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CX133 FEBRUARY 2018
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L-Acoustics L-ISA in Adu Dhabi:
How Spatial Audio changes everything

The Dog in the Night-time:
Modern theatre technology phenomenon

ENTECH goes global

NEWS:

- Brand lotto as climate changes
- ENTECH goes global
- Astro Spatial comes of age
- Spatial Audio: the lineup

ROADSKILLS:

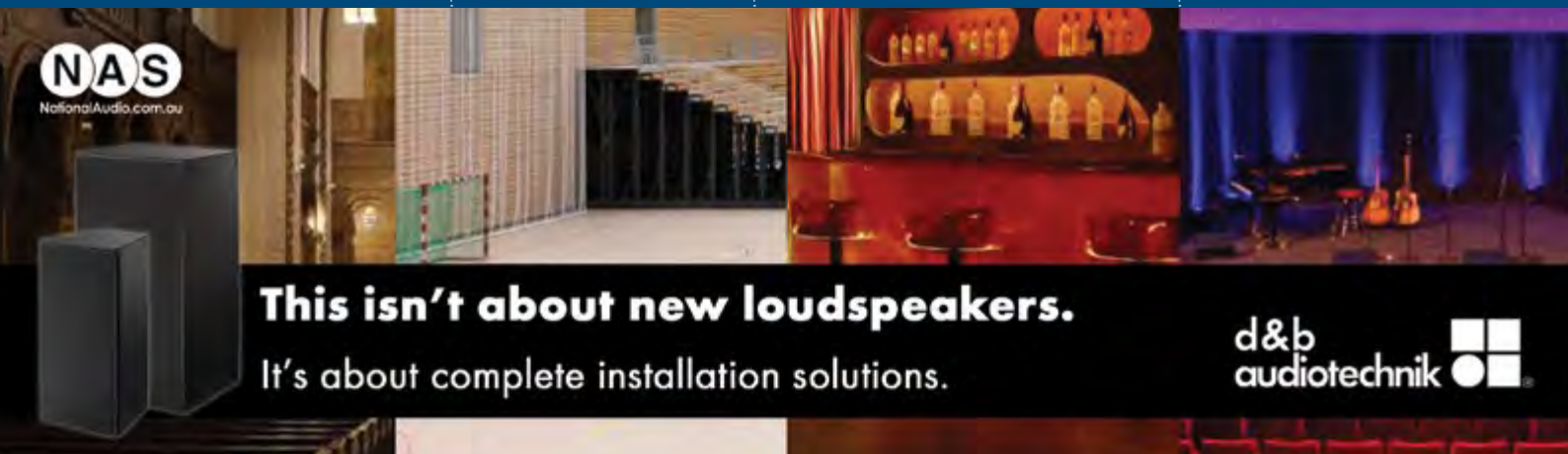
- Tash Sultana
- Alt-J
- Muse
- Cher

REGULARS:

- Listen Here: Back on track
- History: the CX time machine
- Biz Talk: Lawfare, a true story
- Duncan Fry shrinks the PA

GEARBOX:

- dB Technologies ES 1203
- Mackie Thump 12A
- Sysflex Danta Endpoints
- EV ELX 200



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The Robe R&D team worked with Osram to provide a 470W lamp that aligns perfectly with the cutting edge optical system. This design provides a brilliant, crystal clear, razor-edged beam, adjustable from a punchy 1.8 out to a wide 42 degree zoom.

Both static and rotating (glass) gobos produce precision in-air effects or projected images with a sharp, high-contrast, flat field.

The newly designed effects engine can produce 12 varying beam and 'flower' effects. The beam can also be shaped using innovative shutter emulation, further creating a whole new blend of content & creativity.

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Meyer Sound is the latest major manufacturer across the entertainment tech industry to announce changes to its ANZ distribution, with Audio Brands Australia picking up the line. This follows the implosion of Meyer Sound Australia in October last year.

Cuono Biviano, CEO of ULA Group, new SGM distributor

CLIMATE CHANGE
BRANDS MOVE DISTRIBUTION

Just prior, the long anticipated move of L-Acoustics to Jands in both Australia and New Zealand went public, along with the partitioning of the QSC lines, now shared between long time reps TAG and Jands.

After Jands sensationally quit the Harman family, CMI Audio swooped to add classic names like JBL, Soundcraft, dbx, BSS and Crown on to the Harman AKG brand it already hosted.

Mackie and HK Audio are now homeless as CMI resigned those lines to make room for Harman, while retaining Adamson, Axys, XTA, MC2, Tascam and other lines.

Over at Audio Brands Australia, loudspeaker manufacturer FBT makes space for Meyer Sound, joining the rest of the family that includes Earthworks, Rane, Univox, Mipro and Bosch Commercial Audio. While Audio Brands Australia handles Meyer in Australia, its parallel mini-me Marcel Reinen via Pacific Audio Visual Ltd is doing NZ.

Audio Brands Australia has some of the DNA of the now defunct Audio Telex Communications Australia. This powerhouse distribution company was sold to Hills in 2005 and after peaking at $80 million turnover went into decline. Along the way guys like Don McConnell and Marcel Reinen were 'disappeared' by corporate suits who didn't understand the AV business – leading to them setting up their own firms.

If this audio chess game isn't confusing enough, the lighting market is also enjoying the dance of a thousand veils.

While the Robe line is settling into its new home with Jands Australia, Jands are pondering how to style themselves as they also distribute Robe (and L-Acoustics) into NZ. They seek to avoid confusion with Jands NZ, a separate company that continues to represent Harman lines like JBL. Jands NZ also does not handle any lighting brands.

Meanwhile the SGM brand has made a move to ULA Group, significant given SGM's rising market share due to its heavy LED push. The brand has been around a long time, but was overhauled by industry legend Peter Johansen who himself established Martin Lighting last century.

ULA had established the Robe brand in Australia and clocked up continual growth with the line over two decades. The departure of Robe to Jands wasn't expected, and left a large gap in the ULA catalogue that SGM fills nicely. SGM has some outdoor lines, much of their range is IP rated, and everything is LED based. It is made in Aarhus, Denmark.

To make way for Robe, Jands had earlier quit the Vari*Lite agency, which now sits with its parent company Philips Entertainment. They have Strand, Showline and Selecon in the portfolio, and have an Australian and NZ distribution arm.

Finally Now Sound Limited in Auckland has acquired the Williams Sound agency – leaving Hills to handle Williams in Australia.

While all this is tumultuous, we hear there is more in the pipeline, as the distribution climate shifts and brands reorganize into clusters. What the LED is doing for lighting, object based audio will now do for audio as loudspeaker numbers on jobs exponentially increase to service the forthcoming demand for 3D live sound.

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ROYAL INTERNATIONAL CONVENTION CENTRE	NEW VENUE: CROWN CONFERENCE CENTRE	ROYAL RANDWICK GRANDSTAND	ADELAIDE CONVENTION CENTRE	NEW VENUE: PERTH CONVENTION CENTRE

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* CONDITIONS 1. $18,648 prize pool at each city 2. 10 prizes to be won in each city 3. Maximum value prize is $2,750 4. If your name is called during a prize draw you have 90 seconds to claim a prize. 5. You can choose from any prize not yet claimed on the day. 6. You must remove your prize by 6pm on show day or it will be forfeited. 7. There is no cash equivalent. 8. We cannot ship or store prize. 9. If you register before January 31, 2018 your name will be entered twice. 10. If entered twice, you can potentially win twice if name drawn a second time. 011. Prize draw times are: 1.50PM, 2.50PM, 3.50PM, 4.50PM, 5.50PM.

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AUDIO BRANDS AUSTRALIA

The Earthworks M30 is a precision engineered 30kHz omnidirectional measurement microphone ideally suited for acoustical measurements including sound system setup and analysis. The M30's audio performance is unparalleled. It has a flat frequency response that extends from 5Hz to 30kHz, an exceptionally consistent omnidirectional polar response, 138dB SPL rating without distortion and no handling noise. With temperature compensated electronics, the M30 was built to deliver repeatable results no matter what the environment. 15 year warranty.

RRP: $1149.00 inc GST

AUDIO LOGISTICS

Audio Logistics has put together the ultimate cable pack for audio engineers. The pack has been put together with the most popular products from the PROCAB Prime Series which have been specifically designed to withstand the harshest use and abuse that any rental or road application can throw at them.
All cables are constructed from PROCAB's premium Ultraflex™ and Duraflex™ cable and are fitted with Neutrik connectors and factory-installed shrink sleeves.

RRP: $1720

LSC

The Mantra is simple – making control of dimmers, LEDs and moving lights quick and intuitive. Designed and manufactured in Melbourne Australia, the Mantra Lite has become the fastest selling console in LSC's history. The latest software update adds great new features including IPCB filtering, Move In Black and a new expanded fixture library. Perfect for schools, churches, town halls and rental departments.
LSC: Australian Innovation | Global Audience

RRP: $2,750.00 ex GST

NAS

12-Input Digital Mixer for iPad/Android Tablets with 4 MIDAS PRO Preamps, 8 Line Inputs, Integrated Wifi Module and USB Stereo Recorder.
The Midas M32 completely redefined what is possible from a digital mixer – and thousands of users are enjoying the results. Now that technology has been incorporated into the small but powerful MR12 rack-mountable mixer, which will forever change the way you record and the way you play live music.

RRP: $749.00

EPSON

Epson's powerful new EB-990U projector offers high quality images with a low cost of ownership.
Enjoy clear and sharp image quality of full high definition contents without any distortion with WUXGA (1920 x 1200) resolution, which is suitable for presentations, videos and more. With a high brightness of 3,800 lumens and superior 15,000:1 contrast ratio, the EB-990U is the ideal choice for use in a wide variety of Corporate and Education environments.

RRP: $1,299

LEXAIR

1) The High End Systems USB DMX Widget provides a single universe of DMX-512 output from any Hog 4 console or Hog 4 PC. Up to eight USB DMX Widgets may be connected at once to provide eight full universes of DMX-512 to the Hog 4, Full Boar 4 and Hog 4 PC. Up to four DMX Widgets can be connected to the Road Hog 4 or Hedgehog4.
2)The world's first video converters truly designed for the road. They are often the weakest link in the signal chain. Theatrixx wanted to change that, so they designed the xVision Video Converters with Integrated power supply with locking PowerCON True 1, plug-n-play operation, locking HDMI port and reclocked and amplified SDI loop thru.

RRP: $2625 inc GST

BOSCH

EVOLVE 50 delivers an uncompromising combination of light weight, low-profile looks, and superior Electro-Voice audio quality, setting a new performance standard for powered column systems. The perfect choice for DJs, mobile entertainers, bands, singer/songwriters, corporate functions and any venue where high-output portable sound is needed, EVOLVE 50 features:

- Lightweight column speaker array with 2-click cable-free connection between sub and column
- Real PA performance via eight 3.5-inch full-range drivers, a 12-inch wood subwoofer and 1000 W Amplifier delivering 127 dB peak SPL
- Custom waveguides for ultra-wide 120° horizontal coverage and array-formed 40° asymmetrical vertical pattern control
- High-quality Bluetooth audio streaming.
- Wireless control and monitoring via QuickSmartMobile app to configure and monitor up to six EVOLVE 50 systems simultaneously QuickSmartDSP provides best-in-class processing via EV's signature single-knob user interface with LCD.

RRP: $2499 inc GST

EVENTEC

The Eventec Lighting Package contains 2 x LM60S, 2 x LM7x12W, and 1 x Kontrol 192. Offering 1 DMX controller, 2 LM60S moving light spots, and 2 LM7x12W moving wash lights, these beauties are not only bright, but they are fast and quiet. The spot has a 60W white LED with a the choice of 5 or 15 DMX control Channels. It has a 10 degree beam angle, 5 rotating gobos that are interchangeable, a 3 facet prism and 7 colours to choose from. The wash consists of 7, 12W RGBW LED's, uses 16 DMX Channels and has a zoom of 6 to 40 degrees. Each unit weights only 4kg, has a 20,000 hour LED lifespan and have DMX mode, Auto Program, Sound activation, and master/slave modes. The wash and spot consume less than 1Kw of power, come with a 1 inch OLED Control Panel, and have a 1-20Hz Strobe. The Kontrol 192 has the ability to control 192 DMX channels and store 240 scenes. It has dedicated faders for fade time and speed and separate fog and strobe control. It also has 6 built in chase programs which can be programmed to step though scenes or operate via sound activation with its inbuilt microphone. This is a wonderfully compact controller.

RRP: $2,559

TLC GLOBAL

Lite Focus 8 Way DMX Splitter - a 1U 19 Inch Optically Isolated DMX Splitter equipped with 2 x DMX Inputs and 8 x independently configured outputs. The latest splitter features a graphical overview of channel values and refresh rates and can be used as a DMX decelerator, Regenerate/Clean DMX Signals and used to prevent reflection issues also.
Lite Focus single compact universe DMX recorder supporting DMX-512 Protocol in a slim ergonomic design. The LITE FOCUS DMX Recorder allows multiple sequences and scheduling that can be stored and transferred via a SD Card.

RRP: $1,160 inc GST

ULA

The Chamsys MagicQ Mini Wing is an extremely powerful USB control wing for connecting to your PC or Mac to control lighting, video and LED with the MagicQ PC software. The Mini Wing is physically very small and light, making it a very attractive solution for Lighting Designers to take with them when they travel. There is no other product available that gives the power of the MagicQ software combined with real faders and buttons, and a DMX output. MagicQ software runs under Windows, OSX or Linux. MagicQ software is free and uniquely the outputs are fully enabled, allowing you to run shows of up to 64 Universes. The MagicQ Mini Wing is targeted at installations, which are generally programmed only once and changed infrequently. It also provides a cost-effective solution for individuals with small budgets, and as a useful back-up for MagicQ consoles.

RRP: $1,160 inc GST

USA ROADSHOW IN SEPTEMBER

Back in 1994 the first ENTECH tradeshow was ambitious and broke new ground, bringing a PLASA styled event to Australia. It took off and a decade later was sold to a large tradeshow organizer. Three years ago it came home when Juliusmedia bought the rights back, cancelled the large format event and rebranded the CX Summer Roadshow as ENTECH Roadshow.

Now the roadshow has reached the USA with a partnership between Production Media Inc, a popular entertainment media company and Juliusmedia leading to the first ENTECH Roadshow USA – a four city tour in September covering strong markets in the mid-south.

With the Australian roadshow a fixture on the calendar each summer, and the NZ version run each second winter, the USA promises dramatic scale. With sales now open, US exhibitors are buying in because they are weary of large format tradeshows with miles of aisles and favor a small, nimble format with plenty of face-time with time-poor local clients in each city.

Large tradeshows are a charge fest against exhibitors who complain about being charged $30 for a cardboard trash can and $9 for water. But the drayage, rigging, power, forking, porterage, freight, parking and marketing surcharges all add up.

Worse still are the costs of inefficiency when services like power don't arrive at the scheduled time leaving staff, loaders and riggers standing waiting. Or at the end when empty cases and boxes don't reappear until much later into the night.

ENTECH Roadshow founder Julius Grafton knows all about this, having originally run large format multi-day tradeshows. "We sweated the details on site the whole time", he says. "Often the delays can be managed, but only if the organizer cares. Too many organisers disappear at show close, leaving chaos in their wake. They've cashed the cheques".

"I hated it. I didn't take kickbacks, but exhibitors thought I did and blamed me for absolutely everything. Standing in line to pay for parking the guy in front would explode when the machine charged him $30 for a day. I heard them use my name in vain, and I had no control over parking!"

Worse still the organisers and the venues sometimes work against each other. "It comes down to planning", Grafton continues. "Too many times we hear about exhibits where the venue comes along at the last minute and demands changes – things a good organizer would have seen and rectified a lot earlier. There is no, or low, duty of care from large scale organisers".

Further afield there is a lot of interest in ENTECH, provided it sticks to the 'small is better' same-day format. Dates for ENTECH Australia in 2019 move out of February, with the tour starting on March 5th.

The focus is then on the USA where there are many more cities that will see an ENTECH Roadshow in 2019 – followed by South America (with the existing partnership) and Europe, once the right European partnership is established.

Spatial Audio

Astro Spatial comes of age

2018 will be notable for the rollout of 3D Spatial Audio systems across installations, theatre and live concerts with L-Acoustics and d&b audiotechnik set to do battle at close quarters.

While the big Europeans have integrated SA systems entering the market now, Barco's Isono and Dutch brand Astro Spatial Audio offer stand alone processors that are loudspeaker agnostic.

Astro Spatial have been on the market quite a while, says director Bjorn Van Munster. He has

struggled to win large sales due to misunderstandings about object based audio. But the big Europeans are lifting the profile of 3D live sound, and he can see considerably more interest in Astro.

"My demo at exhibitions is pretty similar to d&b" he told CX.

"There are challenges, especially short latency. My system is 5 milliseconds or lower. The maximum system allowable is 10ms – and that is microphone to speaker. Every device in the chain adds time, including the wireless microphones".

But this does not seem to be worrying anyone now.

Bjorn says the room enhancement systems like Lara and Meyer's

>>>

Constellation can confuse the market – the RE system does a completely different job to the SA system.

"Picture yourself at front of house during a live performance, mixing audio not by pushing the faders of a console, but by simply moving your fingertips in space. Each reproduced sound, no longer trapped in a rigid signal path from desk to loudspeaker, now moves seamlessly through all three dimensions. It is as if the venue is filled with bubbles, each containing a strand of your mix, and as your fingers move across a touchscreen, so the bubbles move through the venue". Bjorn waxes lyrically.

"With my system we guarantee 5ms latency, and that includes the DSP processing. We have 5ms if you use my EQ. All the objects are rendered and recalculated 40 times a second."

Astro have just released Stagetracker 2, a 3D tracker for performers that integrates with their processor to send the sound where the person is.

STARTING LINE-UP FOR 3D LIVE SOUND

A summary of the systems available now

Our coverage of Spatial Audio in December was well read, and this issue we report one of the initial deployments of the L-Acoustics L-ISA system by Australian firm, Auditoria. (See page 18)

At ENTECH later in February Spatial Audio (we call it The Live Audio Revolution) will be a hot topic, and the two big European manufacturers L-Acoustics and d&b audiotechnik will face off via their distributors, albeit without a demo due to timing issues.

There are four systems on the market, two which are loudspeaker agnostic. Both of these are set to benefit from the marketing noise (no pun) that will increase over the next while from the big two.

Note that Spatial Audio is different to Acoustic Enhancement – which is typical of the Meyer Constellation. These systems transform flat venue acoustics into reverberant recital halls using many small speakers throughout the space. The AE system isn't a primary audio system, it is secondary. SA is a new way to mix – and for an audience to enjoy - live shows.

SA gives theatre audio designers the opportunity to follow a singer or actor across a stage, and vertically, sending the sound from the apparent position of the performer. It allows a band to be 'positioned', adding depth, reducing overall gain, and simply transforming traditional mono or stereo mixes.

L-Acoustics L-ISA is sold with L-Acoustics speakers, while the d&b Soundscape is intended for d&b audiotechnik speakers.

The two systems that are sold without speakers are the Barco IOSONO Core Processor, and the Astro Spatial Audio SARA engine.

Iosono has been in market and used globally since 2010 – it doesn't rely on predetermined speaker positions which gives it ultimate flexibility. The IOSONO Core provides real time rendering of live input sources to the attached speaker system.

The IOSONO system has up to 128 input and output channels.

Astro Spatial Audio has also been around for a while, and also offers upto 128 in/outs per engine, with higher channel counts possible by cascading.

All the systems promise no phasing issues due to high end processing.

Based on demonstrations and discussions with the four manufacturers, there is a degree of acoustic enhancement available for all four. All the demonstrations feature a stage system of five or more (more are better) speakers along the top of the stage, and then a ring of speakers around the sides.

The Auditoria deployment in Abu Dhabi (page 18) has speakers overhead as well.

It seems to us that the distinctions between SA and AE will be blurred fairly quickly. It's also instructive to see Barco and Astro involved in various projects with various loudspeaker brands around the world.

All proponents of SA agree on one thing. Until you demo the system, people are confused by the perceptions – is it an effect? Is it like Dolby in a cinema? Is it AE? Is it just for atmospheric sound design? Does it have too much latency? How do I mix with it? What does the mixing surface of the future look like?

Once you hear a demo, you are a convert and you start to imagine how you would use this. And who you would sell it to.

APART AUDIO REVAMP8250 01

The REVAMP8250 is an 8-channel bridgeable power amplifier. Combined with a pre-amplifier or matrix the REVAMP8250 can be used to create 8 zones in mono, 4 zones in stereo, 4 bridged mono or 2 bridged stereo. The amplifier has an intelligent variable speed cooling fan built-in to keep the unit cool, an input overload LED indicator on the rear and amplifier clip indicator on the front. It outputs 8 x 175 watts @ 8 ohms and is fitted with 8 unbalanced inputs on RCA with pass through and 8 balanced inputs on euroblock.

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

AUDAC NOBA8A 02

The AUDAC NOBA8A is a compact 8" active bass cabinet made of 4 mm thick aircraft-grade aluminium. Its design allows it to be placed against a wall, on the ceiling, or even underneath furniture. The integrated 3-channel class-D amplifier provides power for the bass driver along with stereo speaker outputs, allowing connection of up to eight satellite speakers. It uses AUDAC's WaveDynamics technology, which allows the user to easily set up the optimal acoustic configuration via the integrated USB input. An optional 2.4 GHz RF remote allows handheld control of NOBA's basic functions.

Australian Distributor:
Audio Logistics
www.audiologistics.com.au or 1300 859 341

CLAYPAKY AXCOR BEAM 300 03

The Axcor Beam 300 has a compact body - less than 500mm - and is able to emit a super-concentrated solid beam with a 2°angle. It runs a 110W White LED engine with a colour temperature of 7600 K, has a motorised focus lens, colour wheel, gobo wheel, and an 8-facet prism. Its 16-bit electronic dimmer has 4 curves, and it can run in two DMX control modes - 14 channel or 16 channel (Sharpy mode). Its electronic focus and its 140 mm diameter front lens make the Axcor Beam 300 the perfect replacement for a Claypaky Sharpy.

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

ELATION PROFESSIONAL DARTZ 360 04

The new Elation Professional Dartz 360™ is a narrow-beam LED beam/spot fixture with gobos, effects and full colour mixing. A specially combined 50W RGB single source LED engine and optical package produces a powerful and tight 3-degree beam with a smooth field for clean gobo projections and effects previously only possible with a discharge lamp. The Dartz 360 is compact with continuous 360° pan and tilt movement.

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

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05 RØDE AI-1

The Rode AI-1 USB Audio Interface allows zero-latency playback by enabling direct monitoring and playback via both the headphones and speakers. To ensure the AI-1 is truly versatile it features 48V Phantom Power and is class compliant – so there is no need to install any drivers. Fitted with a Neutrik combo jack input and discrete Class-A preamp, it's available as part of The Complete Studio Kit, which includes RØDE's NT1 large diaphragm condenser microphone, SMR shock mount with popshield, 6 metre XLR cable, and USB C/A cables.

Australian Distributor: RØDE Microphones
www.rodemic.com or (02) 9648 5855

EVENTEC F2X48

The F2x48 is a compact, fanless diecast aluminium, zoomable, cold and warm white Fresnel. It has a beam angle of 20-50 degrees with manual zoom. One 48W cool white 5700K COB LED and one 48w warm white 2700K COB LED produce a CRI of 95. The unit is fitted with powerCON and 3-pin DMX with 5-pin DMX optional. Rotatable barndoors and gel clips are included. Its RRP is $569.00 inc. GST,

EVENTEC M1H420W 06

The M1H420W is a CMY moving head fixture. With a colour temperature of 6,500K, the 420W white LED mover has an output of 20,050 lumens and produces 110,000 lux @2.5m at 5 degrees. Zoom ranges from to 50 degrees, there are fixed and rotatable gobos, iris, 8 colour wheel, and 3 facet prism with frost. Control can be via DMX, auto program, sound activation and master/slave modes, the unit comes with RDM, ArtNet interface and a 2.4" colour LCD control panel. RRP is : $6,390.00 inc GST.

EVENTEC M1B50RGB

The M1B50RGB is a 50W RGB moving head beam outputting 161,000 lux @3M, or 1,335 lumens at a 2 degree beam angle. It has an 8 facet prism, frost, and fixed gobo wheel. It retails for $2,790.00 inc GST.

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

EPSON EB-L1755UNL 07

The Epson EB-L1755UNL is a solid-state laser light source projector producing 15,000 lumens for up to 20,000 hours of almost maintenance free operation. It runs native WUXGA (1920 x 1200) resolution with 4K enhancement and includes advanced built-in edge blending, image warping and curved-surface correction technologies for a variety of applications.

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

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12

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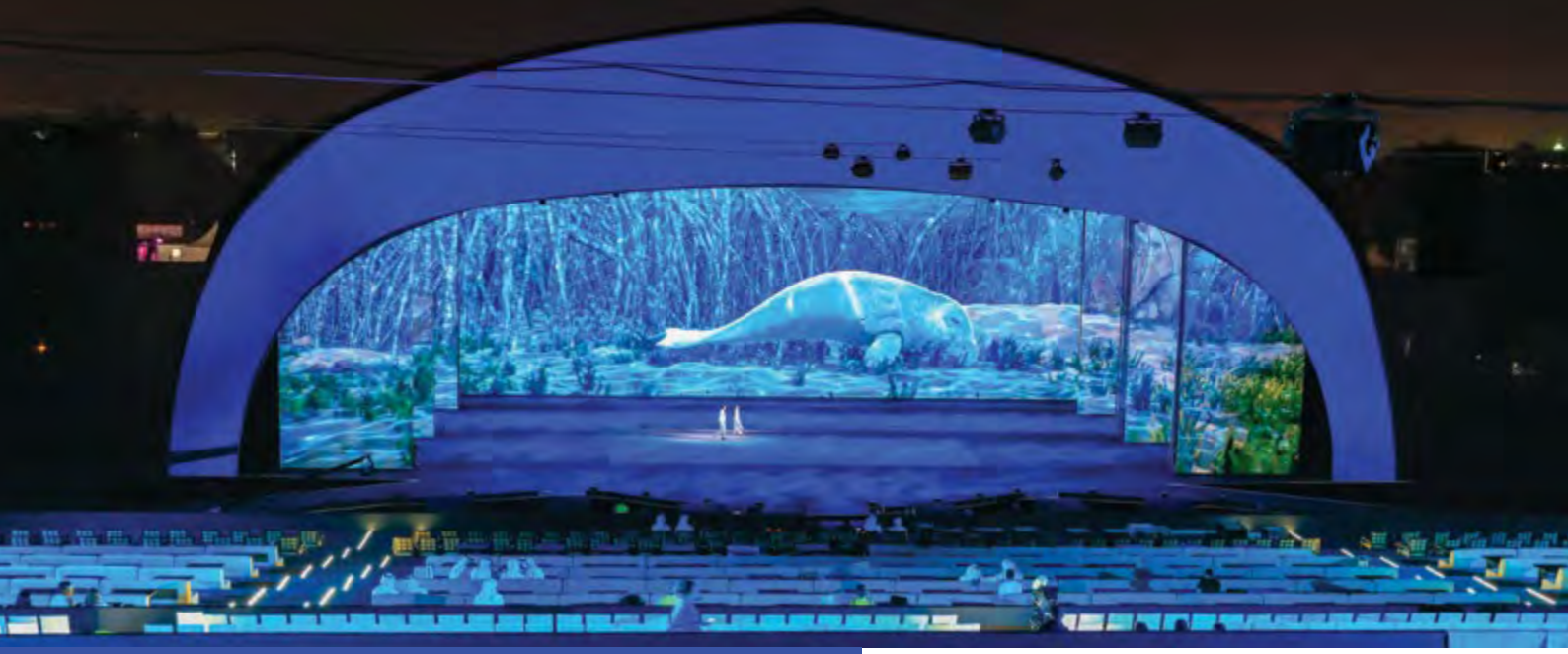
L-Acoustics L-ISA in Abu Dhabi

Auditoria's Scott Willsallen goes Spatial



The UAE's 46th National Day was celebrated in Abu Dhabi on December 2 with a host of special events, including a ceremony held for 1800 in a temporary outdoor venue. Auditoria's **Scott Willsallen** was Audio Director and Sound Designer for the event, and used L-Acoustics' L-ISA spatial audio system to totally immerse the audience in sound. Jason Allen spoke with Scott about 3D mixing, system design for spatial, and the future of live sound...

>> Ready for National Day

Celebrating the unification of the emirates into one state in 1972, National Day is a major public holiday and cause for wild celebration in the UAE. With UK/LA based TV production and staging company Done+Dusted the winning bidder to produce a spectacular ceremony to mark the occasion, Australia's Auditoria were brought on via technical producer Nick Levitt to design and deliver a major spatial audio component for the show.

"We'd learnt about the current offerings in spatial audio for a previous project," said Scott Willsallen. "We developed and conducted evaluations of those products, but L-Acoustics L-ISA wasn't involved, so I spent a month with L-Acoustics in mid-2017 working with them to understand the product. It's obvious spatial audio is the next big thing and I wanted to be very well educated about the different products and their capabilities."

A Sense of Space

>> The auditorium in progress

A temporary outdoor auditorium measuring 60 metres wide by 50 metres deep, seating 1800, was purpose built for the show, which featured live performers interacting with recorded music and sound design. "The sound design goal was to deliver not just horizontal surround, but to add an element of height as well," Scott explained. "We wanted to move sounds around in a believable fashion, which can be easy if the audience area is small, but ours was quite large. All of our inputs were pre-recorded, which was advantageous, and we were involved with the music team in the production of the music as well."

"All of the mic techniques used to capture the orchestra and traditional instruments were to suit the delivery system. The orchestra was recorded in large rooms, with seven mics across the front a few metres off the ground. That gave us our seven main outputs. It took a lot of time to place the mics, listen, and then adjust, to capture, good, wide, and full reproduction. Taking the time to do this meant that the orchestra went from potentially 40 stems to seven.

We used seven cardioid mics, added a few room mics for a reverberant input, and used some 7.1 reverbs for their seven outputs. We ended up with seven orchestra mic tracks, seven orchestra close mic tracks, and seven channels of reverberation, all artfully mixed at Air Studios in London by Adam Miller."

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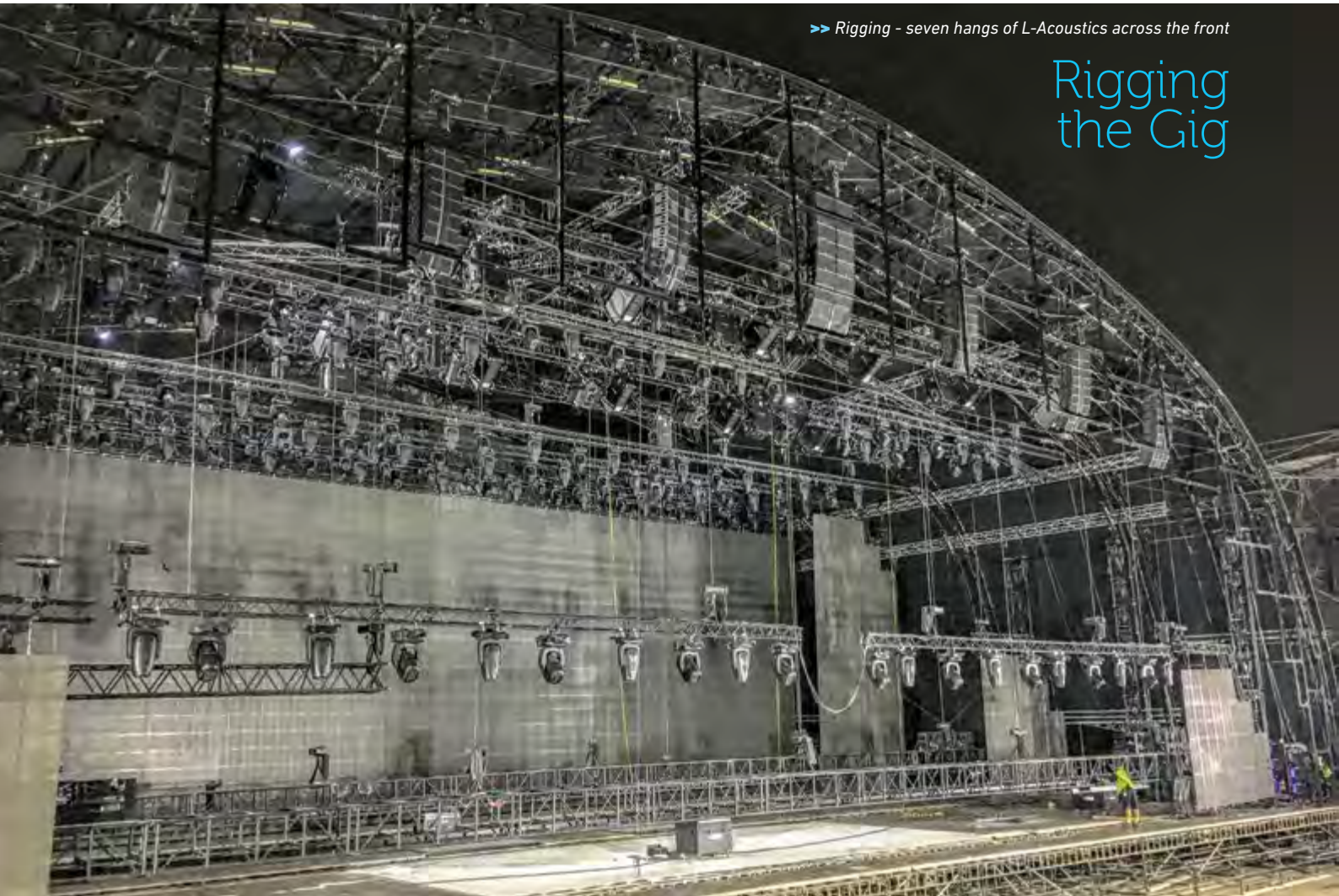
>> The acoustic ceiling

>> L-Acoustics X8s as an acoustic ceiling

Making the Room

Without a ceiling or indeed much in the way of walls to create an actual acoustic, Scott and the team ran 33 L-Acoustics X8 speakers in a grid over the audience, giving them the ability to create an ambience. "We put delays on the reverberation channels and sent that to the overhead speakers to provide an acoustic ceiling," elaborated Scott. "We had no reverberant energy at all, as we were outside. Overhead speakers are a powerful tool, as the speakers are all the same distance from the listeners, making it possible to create an accurate illusion of a space."

At the FOH ops position, 280 inputs came in to two DiGiCo SD-5 mixers. "Every spoken or sung voice, every traditional instrument, every reverb, was a separate track," Scott continued. "There were 100 channels of sound design and 21 channels of orchestra. We had around 200 active channels per music cue, which meant that cross- fades between cues were about 400 channels. We translated this to 90 inputs to the L-ISA processor, some bussed down from replay, others not. The music went straight in, but we used Pryramix to pan the sound design and bounce it down to 36 SFX channels. We took 36 outputs from L-ISA to the PA. The typical L-ISA configuration runs at 96kHz, which gives you 64 in and 32 out, but we ran in alternate configuration at 48kHz, allowing us 96 in and 64 out, of which used 40 outs, one per the 36 arrays plus four for auto-mixdown."



>> Rigging - seven hangs of L-Acoustics across the front

Rigging the Gig

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Rigging the Gig

Six arrays of nine elements of L-Acoustics Kara and one array of nine elements of L-Acoustics K2 ran as the main FOH PA, augmented by 18 L-Acoustics SB28 subwoofers. Four arrays of eight elements of Kara were used as extensions to the main stage system to add width and panorama to the orchestra and choir, while the surround system used 10 arrays of six elements of Kara as sides and rear, with an additional seven X8. In addition to the 33 X8s as the 'acoustic ceiling', L-Acoustics ARCS IIs and X8s were used for front-fills, bringing the total of L-Acoustics boxes on the gig to 228. Local production house Delta Dubai supplied the rig, and L-Acoustics supplied the L-ISA processors. Steve Logan was the replay operator, Justin Arthur the mix engineer, Scott handled the L-ISA interface, and local crew were supplied by Delta, managed by their project manager Craig Harvey.

With all those boxes in the air and processing on the ground, what is the artistic benefit of spatial audio? "The whole point of spatial mixing is that rather than panning using amplitude to determine where something sits between left and right, you place it within the loudspeaker array that puts it between the far left and far right, and no matter where you are in the horizontal plane, that position will hold true." Scott illustrated. "It's no longer about amplitude difference. If you want to take a five- piece band and make that stereo mix applicable to every seat in the house, then that's where a 3D mixing system, suitably designed, will change your world. The difference is beyond words."

>> *L-Acoustics Kara on the sides*

>> *Mix engineer Justin Arthur*

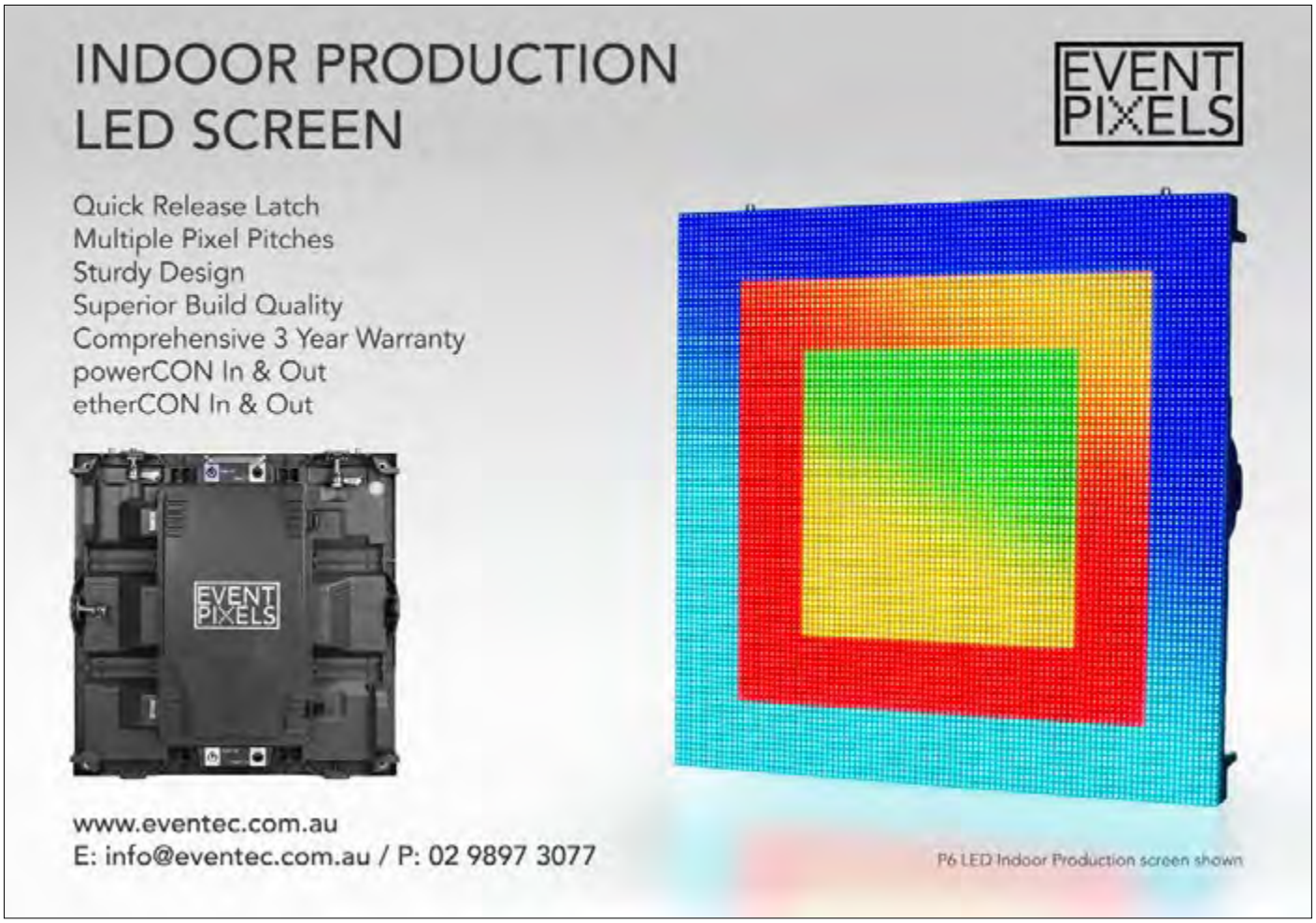
>> *Open air*

The Future of Spatial Audio

Arguably the biggest change in live sound reinforcement since L-Acoustic's introduction of the modern line array in the 90s, spatial audio is set to change PA design across the spectrum of events. Where does Scott Willsallen see the new systems being deployed? "Well, if I'm doing a stadium, in-the- round ceremony style gig, it has little benefit," he observed, "but anything from an arena down, depending on content, there's an argument for it. It's going to come down to sound design versus set design. In theatre, a proscenium arch is a valuable piece of real estate. The audience in a theatre is close enough to feel the difference and get huge benefits, but it'll come down to priorities."

And in the touring market? "Many stage designs for touring rock consists of loads of LED on the back wall, and the designers have accepted a big long black or brown line of PA either side of stage," added Scott. "It's going to take time for that paradigm to change to a band across the top, four metres(ish) tall, every five metres. There's also the problem of the front few rows; that's the hardest part of these systems. How do you deliver spatial representation without damaging intelligibility? The most simplistic answer at the moment is to make the front fill mono, which is a good way out because it conveys the information, but over the next few years designers will preference as to whether it's a combination of both mono front fill and spatial, or not. It's going to be content and geometry specific."

TOURING: "It's going to change to a band (of speakers) across the top, every 5 metres"



Sydney Theatre Company's *Muriel's Wedding the Musical*

By Cat Strom

Sydney Theatre Company's Muriel's Wedding the Musical has just wrapped up at Sydney's Roslyn Packer Theatre after a highly successful run of sold-out shows.

The production, a theatrical version of PJ Hogan's iconic hit film, was updated to today by the writer himself, and featured original music by Kate Miller-Heidke and Keir Nuttall alongside those beloved ABBA numbers.

The dream theatre director/designer team of Simon Phillips and Gabriela Tylesova lead a stellar creative team which also included choreographer Andrew Hallsworth, lighting designer Trent Suidgeest, sound designer Michael Waters, musical supervisor Guy Simpson and musical director Isaac Hayward.

Lighting designer Trent Suidgeest had worked with both Simon and Gabriela in the past, his main tasks were to contribute to the playful spirit of the musical, tracking Muriel's emotional journey and supporting Gabriela's boldly minimal set of brightly coloured panels.

"The set design incorporates lots of block colour which needed to be lit quite flatly and subtly in terms of colour," commented Trent. "I've always been confident with colour choices and combinations, and it was exciting for me to play with the colour stories in this show; bright and fresh for Porpoise Spit and grungy and rusty for Sydney, amongst others.

"My colour decisions required readjustment during plotting and teching with consideration of the bright green floor. It doesn't take many colours particularly well, and very quickly goes Olive or Brown, so I was often figuring out how to light the floor first, then find the actors and other scenery as specifically as possible. Traditionally you may get away with some scenery ending up lit by the bounce off the floor, but in our case everything needs considered and particular direct light."

One of the challenges for Trent was that the set moved so much; sliding walls and smothers that close down to various apertures meant that every position had to work very hard.

"There are a number of small domestic scenes and quick transitions that take place downstage in order for a big scenery change upstage, so the rig above and around the downstage needed to work quite hard," added Trent. "My rig needed to be designed with plenty of flexibility. I aimed for as many different colour temperatures from as many different places as I could. I have been asked why I had so many varying fixture types on LX1 and it's purely because I needed the ability to have a Tungsten wash together with an arc shutter together with some LED."

Consequently LX1 held Martin MAC Auras XBs, Claypaky Scenius, Coloram scrollers, MAC TW1 Narrows, Vari-lite VLX Wash, and VL110 arcs. Trent says that the MAC TW1's delivered nice tungsten pools, the MAC Auras blasted colour and the Claypaky Scenius provided shuttering and gobos.

"It's a very transitional show, we're never in one place for very long," explained Trent. "The design needed to keep evolving and support each of the scenes. I designed a nifty trick of a run of GLP X4 20 Bars just upstage of the most used smother, and they basically travelled with that smother throughout the show so I had a very direct

Photos: Lisa Tomasetti

backlight coming in through the apertures. That way I could get the light curtains as well as a nice controllable back light. The GLP X4 Bars were really the hit of the design for me, it's the first time that I'd used them and I loved them. Some GLP X4 10 bars were situated down the side of the proscenium to achieve pickups of side light as well."

As the show required many specific shutter cuts and crisp, custom gobos, Trent chose Claypaky Scenius fixtures as the workhorse of the show and they soon became the backbone of the rig.

The time of year, the busy Christmas and New Year period, plus the length of season was a challenge as it meant gear was in short supply. Trent decided that he required fixture numbers as opposed to the latest and greatest gear, hence fixtures such as the twenty-four Vari-lite VLX Wash and twelve VL1100s in the rig.

"The fixture list was created in order to get it across the line, to give me as many controllable options as possible," he said. "We could have had all spangly new fixtures however probably only half as many, but a huge thank you to Tony Davies and Chris Harrison at Chameleon Touring Systems for finding a balance with us."

The twelve Vari-lite VL1100 AS were three each side on ladders plus four floating on deck on a roving boom. A couple overhead did a few special pickups required to fill gaps. VL3000's provided a ¾ high side backlight plus tight pull picks ups and

big highlights for entrances, midstage and upstage.

Trent commented that the MAC Aura XB's did a lovely job as a really strong colour option and also as they zoom much tighter than the VLX, they were used to highlight people and scenery.

Sixteen ShowPro HEX 16 were used for footlights, with Trent remarking that he chose an LED option as he wanted pixilation and their colour ability.

"They did lots of colour waves and effects plus little sectional highlights throughout the show," he added. "There was also a run of LED RGB tape down in the footlight trough just to give the blue borders a little bit of light without overpowering the actors too much. The two products worked in tandem but should the show have another life, then maybe we'll switch to something that is moveable and zoomable so I can chase the actors around or flood them out of the scenery wash."

Atmosphere included one LSG low fog for the fantasy sequence, an MDG Atmosphere for general haze, and a JEM Magnum 1800 each side that got moved around a bit by the floor electricians to do nightclub effects and add a little extra smoke in the air when the atmosphere needs to be thickened. There were also lots of little cues for the Power Tiny that travels back and forth.

Analogue fixtures were a fairly standard rig of ETC Source Fours all lenses, Selecon Pacifics 12/28 + 23/50, HP Fresnels 1.2k / 2k, Source Four pars and CODAs.

A couple of Robert Juliat Cyrano followspots worked hard but are kept subtle in the drama, coming to life in the song numbers.

Trent credits production electrician Pádraig Ó Súilleabháin, Head of Lighting at Sydney Theatre Company, with pulling the rig together and coordinating the set electrics under tremendous time constraints. "I was always pushing Paddy with my timelines, deciding exact set electrics and equipment lists, but he was perfectly at ease and pulled the whole design together remarkably calmly."

Pádraig worked with Roslyn Packer Theatre Head Electrician Andrew Tompkins to realise the large design in the venue which required some extra planning around Networking and Power distribution as it is the largest automated lighting rig to fill the RPT. Trent commented "Tommo and the Ros Packer gang were always in terrific spirits, we had a lovely time during the five weeks of Bump In, and they are continuing to look after the show with great care."

The show also has lots of variety in the set electrics; single scenery elements, tracked and flown, together with a custom fibre optic Star Cloth.

"We found a few great things on Alibaba, my favourites are some RGB pixel festoons that go underneath the Cruise Ship umbrellas, they are fun and kind of tacky" commented Trent. "I also had a great time with the pixel tape in the Sydney Harbour Bridge which had eleven universes going to it at the last count with all of the LED pixels, a run of Ergheiz Fusion Bars upstage and a few other set electrics that pick up faces here and there.

"The LED stools for Breaker's Nightclub were great too. We wanted them to be controllable, so they were a bought plastic stool, retrofitted with brighter LED tape, a SHoW DMX SHoW Baby receiver and LED encoder plus battery fitted; we had a cute little station set up for the charging of them that looked like a crazy experiment!"

The overhead rig was packed with scenery flying and tracking in, curtains and cloths, Trent needed to be very discreet with the amount of space he took up with his lighting. Far upstage was particularly crammed with skylines, back blue smother, white curtain; and they all needed a fair bit of lighting love.

"So on one line I had thirty-three Source Four's lighting palm leaves and trunks, Sydney skyline and others, then immediately downstage of that was a bar that has GLP's underslung below a run of CODAs to light the smother. So there was a serious amount of fixtures hung in a triple configuration. That's another reason I chose the GLP's – they're so versatile in a small hanging space."

The lighting was programmed on the in-house ETC EOS Ti by Robert Cuddon with Charlie Hall taking over at the previews. The show consists of approximately 500 called cues, with 844 part cues and 577 moving light presets.

"As the set was in constant motion, it took a lot of time to get the automation programmed to run safely and smoothly, which meant dedicated lighting time was at a bit of a premium," Trent said. "I am totally thrilled with the

outcome we achieved. As with all remounts, I am looking forward to building the next layer of detail into the design, ahead of whatever its future life might be."

Sound designer Michael Waters' biggest challenge was navigating the script and coping with the multitude of changes that were thrown at him every day! The script was written in a filmic style with lots of characters, chopping and changing of scenes and also locations changing at a drop of a hat.

"It's an extremely wordy, busy script and the result is a very busy mix," he said. "As is typical with a brand new show, the rehearsal period is never finished. Even up until doors on opening night we were reprogramming the show as we were constantly getting updated revisions of the script; scenes being dropped, scenes being added, scenes being changed. Throughout the whole preview process it was a state of flux. We were promised the show would be locked off by the third last preview but that never happened!"

Michael primarily utilised STC's own gear working his design around what was available. Control was a DiGiCo SD8 with the STC having to upgrade their DiGiCo infrastructure as they had no opticore or large enough SD racks to cope with the amount of inputs generated.

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"They had to invest fairly heavily to upgrade their DiGiCo systems and you can smell the SD8 burning as every resource on it is utilised!" laughed Michael. "In fact I maxed it out so much, I had to use their second 24-channel version SD8 console for the band monitoring downstairs."

The STC has a centre cluster of Alcons Audio line array speakers plus four Nexo PS15 which is typically run as their proscenium system, however Michael added some Meyer CQ1's to it for a bit more grunt.

"It's a pop musical and needed to be suitably punchy," said Michael. "The Alcons were maxed out ..... in fact we're maxing out the entire sound system in the theatre!"

Microphones for the cast were the STC's Sennheiser kit consisting thirty-two channels of 5212 wireless microphones with 3732 receivers. The band had the usual suspects such as Sennheiser E901, 904, 414, a couple of DPA 4099 and Rode NT5 mics on the acoustic guitars.

"We also had two Shertler DYN P-48 contact microphones on the violin and cello," explained Michael. "They fed various delay pedals and volume pedals, which the two lady players adapted to very quickly. Isaac Hayward did an amazing job of the arrangements and had written in particular lines where the strings had to have effects on them. The idea was to thicken up the string section and there are a couple of tunes where the strings will drop an octave and thicken up the sound then put echoes and delays on it."

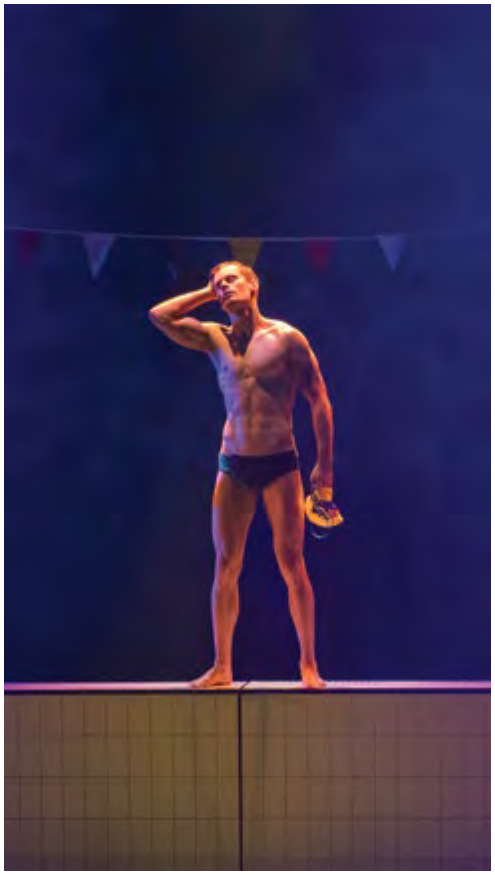
Michael describes the sound design as a collaborative effort between himself, Isaac and the song writers. As well as a few samples, there's a wide variety of music genres from rap 'doof-doof' songs with low frequency sweeps to string-based ballads and then rock pop tunes.

"It was very much a collaborative effort to ensure all of the elements were audible and the challenge there was to try keep enough space in the musical arrangements and the sound design so that the vocals were crystal clear," added Michael. "Many of the songs are very witty and quirky so it's imperative that you can hear all of the words clearly. Every now and then there was a bit of a contest as to whether the lyrics or the beat would win! I had to make sure the lyrics were the winner whilst still giving it that dynamic push, plus ebb and flow. It's been a tricky mix."

As the band are housed downstairs in a box in the basement there was no sound acoustically heard onstage or out in the auditorium, hence the sound for the theatre room had to be produced.

"When you're doing dynamic shifts it only takes a millimetre on the fader to get a response so you really have to be very together to get the correct fader moves at just the right moment otherwise it's in danger of being either too loud or too quiet," said Michael. "Unfortunately we weren't afforded enough time to do proper sound checks; we needed more than one band call, we needed several calls to finish the mix but again, everyone was struggling for time. Of course, sound is the one department always at the bottom of the food chain which is ironic seeing as it's a musical!"

After collecting positive reviews and the "house full" sign going up for nearly every performance, Muriel's Wedding The Musical will return to the Lyric Theatre in July 2019.



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'The Curious Incident of the Dog in the Night-time'

Multi Tech Award-Winner Finally Lands in Oz

>> Joshua Jenkins as Christopher Boone with Emma Beattie as Judy, and company (Photo Brinkhoff Mögenburg)

How do you translate the story of what's going on in the mind of a 15-year-old boy on the autism spectrum who tries to solve the murder of a neighbourhood dog onto the stage? With one of the most critically lauded productions in modern theatre. Jason Allen visited The Playhouse at Arts Centre Melbourne just before curtain to see how it's done...

>> Joshua Jenkins as Christopher Boone (Photo by Brinkhoff Mögenburg)

The stage adaption of Mark Haddon's 2003 novel is a modern theatre technology phenomenon. Its stage design, reliant almost entirely on projection and pixel mapping, was unlike anything seen in dramatic theatre until its inception. When it debuted on the West End in 2013, lighting designer Paule Constable won her fourth Olivier award for the show, while Best Set Design was won by Bunny Christie and Video Designer Finn Ross, with Ian Dickinson picking up best Sound Design to boot. It was showered with Tonys, Drama Desk, and Outer Critic's Circle Awards in the same categories when it ran on Broadway in 2015.

England's National Theatre, in association with The Melbourne Theatre Company, has brought the show to Melbourne for a seven-week run, which has already sold phenomenally well. The show's reputation truly proceeds it, and in tech circles, we've all gasped at and shared the tantalising videos of the incredible visuals that are created by video projection and pixel mapping onto the black-box grid that makes up the entirety of the stage.

Modular Touring

The first thing that strikes you walking onto the stage is the modularity of it. Everything – walls, lights, the square truss above you in the grid, floor – is pre-rigged and shipped in sections and bolts together on site. The floor is amazing – it's just black with a grid on it, but when Head of Video / Deputy Head of Lighting Cairn Stewart triggers a special lighting state that's only for maintenance; an image that outlines where every cable, speaker, fixture, and trap door, colour-coded according to which department it belongs to, beams onto the surface ensuring no-one breaks anything during works. All fixtures and projectors in the grid above us were pre-rigged and shipped like that. Just as well, as getting this show in and functioning is all about precision.

>> *Cairn Stewart and his wireless ETC Gio*

>> *The grid*

The current world tour version uses the original West End design, with only minor tweaks for portability made by Paule Constable and most of the original creatives in a three week tech period in Manchester before it headed off. We asked Cairn if the high-tech nature of the show makes it harder to bump-in and tech. "Truthfully I'd have to say that it does make it harder," he conceded. "As I'm sure anyone who's ever opened a laptop can appreciate, A/V can be temperamental. With no fewer than nine different adapters, breakouts, and connections between the computers backstage and projectors in the rig, there's a lot to go wrong. That said, with regular maintenance and a bit of troubleshooting, we keep it going without too much trouble."

>> *Joshua Jenkins as Christopher Boone & Oliver Boot as Policeman (Photo by Brinkhoff Mögenburg)*

The Incredible Array of Racks Side-Stage

>> *Pre-show projector line-up*

The lighting rig is relatively straightforward; five Vari-Lite VL3500s, 26 Martin MAC TW1s, six ETC Revolutions, 15 ETC Lustr2s, a selection of generics, and a couple of LEDs. "Where it gets complicated is the 700 LED pixels across the set and in props, plus video through the eight Panasonic PT-DS12k projectors," expanded Cairn. "This all comes back to three Avolites ART 2000 racks for power, many DMX buffers, and a Luminex switch for data, filtering back to two ETC Ions and an ETC Gio for control. The video content is powered from four Mac towers which each run Catalyst video software and have a Datapath x4, meaning they are able to each run four video outputs. The pixels are driven by a combination of two Mac Minis running Catalyst for when they sync with video content, and through Eos pixel mapping when they are used for stand-alone effects."

While demonstrating his handy wireless ETC Gio rig that he uses onstage for the projector line-up each day, Cairn explains how the show actually runs; "The ETC Eos system is the powerhouse behind the show," he stated. "We run two simultaneous cue stacks, one for LX and one for video, on all three desks (Master, Back-up, and Client) which enables us to have full access to the projectors via macros, and every light in the rig, making for a seamless production. When you're operating the show from the control position, you have the Gio as well as two KVM systems. One KVM acts as a remote access to the Ion backstage and the other gives us access to all six Macs running the video. The service PC we link on the network and a Multiview page where we can see all 18 outputs at once, nine main and nine back- up. This can make problem solving from control so much faster and easier."

>> *Joshua Jenkins as Christopher Boone with Amanda Posener, Matt Wilman and Oliver Boot (Photo by Brinkhoff Mögenburg)*

>> *Joshua Jenkins as Christopher Boone (Photo Brinkhoff Mögenburg)*

>> *Joshua Jenkins as Christopher Boone with the company (Photo Helen Maybanks)*

>> *Joshua Jenkins as Christopher Boone, Matt Wilman as Mr Thompson, and Crystal Condie as Punk Girl (Photo by Brinkhoff Mögenburg)*

These Projections are Accurate

With so much tech backstage, what's the aspect that has caused the most challenges? "For the most part, it's the projection mapping that gives us issues," related Cairn. "The margin for error when you quite literally have a grid on stage to align to is ridiculously slim. We are constantly battling against lens heating and cooling, as each image can shift up to half a metre as the temperature changes. As a result, before every single show we preheat the projectors and do a 16-point keystone projection line-up for all eight projectors, timed to finish as close to the house opening as we physically can. Stage management and FOH rarely thank us, but it's absolutely necessary."

Like all live productions, being prepared for failure is the first step to success. "The connections between our separate systems are vital," Cairn emphasised. "If any of these are severed, it becomes apparent very quickly. A rack-mounted ETC Ion backstage acts as the master system. It, in turn, triggers Catalyst over Art-Net to output video content, or triggers the projectors to open their shutters. Equally, the Luminex box which supplies data to the pixels would be an integral item to lose. As such, we run a full redundancy system for it. Every output to a projector has a backup which can be remotely switched to by the operator from the control position. We also have protocols in place for if we lose a certain lamp or projector. However, I'd say more valuable still is that I work with great technicians, both on the ground, and available at the end of a phone. It just makes all the difference."

1. The ETC Ion in charge backstage

2. The four Macs running Catalyst

2018.

IT'S TIME FOR SPATIAL AUDIO

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SOUNDS & MOTION

Whether you're an engineer or producer, 2018 should be the year you get back to recording your own music or playing live again. Isn't it the reason you found yourself in this crazy industry in the first place?

LISTEN HERE
BACK ON TRACK

ANDY STEWART

By far the most common story I hear, when someone describes the way they got into our beloved music industry, is that they started out playing in a band. More common still is the story of how that's no longer the case.

Before the word 'career' entered their vocabulary, or ego got the better of them and they started introducing themselves as a 'producer', most engineers and producers played an instrument and/or sang in a band. Their beginnings were humble yet ambitious, their expectations simple: I want everyone to love my music.

Fair enough. It's good to be ambitious.

But of course, for the vast majority of us – and by that I mean ninety-nine percent or more – the ambition for fame, riches and glory recedes (if it every was truly there in the first place), replaced by the need to earn a living, pay the rent and possibly feed a family. And in many respects this is the more admirable, rewarding ambition in the end. Though I can't speak for others on this, personally I'd rather continue working in the industry for a wage and gaze into the eyes of my children every night than reminisce about the days when I stared off stage at adoring fans.

I have no choice in the matter now of course: there are no adoring fans, but nor am I the slightest bit interested in having any. I'm content with where I'm at; I still play live regularly and perform on albums almost every week. Simply put, I just love playing.

But if I miss anything it's recording my own music either individually or as part of a band.

TIME IS MUSIC

There's a reason for that – or so many of us would assert. It's exceedingly difficult to set aside time, devoting huge amounts of effort to your own production when you've worked on hundreds of albums for other people, several of which are ongoing. The same goes for getting a live band up to speed. Have you ever tried getting six adults over 40 together on a regular basis for band rehearsals? There's always someone with an excuse – every week.

But even if you're trying to get a personal solo recording project off the ground, for many of us it's still virtually impossible to find the motivation to step back through the airlock after-hours to create more music when you've worked all week in the studio for others. As crass as it sounds, when no-one's paying you it's hard to drag yourself back to the console for more punishment.

But is it really like that? Written down, this looks like the lamest excuse under the sun. You could just as easily argue the opposite scenario: that all the experience at your fingertips makes your own solo production easier to grapple with, not harder. Surely it's simpler to satisfy yourself than accommodate the musical tastes and preferences of others?

But then again, maybe deep down you're not interested in making your own music any more. That's perfectly understandable, many of us aren't.

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

But for those who are – but still don't – maybe the real story is that we fear our own mediocrity, though we won't admit it. This business we're all in – of writing lyrics, melodies and music, and performing it all in the studio or on stage – is confronting and emotionally risky, to say the least. So it's demoralising (not to mention potentially devastating) when you can't get the best out of your own performances. In the solitude of a late night recording session there's no-one to turn to (or criticise) but yourself, and it's only then you come to realise how hard it is to perform in front of you, Mr Producer guy.

But getting a taste of your own medicine like this has its advantages. Humbling yourself in front of the mic, with your penned lyrics in hand, teaches you to appreciate what your many clients go through almost ever day.

For an artist, the personal attachment to every aspect of the music making process is almost visceral, something that's never easy to empathise with as a producer or engineer unless you've experienced it yourself first-hand. Stepping up to a mic is genuinely hard. If you've forgotten that feeling, try ad-libbing a backing vocal while 10 on-lookers stare in at you through the control room glass. In many respects, being a producer is the easiest job in the world, by comparison – like falling off a slimy log.

GOING SOLO

I think it's time the nonchalant excuses for why we still haven't recorded that solo album – "I'm so busy," or "I've made so many records for other people I haven't got the energy for my own" – were cast aside, and we all got real in 2018. No more bullshit; no more self-delusion mixed with hollow, self-aggrandising rhetoric. It's time we played music again, and put the careerist aside, even if only for a little while.

It feels good to work on your own music. It's not a luxury or an indulgence; it's what you do (or at least did). In my case, I started out buying audio equipment for a couple of music projects I was working on, with the intention of continuing on as a solo artist. That was 30 years ago. I have lots more gear now, but ironically no more albums. Actually, I've never cared too much about it until now. These days producing is my day job and I wouldn't swap it for anything, but I think this year is the first time I've felt the urge to get my next album over the line… finally.

For many others like me who haven't fulfilled a similar promise to themselves, maybe this year is finally the year when you turn that wealth of skill and talent of yours into a something you can finally call your own. It's been left untapped for too long, and time's a wastin'.

If you love music, and loved playing it in years past, get back into it as fast as you can. Not only will it reinvigorate you personally, it will refresh your career as a producer or engineer. Not that such a cynical reason as this should be what finally motivates you to do it. Your art is as important as anyone's, and being an engineer or producer should never overshadow that. And as we all know, there's nothing worse than working with a stale old curmudgeon embittered by the loss of his or her musical career. Don't become one of those people whatever you do.

If a love of music drew you to the industry, whether by design or accident, let it be the thing that keeps you feeling good about it.

history 1991: 2018

by Daniel Cole

Where we sift through the CX archive for the shiny and tarnished from 5, 10 and 25 **years ago.**

1993 was a turning point for CX Publishing with the publication of Connections #1 in February, replacing the Jands sponsored Channels magazine. 'Great idea but a bad time' said some in the industry - and they were right: growth in Australia had been revised down to 2.5 per cent; at US.66c the AUS dollar was at its lowest ebb since 1987; interest rates were 10% after a recent high of 17; and Prime Minster Keating was about to call an election for March 1993 (denying involvement in a multi-million-dollar salami venture along the way ...).

We went ahead, producing a fully independent and industry focused journal for the technical entertainment sector - 80 pages crammed full of articles and news.

A highlight article was "Getting Rock & Roll on the Road" where four international road managers (Pink Floyd, Genesis, Chicago, U2) met at LDI, Dallas and talked tin tacks such as how to reduce 13 touring trucks to 7, and keeping it simple: "Put that PA as far apart as you can, put the group as for forward into the audience as you can. Make the show as simple as possible, focus the show on the artist - common theatrical stuff that somehow got forgotten a long time ago. Standard theatrics pay off at the box office and pay off on the production sheets" (Morris Lyda).

Certainly the manager of an early '80s Australian tour of a disgraced '70s glitter star had different ideas, as recounted by the editor in 'Great Mistakes'. What was endured and cannot be unseen! The skill of the writer in extricating himself from the tour - AND getting paid impresses.

Other items in the inaugural issue included a wrap of NAMM; Lighting the Moscow Circus; Frontier Touring's Guns & Roses (delayed) concert, and Elvis & Me - a Bruce Jackson interview (and elsewhere, how Apogee came to be).

Fast forward to 2003, and there was no February magazine. After 10 years and 103 issues Connections was to evolve into CX Magazine, so staff were preparing the first edition pegged for March 2003 - more on this issue next time.

Five years ago and CX Magazine was in full-swing with Coldplay on the cover, part of our production coverage that month that also included Goyte, Simple Minds and Mariah Carey.

In Gearbox we reviewed Elan Audio's RMU-01 audio monitor, Martin's M2GO lighting control system, the Shure VP89 shot-gun mic, Bose's L1 Model 1S 'line array' speaker system, and two iPad oriented mixing consoles - the Mackie DL-1608 and Roland's M-200i V-Mixer.

In 'The Install Advisor' Jimmy Den-Ouden wrote about lighting for TV studios, with suggested equipment per application, and in our studio section Andy Stewart advised about final stage mixing and how not to lose sight of the Big Picture. Meri Took was our industry 'legend' interview that month - production manager par excellence.

A free, one-time sign-up enables access to these and all editions from the CX archive: www.cxnetwork.com.au

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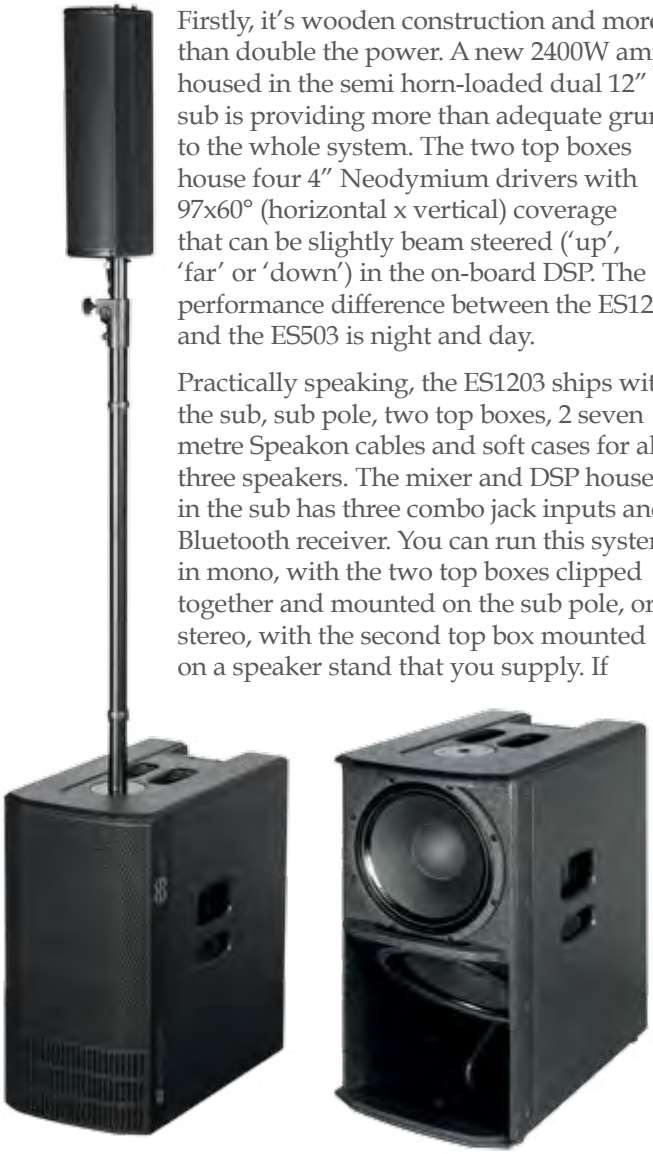
DBTECHNOLOGIES ES1203

GIVING IT SOME STICK

By Jason **Allen**

The ES1203 is the new two-top box, one sub, portable stick PA from dBTechnologies. It was with some trepidation that I approached it as I was not a huge fan of its predecessor, the ES503. The previous model was plastic, the top boxes clipped together with a poorly conceived sliding magnetic system that almost needed a crowbar to separate, and its performance was suited to speech and low level BGM, at best. At least it was cheap.

Imagine my surprise when we ran the level up on the ES1203 running in stereo mode, and it damn near pinned me to the wall. There were mids, low mids, and musical bass! Vocals were sitting confidently in the mix without any perceivable distortion! It is, in short, a capable PA in a very small package. So what's changed?



Firstly, it's wooden construction and more than double the power. A new 2400W amp housed in the semi horn-loaded dual 12" sub is providing more than adequate grunt to the whole system. The two top boxes house four 4" Neodymium drivers with 97x60° (horizontal x vertical) coverage that can be slightly beam steered ('up', 'far' or 'down') in the on-board DSP. The performance difference between the ES1203 and the ES503 is night and day.

Practically speaking, the ES1203 ships with the sub, sub pole, two top boxes, 2 seven metre Speakon cables and soft cases for all three speakers. The mixer and DSP housed in the sub has three combo jack inputs and a Bluetooth receiver. You can run this system in mono, with the two top boxes clipped together and mounted on the sub pole, or stereo, with the second top box mounted on a speaker stand that you supply. If necessary, you can run two ES1203 systems as one big stereo system, with two top boxes clipped together per side. If you did, you'd easily be able to cover a 200 to 300 person room, depending on the content.

When clipped together as a single column, the top boxes only require one Speakon patched to the bottom box, and the redesigned box connection does the rest. The new magnet and metal lock system is a huge improvement on the last generation – they snap together vertically with ease and form a reliable and trustworthy connection, and are gracefully released by pressing tabs and then simply lifting apart.

Down on the sub, an ergonomically placed OLED screen and 'one knob' interface allows you to access all of the mixer and DSP parameters. I've used quite a few stick PAs recently, and I swear at least three of them, including this one, are actually using the exact same screen, menu and software as one another, perhaps OEM'd by the same supplier. The upshot is, it's all very intuitive and familiar – mic/line switching for inputs, levels, presets, system config, it's all there and pretty obvious.

The only things that weren't immediately easy to get to were some of the more flexible and useful EQing features. For example, there's a three-band semi parametric with sweepable mid as the system EQ by default. You can actually change that to a high or low shelf if you like. There's also semi parametric EQ over the mic ins, but you can also change that to a feedback suppressor or HPF if desired – that was not easy to find, as you have to go poking around in the channel EQ page, mouse over the right button, and press. Mic gain has only three settings; 0, +10, or + 20dB, but the mixer is useful enough for that not to be an issue.

Stick PAs are improving across the market from nasty tinny things for speech into actual alternatives for full spectrum reproduction, and the ES1203 is a solid performer. With thoughtful accessories available like magnetic dollies for the subs, it's even conceivable that two ES1203s could handle a (very) small band tour.

Brand: dBTechnologies
Model: ES1203
Pricing: RRP $4,699 inc GST
Product Info: www.dbtechnologies.com
Distributor: www.nationalaudio.com.au

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MACKIE THUMP 12A

THUMPING THE NEW THUMPS

By Jason **Allen**

Mackie's low-end, stalwart plastic powered box range, the Thump Series, have been given an update. Sporting a new 1300W amp, there are four new top boxes and a sub, the 12A, 15A, 12BST, 15BST and 18S respectively. The 'BST' models include Bluetooth streaming and control, which comes with tricks like paring or zoning speakers, adjustable EQ options, and fly points. The regular 'A' models are more basic – two combi ins, a thru, and four EQ presets. The 18S is a 1200W 18" sub.

This review saw us put the 12A through its paces. No bells, no whistles, just a 12" woofer and ¼" titanium compression driver allocated 1000W and 300W respectively from the new power-factor correcting amplifier that triggered the redesign of the series.

Physically speaking, the redesign has given the Thumps a more solid, contemporary look, a little like QSC's K.2s. The new boxes have a dual angled design so you can run them as monitors either way. The two combi jacks on the rear panel have their own gain pots, and the mix out its own volume control. The four presets are selected with a simple button. 'Music' is a slight scoop for DJ mode, 'Live' is flat, 'Monitor' a slight HPF with a 3kHz scoop, and 'Sub' is a HPF for running with subs.

So how do they sound? Let's be honest, we're all grown-ups here. This is a magazine for people working in professional production and installation, and these boxes can be had at around $500 each. They are a sonic compromise – if you find yourself being asked to put them in an installation, buy a smaller, higher quality, surface-mount speaker. For rental, save up and get something better. I honestly do not expect them to go into any serious rental or AV application. They are squarely an MI box for MI customers.

So what's wrong with them? Just the usual for a 12" at this price point – terrible phase response resulting in confused mids and highs. Vocals and details vanishing, a general temporal smear across the frequency spectrum, and honky bass with obvious lobes. Yes, that is very critical, but when listening to a professional loudspeaker, you've

Brand: Mackie
Model: Thump
Pricing:
around $500
AUD inc GST
Product Info:
mackie.com

got to imagine what it would be like to mix live music on it, and on these, it would be hard work getting a vocal to sit right. However, most pros would be able to stomach using them for playback.

But, if someone's looking for a cheap 12" as a vocal monitor in a band rehearsal room, there's certainly worse products out there at the same price. The warranty offered is more than reasonable, and they're incredibly light at 13.2 kg. For schools, break-outs in churches, and weekend warriors, they're a reasonable solution compared to disappearing down a no-name rabbit hole.

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LSC LIGHTING SYSTEMS

SYSFLEX DANTE ENDPOINTS

GUIDING YOU IN AND OUT OF AV NETWORK HELL

By Jason **Allen**

Ah, Dante. Australian wonder invention and the most successful AoIP product in history. We love Dante; on our consoles, desks, processors, amplifiers, stageboxes and now even our microphones. But with all the serious bits of the system taken care of, what about all those 'other' things we need, that we used to just be able to connect to an analogue tie-line, run a split, or just a cable for? And what about in AV world, increasingly relying on Dante on the corporate network?

Enter RDL's SysFlex series of compact Dante endpoints. These eight units and associated rack, wall, and surface mounting solutions will get you out of 99% of all tricky audio requirements across your performance venue or commercial install. You can house multiple units in a central rack with the SysFlex rack adapter, mount them on an under-counter bracket, put them on a mic stand adapter or screw them to whatever's available. Let me count the ways they can get your audio on or off the switch:

SF-BNC2
has stereo RCA and 3.5mm jack ins and outs and can either put two line level sources onto the network or output two from it. Is there a single install that wouldn't use this? PoE.

SF-DN4
takes 2x AES/EBU on XLRs, 2x SPDIF on RCAs or 2x optical ins and converts them to Dante. PoE.

SF-ND2
takes two Dante channels and can output them as AES/EBU on XLR, SPDIF on RCA, or optical. PoE.

SF-NH1
takes two Dante signals and outputs them to a 3.5mm headphone jack with headphone preamp and volume control. Possibly my favourite and astonishingly useful. And yes, it's PoE.

SF-NL2
two Dante channels to analogue out on XLR, which you can switch from line to mic level if you need to feed media. Protected against accidental +48v and PoE.

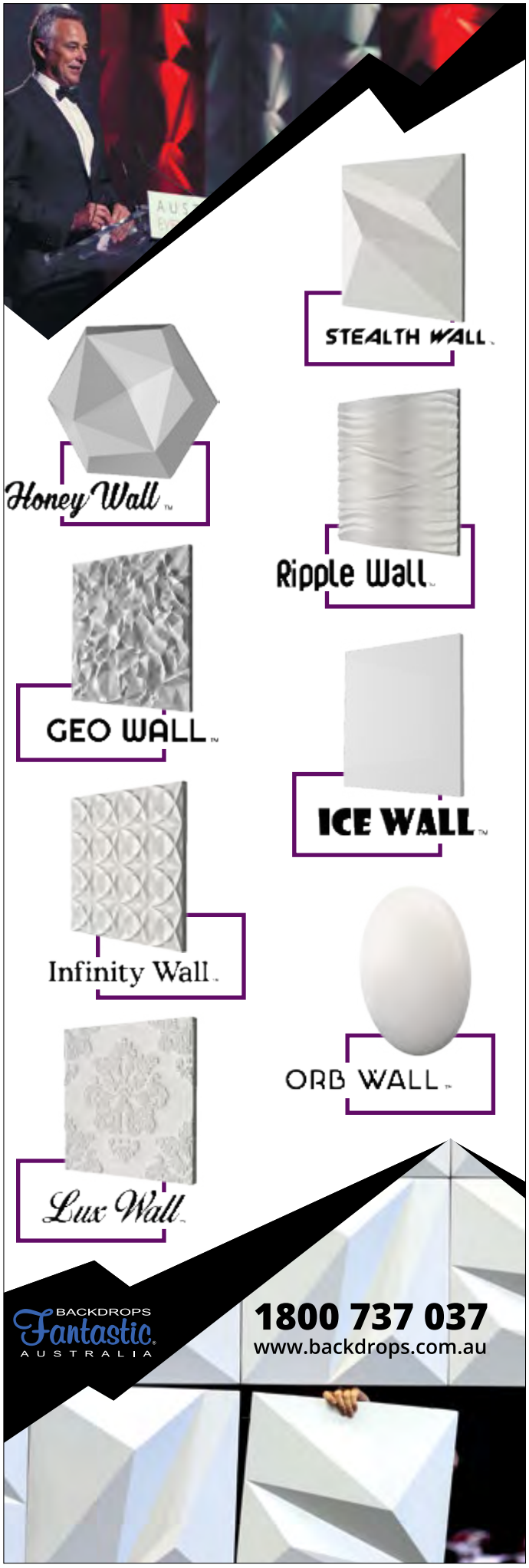
SF-NP40D
A tiny networked amp! My equal favourite with the SF-NH1. It takes two Dante outputs and runs them through two 20W amplifiers into 4 or 8 ohms. Not PoE, and fair enough.

SF-UN1
puts two USB audio channels onto the Dante network, solving your soft codec and general laptop dilemmas. PoE.

SF-XMN4
Four mic ins on XLRs, with +48v, switchable gains from 40 dB, 48 dB or 62 dB. 24 bit AD conversion and PoE.

These units are all in solid metal housings, and the only drawback to any of them is that they aren't available with etherCON (yet…), meaning they're not suitable for some live or particularly rough install applications. I honestly can't think of an audio eventuality that isn't covered by this range, except conversion between Dante and specialist formats like SDI, MADI or CobraNet, which, if you're doing, you have bigger problems. Well done RDL!

Brand: RDL
Series: SysFlex
Pricing: From $717.46 to $1,559.12 inc GST
Product Info: www.rdlnet.com
Distributor: www.pavt.com.au



EV ELX 200

FAMILY OF THREE HIT SWEET SPOT

Electro-Voice have organized their powered loudspeaker lines into four families, and it was the second of these I demo'ed in Sydney. Covering three models, the ELX 200 range comes in composite plastic enclosures, with two matching wooden subwoofers.

While I was focused on the ELX 200 12P, it's cohort of 10" (10P) and 15" (15P) were there for comparison. I always find it interesting to see how closely a manufacturer can match up a series of products.

By Julius **Grafton**

Let's get down to what is a 12P? Obviously it is a 12" driver, mated with a 1" titanium high frequency device. The crossover point is 1700Hz. Somewhat strangely, the 10P crosses at 1800Hz and the 15P at 1600Hz. It should be noted that this is a minor variation at this frequency.

My EV contact is reminding me about the 'two pillars of design philosophy – an EV box has to sound like an EV box, and then under no circumstances will vocal reproduction be compromised."

We hit play. What I hear from the 12P, I also hear from the 10P and the 15P. There are incremental changes in low frequency, as you would expect, and in gain (since the same level is sent to all three in sequence). The larger boxes are naturally louder, despite all three having the same engine room (amplifier), rated at 1,300 watts.

Overall it is pleasing audio. I do the 'check one-two' using a Shure SM 58, as this is my common reference point and the muscle memory or psychoacoustic

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PRICES
10P 1379 inc
12P 1489 inc
15P 1649 inc

12" sub 1649
18" sub 1849
PRODUCT INFO:
www.electrovoice.com

mojo in my mind always advises me as to whether I am liking what I am hearing, or not. It passes that test.

We did the testing using 'Live' mode which is one of four presets you dial up on the DSP module out back. These include 'Music', 'Speech' and 'Club'. The little screen informs you what is going on, which is a superior system to those which require you dial in using an app. Mind you, it also has remote control and monitoring via an app – if you need that.

It has 3 M10 mounting points, and also a useable wedge angle for sideways, stage monitor applications. In this case the wedge angle is good – we have seen some that are token at best since you need a spare DI box to prop them up!

In concert with the three ELX 200 siblings, are two wooden subs – one with a 12" woofer, the other loaded with an 18". I didn't hear these, as I was mainly interested in how the 12P sounded alongside the smaller and larger versions.

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» Product name: SSL Live. L200 Console

» Product info: SSL L200 mid-scale console, superb sound, accelerated workflow with advanced feature set of SSL Live.

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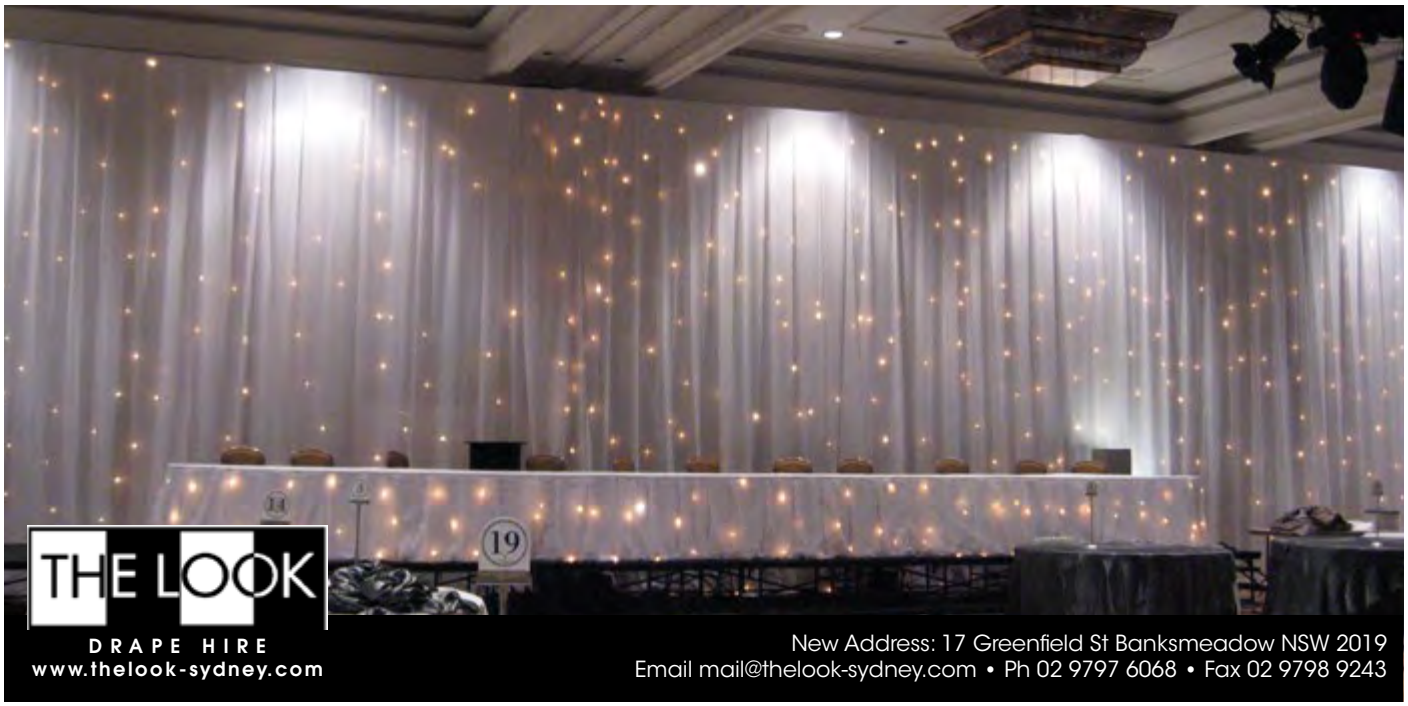
» Exhibitor: **Audio Logistics**

» Product name: CAYMON Universal Flightcases

» Product info: The new intelligent way to transport your gear.

» Audio Logistics info: Audio Logistics fills a niche in the Australian market for a 'boutique' audio distributor, representing a range of premium pro-audio and AV integration equipment. The range includes some of the most unique and innovative products available, suitable for a wide variety of environments and applications from the 'everyday' through to the 'esoteric'. Honest advice, genuine project assistance and superior after sales support are just some of the ways we ensure we effectively service our industry partners.



» Exhibitor: **Audio Visual Engineering (AVE)**

» Product name: Chauvet EVE-P-140 VW

» Product info: EVEP-140 VW a variable wash light featuring cool white, warm white and amber LED with fanless design and flicker-free output.

» AVE info: Audio Visual Engineering P/L Australia (AVE) has been operating in Australia for over 20 years with a team of 45 staff.

Our primary focus is importing and distributing Professional Sound and Lighting Equipment to the Entertainment industry.

Some of our key markets include Sporting Associations, Schools, Churches, Entertainment Venues, Restaurants, Convention Centers, Hire Production companies and DJ's.

Some of the brands we exclusively distribute in Australia include Chauvet DJ, Beamz , Gemini, Reloop DJ, LD Systems, Gravity Stands, Laserworld, Chromateq, Magma, Vonyx and Power Dynamics. Along with these products we also sub-distribute a number of major brands including Pioneer DJ and EV.

» Exhibitor: **Bluebottle**

» Product name: Astera AX5 TriplePar™

» Product info: 3-in-1 The Perfect Par. The AX5 is wireless controlled and offers both battery and wired power. It's the only Par you'll ever need.

» Bluebottle info: Bluebottle is an integrated solutions provider, specialising in Lighting, Sales, Control, and Project Installation. With over 30 years working in entertainment and commercial sectors we offer products from a broad range of manufacturers. These include Astera, Soraa and Lanbox, and as a Philips Value Added Partner, Dynalite, Color Kenetics, Philips Luminaires, Philips Selecon and Showline.

» Exhibitor: **Bosch**

» Product name: Electro-Voice ELX200 Powered Family

» Product info: ELX200 weighs less, does more. 1200 W class-D amp, 130-132 dB peak SPL, superb sound & portability.

» Bosch info: Bosch owns and distributes Electro-Voice, Dynacord, RTS, Telex and Bosch audio products. This year we are proud to show off the new ELX200 portable family, Evolve 50 column speaker and the EVID-S wall mount speakers from EV, and LB20 wall mount speakers by Bosch. The new Dynacord L&C series amps also move the goal posts with performance and value for money.

» Exhibitor: **Cases Com Au**

» Product name: Mobile Workstations

» Product info: Mobile Workstations by Cases Com Au. Get all your gear together in one easy CUSTOM case that YOU design!

» Cases Com Au info: Cases Com Au are Australia's largest case manufacturer/importer of road cases with FULL in-house case manufacturing....one of the last in Australia! Manufacturing traditional road cases, welded aluminium cases, road bags (canvas) and covers. Full case design team. Located in Brisbane and Auckland. Exporting to SE Asia, shipping Australia/NZ wide.

» Exhibitor: **Clearlight Shows**

» Product name: Swefog Duramax Intellahazer 1k8 haze generator

» Product info: Highest output water based hazer. 100% LEAK proof, new bag-in-box fluid container. Wide beam output reduces noise.

» Clearlight Shows info: Clearlight shows has been established for over forty years. Specialising in theatrical lighting hire and sale, Clearlight Shows is well known for being a one stop theatrical supplier. The products we import are known internationally for their quality and reliability. We stock a huge range of lamps and accessories, including hard to find products.

» Exhibitor: **CMI**

» Product name: JBL EON One Pro

» Product info: The new JBL EON ONE PRO is a portable, linear-array PA with a lighter, more compact design and up to six hours of play time provided by a rechargeable lithium-ion battery.

» CMI info: CMI Music & Audio Pty Ltd is Australia's leading distributor of quality Entertainment Technologies, High Performance Professional Audio and Musical Instruments Products to diverse markets.

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» Product name: SM80F

» Product info: Combining synergy and tapped horns in one relatively small package, the SM80F performs like nothing else its size.

» Danley Sound Australia info: Danley Sound Labs is the exclusive home of Tom Danley, one of the most innovative loudspeaker designers in the industry today and recognised worldwide as a pioneer for "outside the box" thinking in professional audio technology. We continue to demonstrate the performance and cost advantages of Point Source PA systems, and look forward to helping you with your project.

» Exhibitor: **Epson**

» Product name: EB-L1755UNL

» Product info: The EB-L1755UNL delivers 15,000 lumens of colour/white brightness, featuring native WUXGA performance with Epson 4K Enhancement Technology.

» Epson info: Epson is a global technology leader dedicated to connecting people, things and information with its original efficient, compact and precision technologies. With a lineup that ranges from inkjet printers and digital printing systems to 3LCD projectors, smart glasses, sensing systems and industrial robots, the company is focused on driving innovations and exceeding customer expectations in inkjet, visual communications, wearables and robotics.

Led by the Japan-based Seiko Epson Corporation, the Epson Group comprises more than 80,000 employees in 86 companies around the world, and is proud of its contributions to the communities in which it operates and its ongoing efforts to reduce environmental impacts.

» Exhibitor: **Event Communications Australia**

» Product name: Greengo Digital Comms Beltpack or Wireless Beltpack

» Product info: 32ch comms Beltpack - No single point of failure – No master required.

» Event Communications Australia info: Event Communications Australia is a boutique event comms sales and support specialist. We offer full event and broadcast communications systems solutions including Matrix, wired, wireless and two way systems and infrastructure. We just do comms, we do them right!

» Exhibitor: **Eventec**

» Product name: M1B50RGB Beam Mover

» Product info: 50w RGB LED, 2 degree beam angle, 8 Facet prism, focus, 17 gobos, no chromatic aberration and premixed RGB.

» Eventec info: EVENTEC is an Australian wholesale distributor, exclusive distributors of Event Lighting, Event Lighting Lite and Event Pixels. EVENTEC also distributes Antari Fog Machines, one of the most highly distinguished brands within the effect machine industry. EVENTEC distribute LED lights and screens, unique DJ booths, custom LED displays, truss, hardware and staging. EVENTEC strive to provide the industry with high quality products feature packed and designed to perform reliably and consistently. Proudly Australian owned and operated, EVENTEC combines extensive research and development with a vast degree of hands-on industry experience.

» Exhibitor: **Highlite International**

» Product name: Infinity

» Product info: Infinity is a premium lighting range designed in Europe for professionals. A comprehensive range of moving heads and theatrical fixtures.

» Highlite International info: Highlite International is a Dutch company specialising in the supply of Entertainment technologies. With in house design and testing labs Highlite is one of the major suppliers to the rental, theatre and theme park market globally via its Infinity, Showtec, DAP, DMT and Artecta brands.

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» Exhibitor: **Jands**

» Product name: ROBE MegaPointe

» Product info: The all-new MegaPointe elevates the original all-in-one fixture to a whole new level!

» Jands info: Jands is an Australian owned company founded in 1970. Jands distributes and manufactures some of the world's most recognised brands in Audio, Lighting and Staging. Jands specialises in providing solutions for touring production, performing arts, live performance and hospitality venues.

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» Exhibitor: **Lexair Entertainment**

» Product name: High End Systems SolaFrame 750

» Product info: The newest and smallest framing fixture in the all LED Sola Series featuring a compact footprint but a huge feature set.

» Lexair Entertainment info: Lexair Entertainment is the exclusive Australian & New Zealand distribution partner for entertainment lighting and vision control systems from High End Systems, Green Hippo, TMB, Elation Professional, Theatrixx Technologies, Lycian and LDDE. Established in 2011 by Alex Mair, Lexair is a renowned and respected presence in the Australian & New Zealand lighting and vision solutions markets, representing global brands and products of the highest quality, and delivering an exceptional level of customer satisfaction and service.

» Exhibitor: **LSC Lighting**

» Product name: UNITY

» Product info: UNITY is a hybrid dimming/power cabinet system that provides dimming, LED control and direct power relays.

» LSC Lighting info: With a 30 year heritage of designing, manufacturing and distributing leading edge Lighting Control Products for the entertainment market worldwide, LSC Lighting Systems has developed a highly regarded reputation for innovation, quality and reliability in any of its products it produces. The company is proud to be 100% Australian owned and continues to control its own destiny by investing in product development and manufacturing the entire product line within its own purpose built facilities located in the south east of Melbourne.

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» Exhibitor: **Meyer Sound**

» Product name: LINA Very Compact Linear Line Array Loudspeaker

» Product info: LINA is the smallest loudspeaker in Meyer Sound's LEO Family, combining flexibility and portability with extended headroom and linear response.

» Meyer Sound info: Meyer Sound continually strives to elevate the overall dialogue about sound and bring greater awareness to the importance of how we hear and listen. A collaborative, results-focused approach to sound solutions drives a company philosophy where creative thinking, old- fashioned craftsmanship, and entrepreneurial technology are strongly intertwined. Tours for top-grossing artists and respected concert and entertainment venues rely on Meyer Sound, as do houses of worship, cinemas, restaurants, universities, corporate offices, and museums. With field offices and authorized distributors worldwide, Meyer Sound designs and manufactures all products at its Berkeley, California headquarters, allowing for rigorous quality control and testing. Scientific acoustical research and product development have earned Meyer Sound more than 100 US and international patents and numerous awards since its founding in 1979 by John and Helen Meyer. Meyer Sound is a registered trademark of Meyer Sound Laboratories, Inc. All rights reserved.

» Exhibitor: **NAS**

» Product name: MIDAS MR18

» Product info: 18-Input Digital Mixer for Tablets – 16 MIDAS PRO Preamps, Integrated Wifi Module & USB Audio Interface.

» NAS info: National Audio Systems offers a complete range of products built to suit all professional, commercial and industrial applications with trusted brand names from around the globe making National Audio Systems your "one-stop" audio wholesaler!

» Exhibitor: **Panasonic**

» Product name: PT-RZ21K laser projector

» Product info: Panasonic's new 20klm PT-RZ21K laser projector features a dual-laser 3-chip light source to make sure the 'show will go on'.

» Panasonic info: Panasonic have been providing industry-leading display solutions for Australian businesses for more than 35 years' and continues to be a pioneer in the AudioVisual industry. No other company has the product range, technology and global presence that Panasonic does, so we are well positioned with knowledge and resources to maintain our hard-won reputation for performance and reliability.

» Exhibitor: **PAVT**

» Product name: EAW RSX12M 2-Way Self-Powered Stage Monitor

» Product info: EAW RADIUS is designed to streamline setup and deliver maximum results in minimum time.

» PAVT info: PAVT is a distributor for Audio and Visual equipment. Based in Melbourne, we have been operating for over 30 years specialising Corporate, Live Sound, Professional Audio, Educational and Commercial Industries.

» Exhibitor: **Philips Entertainment**

» Product name: Philips Varilite VL1100 LED Luminaire

» Product info: The VL1100 LED delivers perfect hi-CRI 'tungsten' colour shift light from a unique LED engine.

» Philips Entertainment info: From the smallest of stages to the most ambitious of professional venues, Philips Entertainment Lighting is there to light up your show. Comprising automated luminaires from Philips Vari-Lite, Stage and display luminaires from Philips Selecon, and dimming and controls from Philips Strand, Philips Entertainment provides heritage and expertise from industry-leading portfolios, memorable and innovative effects for every experience.

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» Exhibitor: **RATstands**
» Product name: Jazz Stand
» Product info: The Jazz Stand is a unique fully adjustable music stand that folds completely flat for transportation or storage.
» RATstands info: For over 40 years RATstands have been designing and manufacturing music stands and sconces. The design philosophy is a simple one, to be inspired by the world's most demanding musicians to create the best possible music stands, lights and accessories. The result is a range of products that employ simple designs with technically advanced materials; LED sconces are available as 24v or 240v, and offer optional DMX control, wired or wireless, as well as Li-on battery options. Along with an extensive range of music stands and sconces, RATstands offer orchestra chairs ergonomically designed for musicians, and friendly to production crew. Models feature adjustable legs and seats, and can be vertically stacked 10 high. The innovative SpeedDeck portable staging system allows adjacent stage sections to be locked together with the turn of key for the quickest of set up and pull down RATstands is now distributed and stocked in Australia by CC's Light & Sound.

» Exhibitor: **Show Technology**
» Product name: AXCOR SPOT 300
» Product info: The new AXCOR SPOT 300: small body, big personality, mass appeal. With a price-point, physical size and power consumption that disguise its strength and creative potential.
» Show Technology info: Show Technology are the leading professional lighting distributors offering lighting solutions for commercial, entertainment and architectural projects across Australia and New Zealand.

We specialise in exclusively importing, wholesaling and distributing professional equipment from the world's leading manufacturers of lighting and control systems as well as associated equipment that support our products. Some of the world-class brands that we exclusively represent in Australia and New Zealand include Ayrton, Claypaky, Martin by Harman, MA Lighting, Coolux, ELC, Look Solutions, PULSAR, Robert Juliat, Studio Due, and Wireless Solution, as well as our own branded ShowPro products providing professional solutions for all budgets.

Our products are used in a diverse range of entertainment and architectural applications such as concerts, theatres, opera, television studios, schools, nightclubs, bridges, public spaces, convention centers, clubs, museums, house of worship and churches and more.

» Exhibitor: **Sound and Music**
» Product name: sE Electronics - The RNT
» Product info: The RNT is a brand new flagship condenser mic for the biggest sounds you've ever heard.
» Sound and Music info: Sound & Music is one of Australia's leading distributors of quality professional audio and musical instrument products. For over 25 years, Sound & Music has provided expertise and support to an extensive dealer network extending across Australia.

» Exhibitor: **Sparkular**
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» Exhibitor: **TAG**
» Product name: Allen & Heath SQ6
» Product info: Your 96kHz A&H SQ Series sets a new standard for compact digital mixers.
» TAG info: Established in 1984 TAG is one of Australia's leading full-line suppliers of professional audio equipment for the concert touring, commercial sound, retail, studio and broadcast markets.

» Exhibitor: **The Rigging Shop**
» Product name: Kinesys Motion Control products
» Product info: Kinesys design and build motion control systems for the entertainment industry, including hardware and software.
» The Rigging Shop info: The Rigging Shop has been created to supply superior products and services at very competitive prices to customers across a wide variety of industries. A huge range of products is available, we are the Australian agents and distributors for a large range of imported and locally sourced equipment which enables us to supply you the correct products and solutions at the best possible price.

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» Exhibitor: **ULA Group**
» Product name: Acme XA-600 Framing
» Product info: This 600W white LED engine high-power profile fixture offers CMY+CTO colour mixing, framing shutters and delivers superb visual effects.
» ULA Group info: The ULA Group are a specialist Visual Solutions provider and internationally recognized market leader in all facets of professional lighting, architectural lighting, LED screen technology, visual media and content management systems.

TASH SULTANA
ONE WOMAN ORCHESTRA

Text and Photos by Cat Strom

CLOSE YOUR EYES AND YOU'D THINK THERE'S A FULL BAND ONSTAGE, HOWEVER TASH SULTANA LAYERS AND LOOPS TO CREATE A MULTI-INSTRUMENTAL SOUND ON A SOLO STAGE.

Over the past twelve months, Tash Sultana has become one very talked about Australian artist having gone from busking on the streets of Melbourne to establishing a cult following.

Towards the end of last year, Tash embarked on her sold out Homecoming national tour that followed a massively successful international tour. This one-woman orchestra has extraordinary technical skills, seemingly able to play any instrument, and she has an incredible vocal range.

The show is a little chaotic as Tash never plays the same set list and the crew never know what is coming.

"It's half busked and half programmed," said Alex Hughes, lighting designer. "Once we've worked out what the song is, we just go from there and follow what she's doing onstage!"

Alex is fairly new to the camp, arriving in time for the Australian tour. His brief was to make Tash the centre piece, ensuring the lighting took a backseat and did not dominate. Normally Alex has a circle truss and upright trusses with lights that focus in on Tash but the circle could not be rigged at the Hordern Pavilion and so Alex had to rely on only the upright truss towers.

"I'm trying to essentially focus every single light on her, playing with angles and shadows and not too much front light," explained Alex. "I've put Martin MAC Vipers on the 2.5 and 3 metre uprights with more Vipers on the floor. I really like using MAC Vipers due to their output and colour reproduction. I have the Claypaky A.leda B-EYE K20 to do the side lighting and add ambience, they have a great zoom range."

Also in the rig were three SGM X5 strobes, used sparingly, and there were no followspots as it was all done off the moving lights. EI Productions supplied the lighting."

Media was controlled by a PRG Mbox v4, nothing custom just normal loops with a couple of effects overtop. Tash selected the content to which Alex carefully matched the lighting.

Many of you will know FOH engineer Ed Gamble as the Production Manager for Melbourne's Corner Hotel where he resided for nearly ten years, and it was there that he first met Tash. It didn't take him long to realise that this was one special act.

"They needed someone to run FOH, which I did, and she then asked me if I'd do a couple of Worker's Club gigs for her," said Ed. "There were people queuing around the corner to get in and from then on, the shows have continually stepped up and since then have always been full houses."

When Tash started to tour extensively, she didn't bring Ed but promised that once she could afford it, she would take him with her.

"It's been a real privilege to watch her create something and watch it fly," he remarked.

It's a simple gig in that there are only 12 channels but there's a lot more to it than that. Tash uses a loop pedal, changing the inputs to the loop pedal when required so by definition she's doing a lot of her own mixing and production. Everything that happens onstage, Tash sends down to a

Roland Looper Pedal which has two dual mono loops allowing her to layer a number of tracks down those two channels and send them back to control. All of the rhythmic elements come down one channel and all the melodic/harmonic elements of her performance down the other. Any mixing that goes on within those categories, happens onstage. In fact the bulk of the mixing of the show happens onstage, and for Ed and monitor engineer Jordan Tanner, it's more about redirecting her mix.

"It has its pros and cons - in some ways I lose a bit of flexibility but then again I enjoy not having to manage a whole 40 channels," added Ed. "Really quickly in the set I can get to the point where the channels are doing their own thing and I've got a feel now for having done so many shows, as to where things go for different parts of the set. I pretty quickly enjoy changing my mindset to what the air is doing in the room, and tweak things in that direction as much as managing the balance of a bunch of channels. I really enjoy that intensity and focus when I'm mixing for Tash."

Ed was operating a DiGiCo SD10, saying he loves the work flow on the console and the fact that he doesn't have to change pages.

"Tash has 12 input channels, then I double some stuff up and do my own FOH effects which gives me lots of flexibility right under my hands," commented Ed. "People sometimes ask me how much of her show is pre-recorded but it's not, to me she's still got a lot of busker at heart and it's still very impressive how she can adapt to different situations, improvise and handle different crowds."

DiGiCo effects favoured by Ed included a 1.6 second hall reverb and vocal plate reverb with plenty of pre-delay, fairly old school keeping the channels plain and boring. On the left/right out Ed favours multi- band compression to bring everything together so it's a bit like making an old record but live.

"Once I'm happy with the balance of the channels a lot of the mixing can just happen on the multiband compression," said Ed. "Because Tash is really producing her own stuff live, she's really refined which microphones to use as she's a bit of a gear hound. She uses either an AKG D7 or Shure KSM8 depending on the space, both of which I really enjoy, particularly the top end. I can feel that I can let the top end out more with these than with other microphones."

"ONCE I'M HAPPY WITH THE BALANCE OF THE CHANNELS A LOT OF THE MIXING CAN JUST HAPPEN ON THE MULTIBAND COMPRESSION"

Ed never tells Tash how she should do things acoustically, preferring to support her to do her own thing and dealing with the result FOH. It was a conscious decision he made early on to let her keep producing her own sound.

Jordan Tanner is a busy man, he is both tour and production manager as well as Tash's monitor engineer.

"It's full on but it's pretty much a team effort when it comes to the tour management," he said. "The travel logistics and accommodation is handled by myself and management, so the production management takes up more of my time for this tour. Moving into 2018, we'll distribute the load more."

Jordan also ran a DiGiCo SD10 at monitors describing DiGiCo as the king of consoles citing its' flexibility and its' capability so far as routing.

"Doing monitors for Tash is a challenging gig as you have to squeeze every last drop of gain before feedback out of your wedges," remarked Jordan. "DiGiCo allows me to route my signals in a way that I can process them accordingly. Tash has fairly high expectations for her stage sound so it's about me being able to deliver that faster. It is processing overkill when we've only got twelve channels coming off the stage but it's more about flexibility as far as workflow is concerned."

Typically, soundcheck is scheduled for two hours with the first 45 minutes spent fine tuning Tash's stage sound and the rest is a jam session allowing Tash to acclimatize to the stage.

During the set Jordan has to be very attentive to Tash as she often needs changes to her monitor sound although he has worked with her so long, he can often anticipate any required action.

"For the most part it's maintaining a stable monitor sound and taming any feedback that may rear its' head during the set," he said. "There's some minor cue stuff such as when she sits down to play a twelve-string at the end of the set and there are a bunch of level readjustments that happen at that point."

Tash uses only wedges although there was a Shure PSM1000 unit doing two stereo mixes for the stage tech and the guitar tech. On stage were four d&b M2 wedges for Tash and a pair of L-Acoustic SP18's behind her as she has a fairly hefty LF requirement. Ideally they would have preferred d&b M4 or L-Acoustics X15 wedges.

"It's just an output thing, obviously M2's are super loud but we prefer the M4 because it

has got so much more coherence through the high-mids which is where her vocal clarity and intelligibility is," stated Jordan.

Jordan reports he will be experimenting with Tash the use of IEMs in pre-production rehearsals in 2018.

"It's my hope that we can transition to exclusively IEMs but whatever we ended up with has to be comfortable for Tash," he added.

JPJ Audio provided the control package with in-house PA systems used.

ED GAMBLE AND JORDAN TANNER

LARA SMITH JPJ

MUMU MIXING

ALEX HUGHES AND BRYCE MACE

BY CAT STROM / PHOTOS: DAVID YOUDELL

alt-J worldwide tour

Three years of worldwide touring have forged alt-J's reputation as a fierce live act. alt-J have headlined festivals across the globe, including Australia's very own Falls Music and Arts Festival, and on their last international tour, alt-J sold out the London's iconic O^2 Arena and New York's legendary Madison Square Garden.

The trio are one of British music's most intriguing success stories with their music a signature blend of layered, folk-inflected dub-pop and soaring alternative rock. The name derives from the combination of keys that results in a delta sign (Δ) on Mac computers.

Their recent Australian tour was a continuation of the world tour design by Jeremy Lechterman and Jackson Gallagher, with Jeremy commenting that the band isn't terribly involved in the production design.

ALT-J TOOK TO A STAGE LIT WITH SCEPTRONS THAT SEGREGATED THE PERFORMERS AND DAZZLED THE EYE

"It's mostly Jackson and I along with Tav, their manager," he said. "We had free reign to develop the show together, reacting instinctually to the music. The band prefers to be in shadow, so isolating them and anonymizing them was the starting point. "Our goal was to create an immersive visual experience which reacted sympathetically and organically to the music."

Key to the lighting design were the Martin VDO Sceptron 10 linear LED video fixtures used with no diffuser. They were used to isolate the band members from each other in a series of "blinds" on the floor, arranged in a forced perspective array to mimic the rest of the shape of true design. The result is a "3D" video surface which is mapped as such in d3. A similar array is mounted in the roof making it a 6.5m tall structure in total.

Back lighting consisted of Claypaky Mythos mounted in dollies and some Robe BMFL WashBeams as cannons from the back. There was no front lighting - only side, top, and foot for key light.

EVERYTHING ABOUT ALT-J SAYS UNIQUE

In the roof Jeremy usually had more Mythos, but in Australia MPH supplied BMFL, which he described as perfectly acceptable. The roof system is sort of a mirror of the floor; the design is very symmetric.

Video elements included an upstage horseshoe of a ROE MC-18 screens supplied by Big Picture, and close to 300 Sceptron creating the vertical array of LED strips.

Jeremy ran control with an MA Lighting MA2 whilst d3 and Notch controlled video and pixel mapping, all driven through SockPuppet on the MAs.

"The Australia tour was great," commented Jeremy. "MPH pulled it off, along with our touring crew chief Marc Callaghan of Liteup UK, despite some pretty hefty odds given the season." In summary, everything about alt-J says unique, from their cryptic name to their seamless layering of multi musical genres to their incredible production design.

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HAILED AS ONE OF THE BEST LIVE BANDS IN THE WORLD, MUSE DID NOT DISAPPOINT WITH CRYSTAL CLEAR AUDIO CLARITY

MUSE

Marc Carolan has been Muse's sound engineer for sixteen years, faithfully sticking with an analogue console because quite simply, it's the best option for the band.

"I use a Midas XL4 along with a Midas Pro2 as a sidecar to handle all of my automation," explained Marc. "It's a bit of a Frankenstein rig! The guts of the band – bass, drums, guitars, vocals – all happens on the analogue console whilst the keyboards, drum pads and incidental stuff happen on the Pro2. The reason I stay with the Midas XL4 is that nothing sounds better than it for that type of input. It's not that I'm a technical Luddite, I believe it's about using the correct tool for the job."

When putting together a FOH system for Muse, Marc knows it will be used for at least eighteen months (in this instance it has been three years) and so he certainly makes sure that he is happy with what everything is doing!

>>>>

MARC CAROLAN

>>>> BY CAT STROM / PHOTOS: DAVID YOUDELL

"However, it means we can customize how everything is done within the FOH system because again we know it's going to stay together for a long time," said Marc. "This is a Muse-owned console too which adds another dimension to it."

When discussing mixing for Muse, Marc says that the band are all fantastic musicians so the input that he gets is brilliant, and consistently so.

"That part of my job is made a lot easier but on the flip side of that, there's a lot of complexity within the material," he commented. "In any given song it can go through three or four completely different musical movements so that keeps you very much on your toes. I never get bored doing it night after night because they are such great players and performers – it still feels fresh and never gets dull."

In Australia, JPJ Audio supplied their new d&b GSL PA system for the tour, the first time that Marc had used the system.

"At the beginning of the world tour when we played in the round, we used a mixture of d&b J-Series and V-Series," he said. "So to use the GSL system was very exciting. Of course using something for the first time there's always a sense

>>>>

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of trepidation but with it being a d&b product, I was never really afraid. I had heard it before at a show and so I knew it was going to be good. I was happy to take the chance and I knew Bruce Johnston wouldn't put me in a position where I was going to get shafted!"

Bearing in mind that the d&b J-Series has been developing constantly for over ten years, Marc was surprised that when he first listened to the GSL system, as well as hearing the potential of what it will become, the resolution and detail was incredible.

"I use an analogue console and perversely, the newer technology with the GSL has made the analogue console even more relevant because its superior audio characteristics come even more to the fore with this system," added Marc. "The low end control is incredible and the noise rejection out the back makes it a killer for any outdoor concerts. I really like that it doesn't rely on huge amounts of DSP which, to my ear, colour the sound quite a lot and become fatiguing when things are really super processed.

"Sonically it's a big step forward and what's even more exciting is that it's just at the beginning of what it's going to be able to do."

The Sydney and Melbourne shows saw GSL on the main hangs, J-Series on the side and rear hangs and the new GSL subs on the floor. Marc remarked that because the main GSL speakers are so good at low end in the air, he didn't need to fly any subs.

"We had quite a small deployment of subs on the floor compared to what we would usually expect to have to get that impact," he added. "That's another big plus with this system; it's going to save a lot on points and weight in the roof. As people's collective knowledge of the box develops, I think you're going to see smaller arrays flying."

Microphone selection included Royer 122L on the guitars, Beyerdynamic M88 on bass, and Shure Beta 57A for the Chris's backing vocals. However it is the Neumann KMS 104 and KMS 105 heads on a Sennheiser stick for vocals that are Marc's staple microphone for Matt's vocals.

"I've always used a Neumann KMS 105 with Muse going right back," he revealed. "When we played in the round earlier in the tour we had to look at going wireless for a lot of the show as there were so many multiple mic positions. The reason I use the KMS 105 head in particular is that Matt sometimes sings off axis from the mic but with the KMS 105 it doesn't matter so much as it still sounds good. Some people say there's a lot of spill from that microphone but I find the spill from that microphone is a natural sounding spill."

The band have been using IEM's for fifteen years, currently Sennheiser, with Adam Taylor running monitors on a Midas Pro 9.

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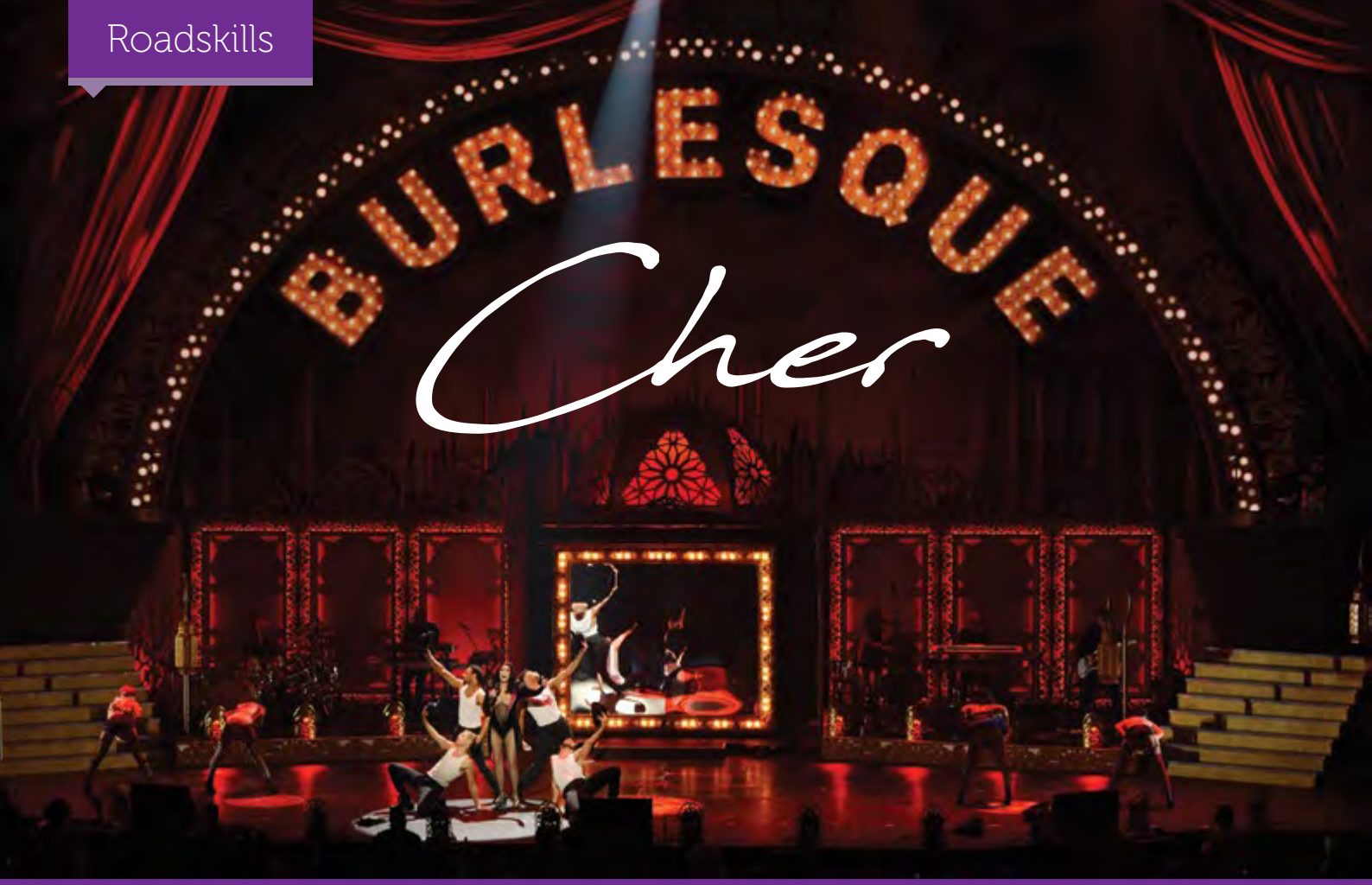

Cher

VERY FEW GRANNIES LOOK, ACT OR MOVE WITH AS MUCH VIM AND VIGOR AS CHER.

BY CAT STROM

A trip to LDI was the perfect excuse to see Cher perform at her Park Theater residency, Monte Carlo Resort and Casino in Las Vegas. The Park Theater is a fairly new venue boasting a huge stage and capacity ranging from 5,200 to 5,600 for the Cher engagement.

Cher opened the show singing Woman's World in a glittery disco-goes-Egyptian gown, complete with a sky-high afro wig, whilst at the same time being lowered onto the stage in a gilt birdcage. This set the tone for 90 minutes of pure over the top campness including the leather hardly-there outfit for If I Could Turn Back Time and culminating in the show's finale of Believe where Cher wore a dazzling bejeweled dress that weighs a whopping 34 kilos.

Unfortunately Cher had eleven full costume changes during the show so just as momentum got going, she'd disappear from stage. Each costume echoed outfits she had worn on stage in the past, in fact overall the show is a rehash of her prior three concert tours. But then it wasn't called Classic Cher for nothing!

However the staging and lighting was all brand new and state of the art. Design house Nimblist, headed by Spike Brant and Justin Collie, created the lighting design with Kille Knobel at the helm of a grandMA2 for each performance.

"The show features what fans would expect including a packed hit-list of singles, glamorous costume changes and archival footage spanning her career," commented Spike. "We met up in Vegas with our strategic partner 4U2C providing the lighting

design for both Vegas and National Harbor gigs. Numerous costume changes and set designs which had to fit in two different venues also provided opportunities for our highly skilled technical team to provide master drawings, technical drawings and renders ensuring nothing was missed."

A dominant feature of the lighting was a fly-in circular ensemble housing seven Portman P1 retro lamps interspersed with Robe Spikies. It was a stunning decorative element as well as a light source.

"No one makes incandescent lights anymore so it's nice to have that flavor in your rig," said Kille. "Everyone is trying to approximate tungsten but there's no real substitute."

The backbone of the lighting rig were Claypaky Scenius Spots and Profiles as well as the house Vari-lite VL3000 Spots, VL3500 Spots and Wash FX.

"The Scenius do so much of the power lifting for the big eye candy looks in the show," added Kille. "However they also do a fair amount of utilitarian work on the dancers too."

Dotted through the rig were Solaris Flares and a few Martin Atomics, Elation ZCL 360i, Robe CycFX 8 and Altman UV Lamps. Fog was provided by MDG theOne Atmospheric Generators as well as the house's DF-50 Hazers.

It was camp old nonsense from a legend who could have been on stage a bit longer but it was well executed and she sure can sing and move well for someone in her seventies.

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Lawfare, lights – action!

Biz Talk
February 2018

By
Julius Grafton

How divorce is far easier than a PARTNERSHIP BREAKDOWN

By Julius Grafton, who thinks he has seen it all.
But then realizes there is a new story around every corner.....

This is a true story of two guys called Bill and Dave. Because Dave is horrifically litigious, and because the CX law team are still on vacation after an exhausting year of defending us and waging vexatious campaigns against our many enemies, we decided to just call these guys Bill and Dave instead of their real names. All resemblance to anyone living in Australia is intentional.

Bill had a successful but small AV production company and won a major in-house gig after duping the customer with a warehouse full of borrowed gear, a cast of 'workers', and a stack of incoming phone calls. All timed for when the customer came to check out his credentials. It looked awesome, because it wasn't.

Armed with the work – and plenty of it - he badly needed more AV equipment and skilled crew, so he partnered up with Dave and a couple of other local guys. They brought their various kit into the operation, and fielded crew. Under Bill's roof, everyone prospered. Bill now owned 51% of the new co, which equates to control. Things settled down OK and good gigs were done, with even better cheques cashed.

Somehow it all unraveled, as it can, when four tech nerds all disagree about what brand of mixer to use on a gig, and about who gets to charge what and when. Unclear understandings about boundaries created the equivalent of an open marriage, where everyone was screwing everyone else, and denying it as they wiped the lipstick off the dipstick.

A split eventuated and Bill removed himself, hoping Dave would respect the shareholder agreement and pay him the quit fee in the formula. It went real nutty, and Bill reluctantly walked into a law firm to assert his rights. A case was convened in a court, and the paperwork started to pile up. Dave loaded the guns, and the matter proceeded.

At this stage Bill owned the building that the company worked from, the company he had left had plenty of money in the bank, and they'd retained the fat in-house contract for another 5 years. It could, and should, have run like a Swiss clock – if Dave played the customer service and

the employee relationship cards right. But of course what Bill thinks is the right way, is the not the way Dave does it. That's why they are headed for corporate divorce court. A place that makes the Family Court look like a kindy.

Bill asserted that the company lawyers were conflicted in taking Dave's case. He eventually had the specific lawyer sanctioned by his accreditation body, but that took some years to happen. Naturally that lawyer made sure that his name can't creep into print. They are good at that.

"In the end, my case file was apparently over 22,000 pages and I've spent just over $419,000 on legal costs over a $360,000 dispute", Bill told me over an Aperol Spritz.

"If I'd known how bad the court system was, I'd have done things differently. In the end, the dispute became more about the legal costs just as much as the original amount."

"In my opinion, if a decent Judge had run the process properly back at the start, it would have been resolved that year."

The end result is that Bill won, and Dave lost. But it took years and years to play out.

"How did I fund the $400,000 legal costs? $100,000 came from the settlement. The balance was over 6 years and was funded by a combination of savings, income from my business and to a lesser extent, the payments that Dave started to make in 2007. I wouldn't have been able to fund any further. If the case was run and adjourned, I would have been in trouble."

We ordered another round of drinks.

"Strangely, this $360,000 dispute probably cost Dave about $1 million once he paid the principal, and my legal costs as well as his. He put in an astonishing effort to screw me over. If he had put as much effort and money into running his business, he would have been well off."

"The company lawyers that hid paperwork from me, assisted with the manipulation of company records, minutes of meetings, "phoenixed" companies and just had a doosey of a chargefest."

"The Law Society dismissed my complaint against them so I appealed in (my state) Appeals Tribunal."

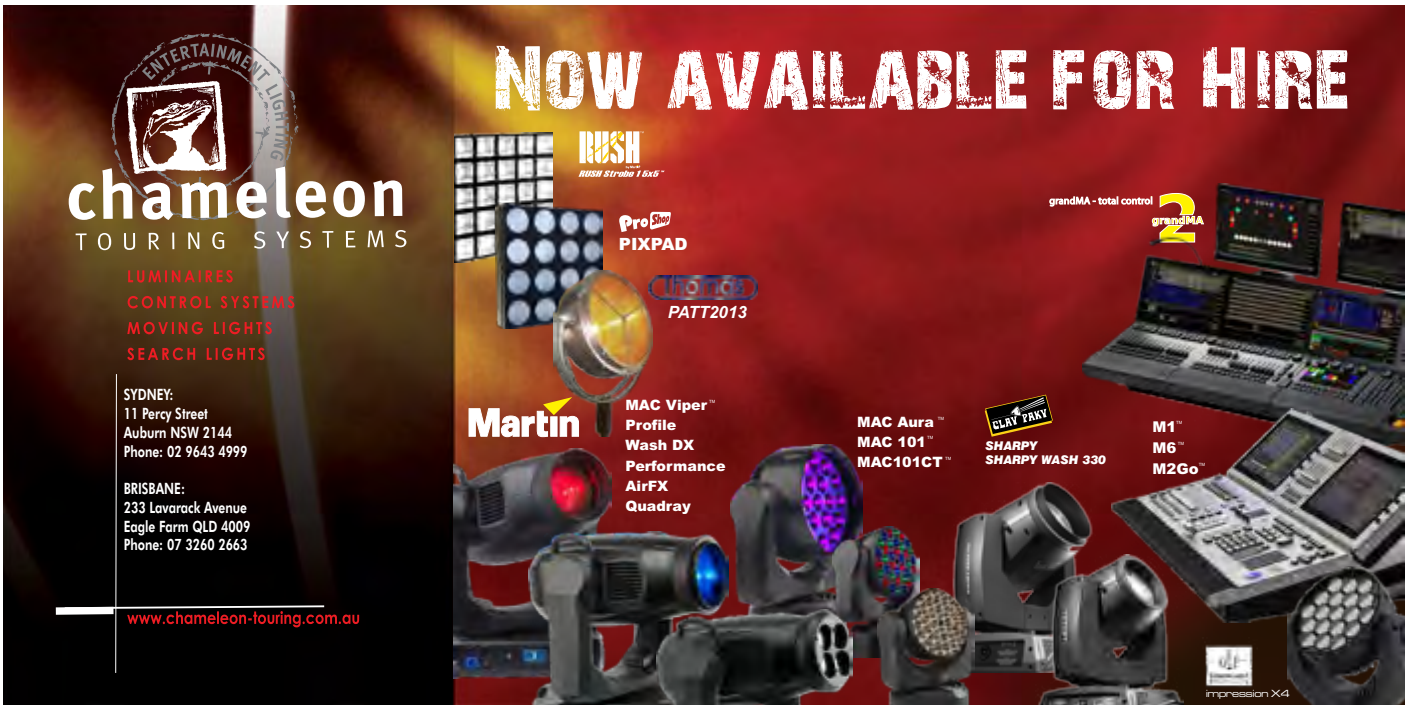
"I represented myself and won the appeal. The Law Society were ordered to prosecute the lawyers. The main offending lawyer had to resign from his position at the Law Society (ironically) and was officially reprimanded and ordered to pay costs. He also was demoted and lost his partnership at the firm."

"He did manage to have his name supressed which really irritated me. My lawyer told me not to worry about it because I had cost him his positions and it would have cost him about $300k for his defence in the tribunal. In his words "Don't worry Bill, he thinks of you regularly".

Bill switched to the hard stuff, and I finished off my Dom Benedictine.

It was dark outside, and a table near the door roared with laughter. Three guys in suits were sitting with two executive suited ladies of a respectable age. The mirth had been building in volume for some time.

The ladies were reading transcripts from some divorce cases in the Family Court. The table was from a large law firm over the road.



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The Confirmed Convention Program along with other important Information

In Completion of a Productive Year and the Launch for a Massive 2018

It's a sign of abundant activity and progress that we struggled to find the most relevant content for the first ACETA editorial in 2018. An overview of 2017 was planned; however, it was clear that the confirmed inaugural convention program, needed to be presented here and now, to assist individuals and organisations make the necessary bookings before time and opportunity elapses. In committing to this inaugural watershed event, wisdom dictates that those who pre-prepare and set outcome goals for themselves and their organisations will realise optimum benefit, as you will note an abundance of high quality events across an extremely wide variety of highly relevant subject matter.

But first, a couple of topical news briefs. 1. Self-regulation of product compliance deliberations is currently underway with the ACMA. In a positive outcome, ACETA members would be exempt from the RCM legislation and subject to our own standard now under development. Self-regulation will deliver conservation of financial and other resources, reduced confusion, a more compliant culture, assistance to become compliant in a co-operative non-punitive environment, enhanced credibility and an industry taking control of its development and future. Please note; non-ACETA members would be subject to the RCM legislation as regulated and administered by the ACMA. 2. Those members who display their ACETA membership/ associate membership on their corporate documents and forums, including web site, social media, letterheads, price lists and business cards etc., report increased and positive responses. Some are now including their membership and the ACETA logo in their tenders and quotes to positive effect. A number, report productive outcomes when negotiating new agencies, some have even been approached by potential supply partners based on the ACETA web site listing. Therefore, it is a wasted opportunity if a member/ associate member doesn't use an increasingly important marketing aid and business development tool to their advantage. For those who haven't realised the benefit or have forgotten, please contact ACETA HQ for artwork, it is free and part of the benefits. 3. All members and associate members will soon receive a unique ACETA mark (consisting of letters and numbers) for categorising and identification purposes in meeting the needs of self-regulation and those of funding bodies. Now to the inaugural convention program:

INAUGURAL CONVENTION PROGRAM

FRIDAY 4th MAY 2018

9.00am	Golf day tee-off at the championship Jubilee Course, Wangaratta-an 18-hole unisex event with all welcome, bring your clubs, motorised carts provided.
4.00pm	The important registration and induction plenary for delegates, presenters and partners, in the Gateway Hotel Ballroom Wangaratta.
6.00pm	Civic Reception hosted by the Mayor and City of Wangaratta. Food and beverages provided at the Wangaratta Performing Arts Centre, a five-minute walk from the Gateway Hotel. All delegates, presenters and partners are welcome and encouraged to join with the City Officials.

SATURDAY 5th MAY 2018

The number represents the event number on the booking form, this is proceeded by an S signifying a Seminar or W signifying a Workshop. The title of the event is displayed, followed by the seminar presenter or workshop facilitator and their organisation.

	BOGONG ROOM	OVENS ROOM
9.30am	1S. Hands on Web Marketing, Social Media and more. Jason Allen of VCS Creative Services.	2S. The Economy Today and a Glimpse into the Future. Bernard Stapleton SV Strategic Solutions.
10.20am Morning Tea		
10.30am	3S. PRODUCT COMPLIANCE AND LEGISLATIVE REFORM. Australian Communication and Media Authority.	4W. Strategic Planning - A 5 Step Process to Build a Better Business. David Bell.
11.30am	5S. Facilitating Change - Amalgamation / Acquistion / Resource Sharing. Sheree Cross SV Strategic Solutions.	6W. Strategic Planning - A 5 Step Process to Build a Better Business. David Bell.
12.20pm Lunch		
1.10pm	7S. Foreign Currency Trade - the inside story. Tony Boyadjian Compass Global Markets.	8S. Leadership Mentoring for a New Landscape. Frank Hinton ACETA.
2.10pm	9S. The Digital Dividend - Plans Moving Forward. Australian Communication and Media Authority.	10S. Leadership Mentoring for a New Landscape. Frank Hinton ACETA.
3.10pm	11S. Support in Penetrating Export Markets along with Assisted Technology Development. Tim Carrol Austrade & AustIndustry.	12S. Technology Innovation & Opportunity - Spatial Sound Test and Measurement. Glenn Dickins Dolby Laboratories.

4.10pm The ACETA Annual General Meeting

7.00pm The Inaugural ACETA Gala Dinner - The Gateway Hotel Ballroom

SUNDAY 6th MAY 2018

9.30am	13S. Hiring Staff - Exciting or Daunting? David Bell.	14S. The future of Media and how it Will Impact Your Business. Jason Allen VCS Creative Services.
10.30am	15W. Manufacturers Workshop. Gelnn Dickins Dolby Laboratories.	16S. Entertainment Industry Work Health and Safety. Roderick van Gelder Stage Safety.
11.30am	17W. Manufacturer's Representives (Distributor) Workshop. David Bell	18W. Service Providers Workshop. Roderick van Gelder Stage Safety.
12.20pm Lunch		
1.10pm	19S. Corporate Re-Location to Lower Cost Regions. The City of Wangaratta.	20W. Service Providers Workshop. Accreditation/Certification and the SCETA Card? Roderick van Gelder Stage Safety.

2.10pm Concluding Plenary to Review, Establish New Inititiatives, Agree and Plan for Future Conventions

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FACT: Most Australian tech crew and roadies have attempted or considered suicide[1]!

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[1]Passion, Pride, Pitfalls Dec 2014

DUNCAN Fry

Honey I Shrunk it

Really, I did...

With Duncan Fry on holiday, we reprise a piece from CX Magazine, February 2013 where he ponders a smaller PA system...

©2013 Duncan Fry

Since it's the start of a new year, I've made a new year's resolution to shrink the size of my current system to still keep the same output level but in a more compact and loading-friendly package.

All this came to me while I lugged the seemingly endless amount of equipment out of the most recent gig at around 1.30 am the other night. As I pushed, dragged and rolled stuff out to the trailer I started to drift away, thinking "What would be the smallest possible 'real' PA you could put together?"

By real, I mean one that can handle a complete band, everything miked up or DI'd, three or four singers, and fit in the footprint of a standard 6' x 4' two wheel trailer. The minimum amount of equipment that can do the gig, and get in and out in as fast as possible, with the least amount of trips back and forth from stage to trailer.

Maximum efficiency, minimum size, at a cost that would still allow me to make a profit on each gig, amortized over say a six month period.

Surely that's not too much to ask in these high-tech days?

Like all of us I'm not getting any younger, although not yet up to the stage of Bob Dylan (aka. Mr Cheerful) who sang 'He not busy being born is busy dying' (a great line from 'It's Alright Mama I'm Only Bleeding' on the Bringing It All Back Home album) so it also has to be easily loaded in or out by one person (or two if there's a flight of stairs involved).

And as far as I'm concerned, any more than one flight of stairs and someone else is going to get the gig! We've had amplified music for just about a hundred years now; it's about time that venues and reception centres got the message on what's involved.

So here's my shortlist of equipment that could be shrunk, combined, lightened, or just got rid of altogether:

SPEAKERS: Wood or plastic? Onboard or external amplifiers? These are the vexing questions every small operator has to answer, and they are not easy ones. Well-braced wood boxes sound the best but are heavier; plastic ones are lighter and cheaper but to many people's ears don't sound as good. However, since it's a given that we'll be having subs for everything under 200 Hz, we won't be trying to push 40 Hz though these little boxes, so a couple of good sounding 12" and horn plastic ones should do the

trick. Ones with onboard lightweight digital amplifier; if possible, so there will be no hernia-provoking amp rack to lug around.

SUBS: And speaking of hernia-provokers, subs can often be the largest/heaviest thing in the trailer, so as long as we accept that, we can work with it. We need subs because every PA system gets a paradigm shift in quality with some good sounding subs, rather than trying to squeeze some low frequencies out of boxes that were never designed for reproducing them. If they've got the amplifier inside, well that's great. But if they haven't, why not strap an amp onto the top of one or screw a little 2RU rack onto the top of one so they can travel around together?

Subs are too heavy to carry, so they need to have wheels or wheel dollies, so let's get as much wheeled into the gig in one go as possible. At the moment I can fit both subs and an amp on a wheel dolly, so I don't see much room for improvement there. But I am planning to put a two channel amp inside one of them, and a tethered linking cable inside the other.

MIXER: Digital or Analog? Everyone mixing can come to grips with any analog desk. But digital mixers are a runaway train that is rattling into the station at breakneck speed. Can't stop it so we might as well embrace it. Since the mixer is mainly operated by me it's worthwhile learning a common one inside out. Something like one of the new Yamahas, or the PreSonus, or Julius' favourite digital mixer, the new Behringer X32. This one looks like being the game-changer for digital. I suspect that in the future its launch will be seen as being the tipping point for the change from analog to digital.

The trickle-down effect, with pricing diving from astronomical down to economical, means that digital mixers, with masses of onboard EQ, effects, dynamics control, and more, will suddenly be everywhere. They will lessen the amount of outboard gear I'll need, if nothing else! If only they all worked the same. Sigh.

AMPLIFIERS: Unless you're heavily committed to two channel amps, why not get a high-powered four channel one? That'll give you Left and Right boxes and two subs, in one amp. Or if your Front of House boxes are self powered, the same amp will give you enough power to drive four bitchin' monitor sends! And four separate monitor sends are probably more than enough to keep track of through the night.

MONITORS: I've already got some very small monitors that have kept singers happy for a couple of years now, with no complaints at all. All they do is vocals, with maybe a little bit of instruments mixed in if necessary. Any guitarist who rolls up with a Line 6 Pod or similar gadget instead of an amplifier deserves what he gets, which in this case will be sharing a monitor send with the drummer! And, if I can get a good price on a couple more powered 12" and horn boxes, that will mean they can double as extra FOH if needed for big rooms, or as more monitors for bigger bands.

MULTICORE: I've got one, but usually it only comes out for corporate gigs that are happy to pay the extra whack that I charge for it. For the sort of function I normally work at, side of stage is fine. Paranoid function managers freak out enough when you wheel in the subs, let alone take up space in their immaculately prepared ballroom with a mixer and long black cable that everyone might trip over!

But hang on a minute - many digital mixers can be remotely controlled with an iPad and wifi. Suddenly I can sit on a chair anywhere in the room and control a mixer that's parked at the side of the stage. No multicore, digital or analog, needed ... as long as my iPad battery doesn't go flat! The first time I saw it done I was very impressed - even more so than when I sent and received a fax from my laptop twenty five years ago!

LIGHTING: Not really part of sound, but having the house lights on all night just doesn't cut it for atmosphere! It's an essential item for making the production look good, and I can charge for it accordingly. Longtime readers will be pleased to know that my semi-legendary Par 43 lights (made from Nescafe cans) have been pensioned off and replaced by four Par 64 LED cans, with built-in DMX control. All plugged together, they run on a medium chase all night. Sweeet! No lighting trees, to save space; the subs have poles that run to the top boxes, which have T-bars on top of them and two lights clamped to each of them.

WHEELS: It goes without saying that everything should have wheels or a wheel dolly. We're only born with one back and need to look after it. But a three wheel 'walking up stairs' trolley is worth every cent it costs, and will soon pay for itself with all the money you charge for the 'extra loader' you had to hire (ho ho) to get up the stairs!

If anyone has their own ideas for their own Amazing Affordable Shrinking System, then let me know at dunkworld@gmail.com

TIMES HAVE CHANGED

Reading this, Julius is amazed how just five years have brought quantum steps. Starting with the higher powered, lighter and cheaper self powered speaker systems we've tested in Gearbox recently.

DSP science is now so good that lesser components are tweaked exactly and the sum of the parts makes a much nicer system. We're seeing speaker packages at well under 2 grand delivering significantly more output, sounding much sweeter, and weighing at least a third less than five years ago. And that extends to the subs, some of which are easily hauled by one average musician.

At the mixer, we're using iPad and even iPhones with many of the new generation rack mixer that has nothing other than inputs and outputs on board. These are costing UNDER $1,000!

Multicore? Pfft, gone.

Effects? Inside the rack mixer, nothing external required!

The one constant over five years is the microphone where oldies are goodies, and where wireless is now operating on new frequencies but still fairly similar in performance.

Plus in-ear prices have come down too. A decent small PA system that caters to a hundred people will fit in an SUV and cost well under 10 grand. That's progress.

- Julius

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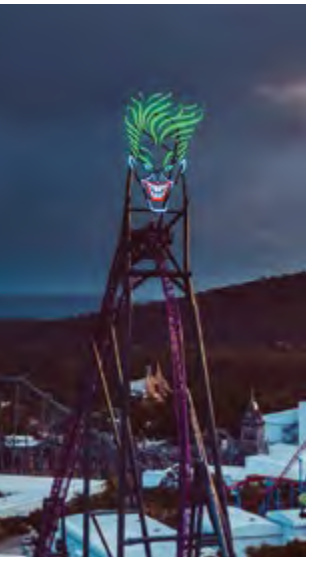

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