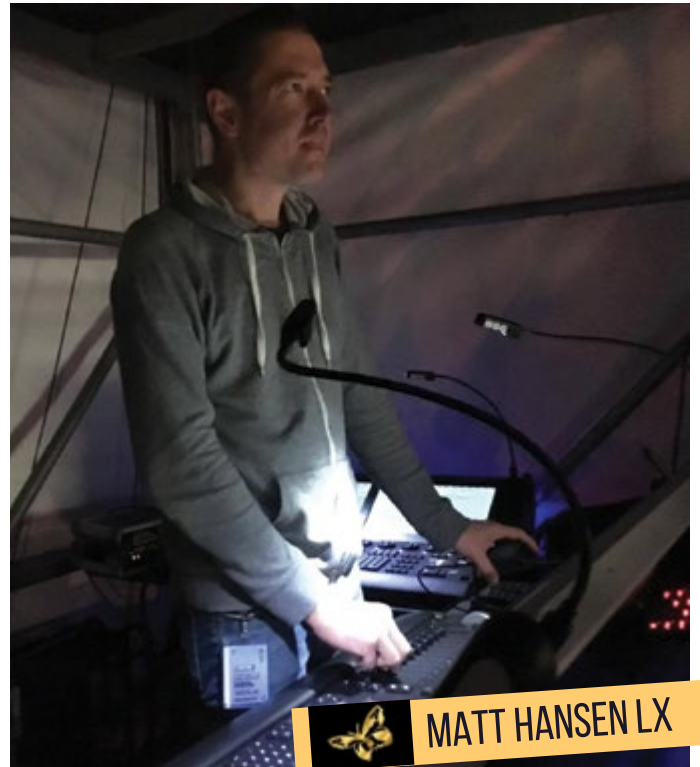## THE BAND RECENTLY ACQUIRED A SHURE ENDORSEMENT

DITTO VIVID LIVE

"The Vivid Live show was the first time we used the KSM8 mics and we seemed to get a nice, clear level out of the vocals," added Craig. "They didn't appear to suffer from the proximity effect as much as an SM58 mic. I've used KSM mics before and felt that they were a bit too bright but these seem to be quite nice."

The band were all on JH Audio JH16 IEMS, however they often pull them out so there are always wedges onstage too. The band's usual monitor engineer Matt (BOZ) Boaro was unavailable for the Vivid shows so Ryan Fallis stepped in running a Profile and Shure PSM1000's, also part of the endorsement deal.

CRAIG COMMENTS THAT THE AVALANCHES ARE A FAIRLY STRAIGHTFORWARD BAND TO MIX

CRAIG GORDON

MATT HANSEN LX

Goldfrapp whip their audience into a disco-glam frenzy

BY CAT STROM

Vivid LIVE

Goldfrapp

PHOTOS: DAVID YOUDELL

Trailblazing UK electronic dance outfit Goldfrapp performed as part of Vivid LIVE in the cavernous railway workshop space that is Carriageworks.

"The venue is amazing!" commented lighting director Marc Thornton. "It's such an interesting space. As with all venues that are in dis-used spaces, they come with their own challenges, but Carriageworks seem to have really thought about things and as visiting crew, everything was as you would want it to be. The local production, Chameleon Touring Systems, were really accommodating. They had done a fantastic job getting everything ready for when we arrived and any changes that we wanted were dealt with rapidly."

Goldfrapp makes pop music of mystery, menace and transcendent beauty. In their exclusive Sydney performance, they delivered strands of underground electronica and sensual melody with mental machine pop at its core.

They brought their full show with lighting designed by Rob Sinclair. The show is very fixture specific and Marc commented that the local lads did a great job at sourcing what he needed. The show is pretty much all floor package so he is always pushing to get as much as he can in.

"This show is a very interesting show to work on, there is a lot of block colour but beyond that there are so many intricate elements that reflect what you hear in the music," remarked Marc.

The show was originally programmed by Ali Pike, another LD that Rob uses a lot, with Neil Holloway programming Catalyst. The show is run on timecode, and this has allowed Rob and Ali to put in elements

that would be very difficult to achieve without it. This then leaves Marc with the big task of making sure that Alison Goldfrapp is lit correctly.

"The whole ethos of this show is that she is an enigma, Rob made this very clear," he said. "We want her to be mysterious, if the audience can see her clearly then that doesn't work. Behind Alison there is a lot going on, we have great flexibility with having both TMB Solaris Flares and Martin MAC Viper Performances. These do the big punchy block colours, but then also give the ability of intricate flicks and stabs that mimic the music. "As I said before, Alison needs to be an enigma. We don't want to see her too much as this would ruin the mystery. When she is lit, she is only ever lit from fixtures from the front truss. The side fixtures are there for the band and to add to the colour wash, they are deliberately focused so they don't hit Alison's face."

The side fixtures are MAC Auras, a fixture Rob often uses as they are very reliable. They are the workhorse of the show and their versatility gives Marc countless options. A central MAC Viper is pretty much solely used for Alison's silhouette. Rob and Ali chose the Viper Performance because of the shutter frames that are in them, they are used a lot to create a thin line that can be rotated in any direction.

"Vipers are a great fixture, I have used them in every show I have worked on for Rob," said Marc. "And there's a reason for that, there are so many variations on the fixture that whatever your needs are out of a moving light, they have it covered! They are bright but not super heavy and are super versatile."

Marc comments that the Solaris Flares are great at creating punchy, bold colour, saying that they are super bright as a wash and the colours are great.

"A well as bold colours, you can get some nice pastels out of them too," he said. "There are a couple of times in this show where we have a full spectrum running across the stage and they blend really nicely together. On top of being a solid wash, they are an amazing strobe. We used the Flares to achieve the ultra-fast stabs that the music demands."

There are only two cues in the whole show that use the flown rig as having everything from the floor really helps with the mood of the show and keeps it mysterious. The performance from the band and Alison is so good and with then creating the bold look behind them, anything more would take away from that mood and making an enigma of Alison. Rob is very clever in his designs, he would much rather turn off lights to help achieve a big shift than turn more lights on. Three columns of LED across the back of the stage show amazing content controlled from a Catalyst rack triggered from Marc's MA2.

"MA is my go to desk," he said. "I've been using it for about five years now and touring with it solidly for the past year. The possibilities you can do with it are endless. You know that no matter how big or small your show is, you will be able to do it with MA. The support you get is also great, so that's a big bonus as well."

QSC K.2
LIGHT, BRIGHT, LOUD!

By Jason **Allen**

Q SC's original K Series took a big chunk of the active speaker market with its power, light weight, performance, and price tag. Believe it or not, the original K Series was developed a decade ago, before the existence of the iPhone, so it was more than time for a refresh. Enter K.2.

There's a comforting familiarity between K and K.2 – same line-up (an 8", a 10" and a 12"), similar power (but more efficient), same weight (though the 12 is 900 grams lighter), and similar voicing. What QSC have changed is the functionality and flexibility. The new DSP has crossover, delay and EQ, plus five user scenes. The second combo jack can take a Hi-Z input, making the K.2s a credible replacement for an instrument amp. There's now a 3.5mm jack input that sums to mono, and level control for all inputs.

The back panel is where the differences are starkest. There's now an LCD panel that you control with a rotary encoder and two buttons. All the DSP functions, input type selection, saving, and loading are done via the screen. It's straightforward and informative, giving you all the info you need on the state of the box on-screen.

There are eight EQ/DSP presets for you to select; Default (flat), Live (more mids), Live Bright (more high end), Dance (low-end extension) Stage Monitor 1 and 2, (mic and instrument, respectively), Acoustic Guitar/Vox (vocal channel one, guitar channel 2), Bass Amp, Handheld

Mic, Headworn Mic, and Studio Monitor (bass extension, tops evened out). Some of these presets are useful, but I found some like Stage Monitor 1 and Handheld Mic to be overly aggressive. Surprisingly, when used as a guitar and bass amp, the K10.2 we had on test performed admirably, something I can honestly say I've ever heard an active PA speaker do before.

Other DSP features include a crossover for use with subs, which can be set to no sub, 80 Hz, 100 Hz or 125 Hz. There's up to 100ms of delay available, which can be read in metres. The EQ is really useful – there's a hi and lo shelf, and two completely adjustable bands of parametric. The EQ is reductive only, which gives you some peace-of-mind if you're hiring it out and worried about someone using it like a gain stage. If you'd like even less to worry about, you can buy an optional blank plate and lock everyone out of the settings.

Connectivity is now via the two aforementioned combo jacks and 3.5mm jack. Each combo jack has a male XLR pass-through, and there's a summed output of all three channels on another male XLR. Under the hood, there's 1800W driving the woofer and 225W driving the tweeter. All three models have a 55 degree wedge profile, which the 8" didn't have in generation one. There are two handles, one top and one side, which

Brand:
QSC
Model: K10.2
Pricing:
$1,499 inc GST
(K8.2 $1,399,
K12.2 $1,699)
Product Info:
www.qsc.com
Distributor:
tag.com.au

usually infuriates me, but the K10.2 is so light it really makes no difference.

All models have coaxial tweeters, and each model has different dispersion courtesy of QSC's 'Directivity Matched Transition', which optimises dispersion according to crossover frequency, with the aim of making the coverage of the woofer and tweeter as identical as possible. This means the 8" is 105 degrees, the 10" 90 degrees and the 12" 75 degrees wide.

If you're looking to install, there are optional yokes, or you can get to the M10 eyebolts on the top and hang them. The K.2s now have two pole mounts – one straight, the other gives you 7.5 degrees downward. The old pole mount adapter system the K's used to give you a downward angle, apart from being fiddly, shifted the centre-of-gravity too far.

Sonically, the K10.2 we had on test sounds much like the original K, but with improved naturalness in the bass. Overall, they feel much louder, though on paper, they're only producing 1 dB more SPL. Their clarity is better, particularly at higher volumes, where the limiter, instead of turning your signal into a nasty crunch, barely colours the sound at all. They are much less fatiguing as a result. Set to flat, the K10.2 is an honest speaker, providing great detail in the mids, and more level than seems possible for a humble 10".

With a six year warranty, optional bags, a locking IEC cable, and a cloth behind the speaker grille for a cleaner look, the K.2s look set to become a reliable, high-quality workhorse for the entire industry. They're easy to lift and transport, and the sonic results are disproportionately good for this price-point.

All models have coaxial tweeters, and each model has different dispersion courtesy of QSC's 'Directivity Matched Transition

PRESONUS ULT15
IF IT WORX
FOR PRESONUS...

By Jason **Allen**

When PreSonus acquired North Carolina's WorxAudio back in 2014, they immediately benefited from more than 30 years of loudspeaker design and manufacturing experience. Three years later, R&D originally started by Worx is now resulting in products branded PreSonus whose sound and heritage are very much more a product of the Worx design philosophy.

The ULT range of powered loudspeakers is the latest Worx-designed product to hit the shelves with a PreSonus badge. ULT stands for Ultra Long Throw, which, thanks to its proprietary 110 wide and 50 degree vertical Pivot X110 rotatable horn, certainly lives up to its name. The ULT family includes a 10", 12", and a 15", which is the model we assessed for this review. There's also an 18" sub. The top boxes are built with a monitor profile, and would certainly make a good wedge.

The wooden ULT range is the next step up from PreSonus's plastic AIR series, and are roughly double the price. They're a solidly built and pleasingly professional box, with a comforting heft to them. They're a bi-amped unit, with the woofer receiving 500W and the horn 150W (peak). While it doesn't sound like much power compared to some competitors, the 136 dB response you get out of them is more than adequate.

Connectivity is via two combo XLRs, one with a PreSonus XMAX preamp and the other line only. They have independent level control, and can be summed to the XLR out for daisy-chaining. The line in also has a separate direct out. In terms of processing, there a HPF and three EQ modes – FOH, Monitor and DJ. The DJ setting is basically a 'smiley curve' that takes out some of the aggression at the crossover point around 1.6 kHz. Simple, but very small and fiddly, buttons on the rear panel enable EQ selection.

Thanks to Worx' horn design, the ULT are incredibly present and detailed in the high end - it's the same horn found in Worx' X5 compact line array. While slightly emphasised at the crossover point, the overall response is detailed and uncoloured, making this a great box for speech and vocal cut-through. Bass response is tight and even, which is nice to hear in a 15", which I often find unnatural around 200 Hz.

We A/B'd the ULT15 with the cheaper AIR15 and the difference in performance in the horns was stark – The ULT throws at least twice as far. The fact the horn is rotatable makes this an incredibly useful box for some tricky applications – it would make a good centre in an LCR system, or would mount well sideways under a low ceiling in a club. With an impressive six year warranty, the ULTs offer commercial performance and peace of mind.

Brand: PreSonus
Model: ULT15
Pricing: Expect to pay $1899 inc GST each.
Product Info: www.presonus.com
Distributor: linkaudio.com.au
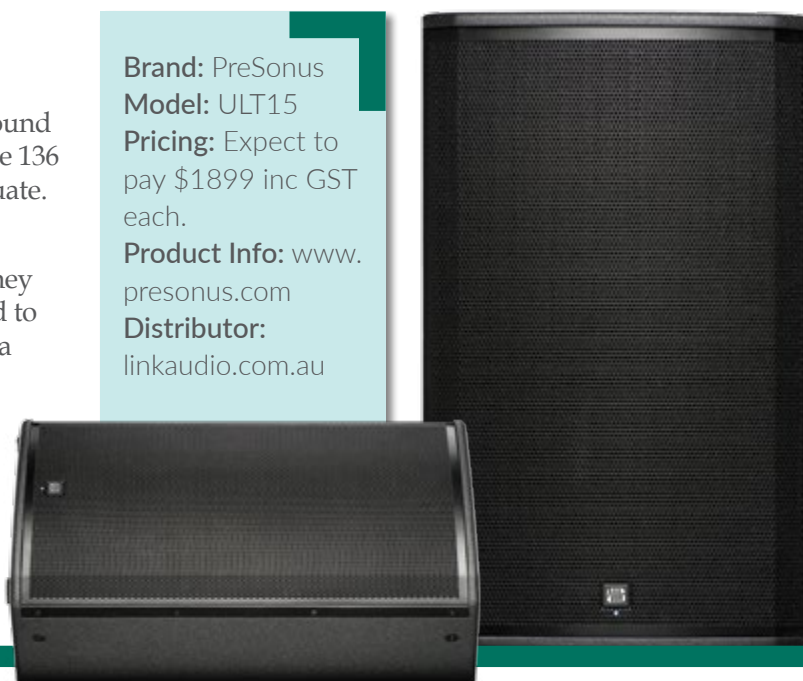
We cover the Australian and New Zealand markets with our touring tradeshows

ENTECH ON TOUR

ENTECH TOURS AUSTRALIA IN FEBRUARY 2018

ENTECH NZ COVERS NZ IN JULY 2018

ACME STAGE BLINDER IP
BL-200 WW2

By Julius **Grafton**

O n some shows, the only thing the lighting operator is actually controlling are the blinders. Someone else has programmed a massive show running on timecode. The operator bumps the blinders on and off to suit the show dynamic.

Those traditional blinders were no more than a pair of DWE 4515 – paired up 110v lamps, each pulling 650 watts. I seem to recall they were the driving lights for enormous diesel locomotives!

Like many things in lighting, blinders can be annoyingly overused. So it helps that the 'new era' digital versions offer much more than the 'on/off' old ones.

LED opens up a whole new world for all forms of lighting instruments, so meet the ACME BL-200 WW2, (which means warm white, version two). The first version did a sterling job, but this version has a new feature. More on that in a mo.

ACME is a huge manufacturer from China who make product for several major brands as well as under their own mark.

Out of the box I was impressed with the fast rigging system which is very versatile. Units interconnect using twist pins that are captive on wires – two at the top, and two at the bottom, so they don't get lost. A spring loaded locating biscuit allows units to be hung and connected together vertically.

You can vertically hang a maximum of ten units. Then you are unlimited in the

Publishing since 1990
www.juliusmedia.com

horizontal. Each unit comes with one hanging bracket which doubles as a handle. This can be pinned to the top, or the side of a unit. The unit weight is 6.8kg.

This is a big deal: these are IP rated, at IPX4 standard– which means it will endure splashing water from any direction. I take this to mean it will withstand random weather events but it isn't designed for permanent outdoor exposure.

With 1, 2, 4 or 6 DMX channel control you can control each engine separately. Using all 6 channels you can dim fine, you have flash rate control, strobe, and overall dimming.

Each unit has two LED engines, at 125 watts each. The pair of LED engines can be angled several steps within the case, so you could have vertical pairs pivoted in different directions. Does that make sense? Check the photo at top right.

Here's the new feature: it has tungsten emulation! From full bore 'blinder' mode in warm white at 2700 degrees kelvin, the Tungsten emulation kicks in during the 16 bit
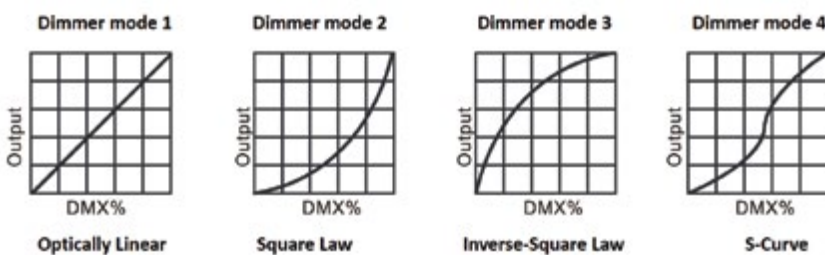
dimming and drops the colour temp down to 1200 degrees k.

With that 16 bit dimming, you have a choice of selectable dimming curves: optically linear; square law; inverse square law; and S curve.

It now has a 3 year warranty.

Once the DWE lamps go out of manufacture (most lamps are on the way out), then a device like this will really take off.

Brand: Acme
Model: BL200WW2
Pricing: Around $750
Product Info: www.acme.com.cn
Distributor: www.ulagroup.com

# TASCAM SS-R250N
ROCK SOLID (STATE)

By Jason **Allen**

I f you're not going to use a computer to record audio, your options are starting to get a bit thin on the ground. There's a lot of peace-of-mind to be had when recording to a dedicated device, and there's a lot of installations that benefit from having a permanent solution bolted into a rack that is dedicated to one task.

> you can also control settings from iOS and Android devices connected to the same network

The Tascam SS-R250N is a two-track solid state recorder with network connectivity built-in and Dante capability as an option. It's a one RU unit that can record and playback up to 96kHz 24 bit audio to HC and XC SD cards, or USB flash drive. It can be used in continuous or back-up mode, with the two cards set to record as main and backup, or extend recording time with a smooth transition.

The SS-R250N's most useful and impressive feature is its FTP integration. Connect it to your network, set-up it up as an FTP client, and all your recordings will automatically upload to the drive of your choice. Using its Event List and time management features, you can set it to record at specific times, download or playback, making it much more than a simple recording device – it can just as easily be
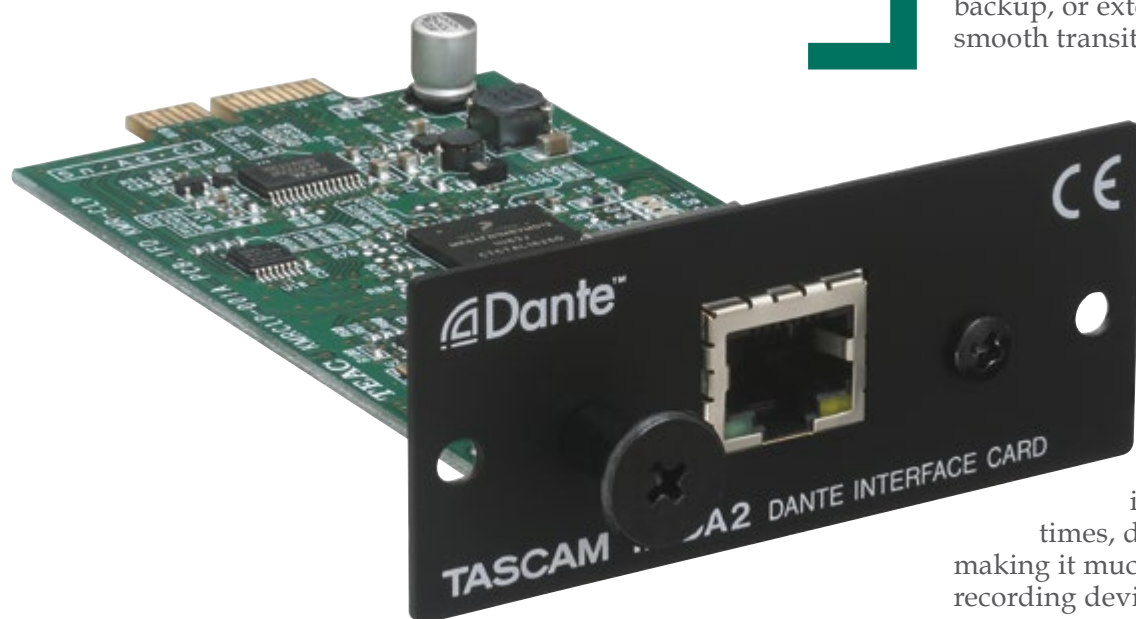
deployed as an automated BGM and announcement system in a shopping centre, for example. Combined with the optional IF-DA2 Dante card, this makes the SS-R250N a powerful networked device.

In addition to the intuitive front panel controls, you can also control settings from iOS and Android devices connected to the same network. For the integrators, there's an RS232 port. The rear panel gives us analogue XLR and RCA ins and outs, AES I/O on XLR and SPDIF on RCAs. There's phantom power and gain settings available through the menu on the XLR ins, so you can connect microphones directly if need be.

Bizarrely, there's a version of the SS-R250N with an optical drive,

the SS-CDR250N, for those who want to record directly to CD. We've also heard there's a cassette version coming, which is even more surprising, but at least makes sense if an institution like a court has an archive of tapes it needs to digitise. Other options include the RC-SS150 remote control, which gives you 12 flash buttons, dedicated transport controls, and an LCD screen. It connects via the RS232 port, and is powered by the SS-R250N.

With the SS-R250N, Tascam continues its market leadership in the hardware recording market, while some other players withdraw. If you're looking for a rock-solid recording and playback system that works on command day-in, day-out, the SS-250N will suit just

aceta
Australian Commercial & Entertainment Technologies Association

The
Ground-breaking
peak
Industry
Event

Helping Prepare You, Your Company and Your Industry for the Future

In the life of ACETA, I can't recall an initiative that has been met with a more positive response, than the announcement of the Inaugural Industry Convention. This ground-breaking gathering will be held in the City of Wangaratta from the 4th through 6th May 2018, and based on feedback to date, the timing and location has been extremely well received. In fact, many planning to attend indicate they will extend the visit to include their own corporate conference and explore the region with partners. Together the timing and region proved to be the most cost-effective and inclusive, with a location and its amenities offering the optimum setting for both business and leisure.

The inaugural convention is the first time in the long history of Australian entertainment technology, that all industry sectors will convene in a non-commercial environment for social interaction, personal, corporate and industry development, to explore the business landscape of the future and be inspired. From the outset, it was clear the most productive program would feature an appropriate balance of work and play and that is exactly what is planned, the optimum networking environment.

Planning is well advanced, the venues have been booked, delegate accommodation rates have been negotiated, and the support of the cities administration is confirmed. With regard to social activities, the Jubilee championship course has been booked for Friday's golf day, planning for the wine tasting hosted by the regions vignerons association is underway, and the gala Saturday evening industry dinner dance arrangements have commenced. Other delegate and partner activities will be announced in due course, that will take advantage of what the region has to offer. The

event infrastructure and social aspects have been dealt with well in advance, so the core focus can be assigned to the all-important convention program ensuring its content deals with the expressed needs of the entertainment technology industry.

Two convention rooms will be used, where ten workshops or forums of fifty minutes duration will be conducted over Saturday and Sunday, a total of 20 presentations. The subject matter will be varied and include business and leadership coaching, an example topic being strategic planning. It may also include workshops led by the ACMA dealing with the Digital Dividend and RCM product compliance. We aim to have representatives from the federal government ministry of trade, industry and small business, and possibly the ATO with regard to R&D tax incentives. In addition, there will be informed presentations on understanding and addressing the challenges presented by e-commerce, workplace OH&S, credit and the credit industry along with insurance and the looming Cyberspace crime issues. The future and how to effectively work with traditional, new and social media will be addressed as will SEOs. An interesting request from several is the possibility of facilitating a forum to deal with corporate amalgamation, acquisition, and resource sharing. Also on the table is the ACETA accreditation / certification initiative covering issues pertaining to compliant and ethical practises and includes venue and product safety.

To realise an inclusive, well-structured and effective program, the convention will address the needs of both the manufacturer and the manufacturer's representative who have common and also unique requirements, as do the suppliers of industry services who constitute ACETA's associate membership. The program will not be

finalised for some time, as we need to continue researching and receiving input from all stakeholders. In the meantime, and subject to change, the convention format looks something like the following:

Friday 4th May 2018

8.00am	Golf day tee off
4.00pm	Welcome, register and plenary session
6.00pm	Reception and wine tasting hosted by the Vignerons Association

Saturday 5th May 2018

9.30am	Workshop 1 and 2
10.20am	Morning tea
10.30am	Workshop 3 and 4
11.20am	Break
11.30am	Workshop 5 and 6
12.20am	Lunch
1.10pm	Workshop 7 and 8
2.00pm	Break
2.10pm	Workshop 9 and 10
3.00pm	Afternoon tea
3.10pm	Workshop 11 and 12
4.00pm	Break
4.10pm	The ACETA Annual General Meeting of Members
5.00pm	Close
7.00pm	Reception and Dinner Dance

Sunday 6th May 2018

8.00am	Sponsored breakfast
9.30am	Workshop 13 and 14
10.20am	Morning tea
10.30am	Workshop 15 and 16
11.20am	Break
11.30am	Workshop 17 and 18
12.20am	Lunch
1.10pm	Workshop 19 and 20
2.00pm	Break
2.10pm	Plenary for review, feedback and farewell
2.30pm	Bon voyage

In summary, this planned convention format allows delegates to participate at a leisurely pace or be fully occupied and we are committed to a program that will inform and inspire. If you have suggestions concerning program content please contact emily@stockdaleacs.com.au.

All the best
Frank Hinton
President ACETA

DUNCAN Fry

Put your back into it
Fry gets a Spinal tap

I've always tried to be careful with my back; always tried to lift things the correct way, always got help if something was too heavy for one person, and so on. Which is the reason I was out of action for the last issue, forcing our Dear Leader to dive into the archives for a story because I couldn't sit up, sit down, get up, get down, or get within arm's length of a QWERTY keyboard. Or anything else involving my spine, for that matter.

It all started so innocently. While tinkering around in the kitchen at Fry's Folly one weekend, I bent down to pick up a screwdriver from the toolbox. Nothing remotely heavy, just a regular Phillips head #2.

"Yeowww" A bolt of intense white hot pain stabbed through the base of my spine like an assassin's stiletto. "Holy shit" I gasped, crumpling to the floor in a foetal position, every muscle in my back instantly locking up solid. Any attempted movement instantly brought the pain back, a not-so-gentle reminder to stay exactly where I was and not be so stupid.

After 15 minutes lying there thinking what the hell I was going to do, I was able to slowly crawl on my side to the couch, drag a few cushions down to my level and roll onto them. The dog came over and helpfully licked my face, then bounced up on the couch to see what the next game was going to be!

Eventually I managed to manoeuvre myself up onto the couch, where I spent the rest of the afternoon and evening wallowing in self pity and free-to-air TV (oh, the horror!). My gf came back from the chemist with some Panadeine and Voltaren, which I alternately swallowed and slopped on my back - hopefully in the right order - before slowly crawling my way into bed and sleeping fitfully until morning.

In the interests of good taste (always your first priority, Dunk. Ed) I'll gloss over the efforts required to strain the potatoes in the dark during the night, or even, as my Nana used to say 'do big jobs!' Those details mercifully have no place in a family magazine like this.

Morning found me with totally seized up back muscles, and brought with it a new set of problems i.e. getting dressed!
Getting un-dressed had consisted of dropping clothes where they lay and quite literally falling into bed. Since sitting up was impossible, getting out of bed required, in high-jump parlance, a Western Roll onto the floor followed by a Fosbury Flop onto my hands and knees, ending up with my head in the laundry basket.

Slipping into some trackies and a t-shirt wasn't too bad, but putting on some runners and lacing them up took about half an hour! Has anyone tried doing up shoes when you can't bend your back? You can stretch your arms out and move your body up to the brink of pain, but tantalisingly your fingers still end up about 100mm away from your feet.

It took 15 minutes to do up one shoe, and then I had to undo it and re-do it as I realised there was a stone in there! I didn't make that mistake twice.

I slowly leveraged myself into the car, hanging onto the steering wheel and the door until I could feel my bum touch the seat. Then, with the car seat nearly horizontal, I carefully chugged off to the factory to unload my pain onto someone else.

Someone else turned out to be Tom, our 'Couriers Please' delivery man. Lucky him!
He patiently listened to my tale of woe, then said, "Hmm - sounds bad. You know what? You should go to the Myotherapy clinic up the road. They are very good with backs."
"How do you know?" I asked.
"It says so on the sign outside!"
Recommendations don't get much better than that!

Tom is Chinese, and talking about medicine with him reminded me of my friend Ben, in Singapore, who is also Chinese. One day we were having dinner and he said to me, "I don't feel so good today; I think I'll go to the doctor on my way home."
"A Chinese doctor for some Chinese medicine?" I asked. Ben looked horrified. "No, no, I'm going to see a Western doctor!" He leaned across the table and whispered conspiratorially "I don't trust the Chinese doctors; you never know what they are putting in the stuff they give you!"

When Tom drove off, I looked up what Myotherapy actually was..."the treatment and management of musculoskeletal pain including trauma or muscle contracture, neuropathic pain (nervous system) and articular pain (joints)".

Well, it didn't sound like it would kill me, but did sound like it was just what I needed, so I thought I'd give it a go. When I had a spare minute I shuffled (carefully) two doors up the road to the clinic.

"Whoa, you look in a bad way," said the therapist, a strapping young girl named Bonnie. "Let's get you up here and see what the problem is." She wrestled me face down onto the table and started prodding my back with her strong fingers.

"How's this?" "Oww" "This?" "Oww" "What about this?" "Oww" "And this one?" "Yeeowww" I nearly launched myself out the window.
"Ah, there it is," she said triumphantly.

"So what is it?" I asked.

"Well, we used to call it a sprain, but really it's not, it's more like a nerve in the back has gone a bit super sensitive and told the muscles to lock up and back off (pun intended). They should eventually start to relax on their own, but we'll see if we can get them to do it a bit faster."
"How are you going to do that?"

"We'll start with some cupping, which softens up and relaxes the outer back muscles, so I can then do some deep tissue massaging of the muscles causing the problem. Then some acupuncture, which works well on this type of injury, followed by 15 minutes on the TENS machine."

I must have looked pretty baffled, so she said "It stands for Transcutaneous Electrical Nerve Stimulation. A mild electric current passes across the skin and muscles with these stick-on electrodes and helps give good pain relief."
"OK then," I said, trying to unsuccessfully shrug my shoulders.

"It'll take about an hour," she said, "so close your eyes, relax, and we'll soon have you on the way to feeling better."

If anyone reading this thinks old Dunk has gone all hippie on us, think again. When everything had finished, she slapped me on the back and said "OK it's all over. Up you get."

I rolled over without thinking about it and sat up.
"Wow - I can sit up. No more Fosbury Flops!" I slid off the table, stood up and walked around the room as I would have normally. The pain was about 90% gone. Unbelievable.

"That's amazing." I said; "Thank you so much."
"Take it easy for a few days," she counselled. "Try not to do any bending, but if you have to, do it very slowly and carefully. Come back for another treatment in three days, then we'll see how you are and if you need any more."

Which I did, and hopped and skipped my way back to the factory, rather like the kid in the toilet paper TV ad who's just beaten constipation.
After one more session I was totally pain free; my back has never felt so good. And not many people in this business can say that.

You only get one back, so look after it!

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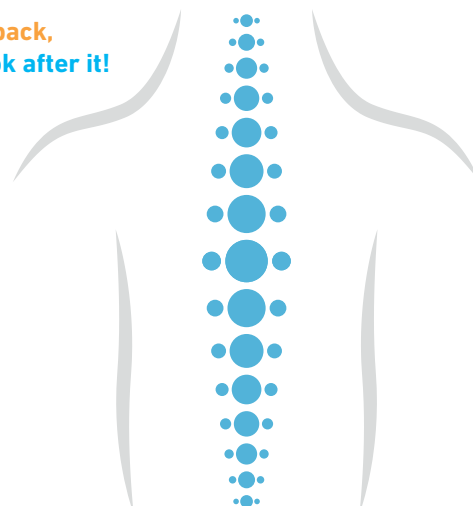
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