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News

- / Elite Event Technology at Spilt Milk
- / Better Days in Bourke
- / Amber Technology & LEA Professional
- / Filament Eleven 11 invests in Astera
- / Wheels of Light
- / Counterfeiters caught thanks to L-Acoustics
- / Vectorwork's New Enhancements

Regulars

- / Andy Stewart's Listen Here
- / Jenny Barrett in NZ
- / John O'Brien's Backstage
- / Brian Coleman: The Gaffa Tapes

Road Test

- / Pioneer XDJ-RX3

THE RELIABLE ISSUE

- / D&B AT COOPERS STADIUM
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CONTENTS

News

Elite Event Technology for Spilt Milk	4
Better Days in Bourke	6
Amber Technology to distribute LEA Professional, acquire Convoy	10
Filament Eleven 11 Gets Creative with Astera	12
Wheels of Light: Optikinetics and a lighting revolution	16
L-Acoustics Obtains Prison Sentences for Counterfeiters	18
Vectorworks Announces New Cloud and Mobile Enhancements	19

New Gear

20

Features

Carmen Re-Imagined <i>by Jenny Barrett</i>	30
Jands – Setting the Stage for 53 Years – Centrefold!	37
Robe Dreams with Crowded House	39
Rüfüs Du Sol's 2022 Homecoming <i>by Jason Allen</i>	41
Ed Sheeran's +-÷x Tour is rolling into NZ and AU! <i>by Jason Allen</i>	44

The Reliable Issue

Kicking goals at Coopers Stadium with d&b <i>by Artemis Horton</i>	46
Ivan Ordenes: Immersive Audio and the KLANG IEM system	50
Reliable Everything - Start with yourself! <i>by Julius Grafton</i>	54
Why spending more initially can cost you less in the long run... <i>by ENTTEC's VJ Suriya</i>	55
G20 Leaders' Summit: Congress delivers in Bali	58

Regulars

Listen Here: Portrait of the artist as a Robot <i>by Andy Stewart</i>	24
New Year's Eve celebrations mark a return to business as usual <i>by Jenny Barrett</i>	27
What can I rely on? Who can I rely on? <i>by John O'Brien</i>	68
The Gaffa Tapes: The Slim Dusty tapes <i>by Brian Coleman</i>	69

Tech Talk

Women in AV <i>by Benjamin Powell, CEO of Bettercast</i>	64
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Road Test

Pioneer XDJ-RX3 <i>by Jimmy Den-Ouden</i>	66
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Elite Event Technology for Spilt Milk



Elite Event Technology provided a full AV production for 2022's Spilt Milk festival, held in Canberra on 26 November and in Ballarat on 3 December.

"Five stages, two massive days, but it was great to have Spilt Milk back", says Darren Russell, MD of EET. The fastest selling festival in Australia has returned after a Covid break, with a great line up of awesome Australian headliners, including DJ Fisher, Flume, Genesis Owusu, The Wombats and many more.

The two major stages – the Angrove Stage and the Basquait Stage – featured large VuePix Infilled ER4 displays. The twelve metre long and six metre high LED screen has been set up as a centrepiece of the Angrove Stage, featuring VuePix ER4 panels.

The Basquait stage used a 7m long x 4m tall VuePix screen in the middle, with two iMAG screens (5.5m wide x 4m tall) set up on the sides, all configured from the VuePix Infilled ER4 outdoor panels. The screens were using the new NovaStar Pro UHD Junior Processors for the feed and content optimisation, with ChamSys data distribution.

"Acme LED Stage Blinders dominated all five stages," comments Darren. "The Basquait Stage featured the Linear Acme TourBars, and our first bunch of Acme LYRAs was used exclusively in Fisher's floor package, and they looked unreal!"

The other two activation stages featured a complete Acme lighting rig, including Acme CM-300 Zoom LED Washes, XA-100 Rayzor Hybrid Moving Heads, Stage PAR 400 Zoom F\ fixtures and TourPixel Bars. All was controlled by ChamSys MQ50 Lighting Consoles.

"I would like to thank my team again for putting in all their hard work. They have once again delivered a superb production for these high-profile gigs," concludes Darren.

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Better Days in Bourke

"All we need to see is better days... For all of us to cope in better ways"



"This is our third visit. It's a great privilege to be here and a responsibility we don't take lightly," said Nakama Arts Director Chris Hamer-Smith at the official opening of the music studio at the Social and Emotional Wellbeing Centre (SEWB) on Sturt Street, Bourke.

Bourke, a regional town in NSW on the traditional lands of the Ngemba people, has a population of around 2,000 people, including a large First Nations component. Its rich Indigenous history, unique landscape and more recent reputation as a rural centre,

paddle steamer port on the Darling, and outback frontier town make it a special place, but life in Bourke is not without its challenges.

Services have not always been tailored to meet community needs, schools have struggled to engage kids, and kids in turn have lacked the opportunity to 'be what they can see'.

When the Centre of Excellence & Wellbeing invited Hamer-Smith to run an Art of Rap music workshop as part of the Mayi festival in May 2022 he was delighted, but the invitation ignited a vision for a more long-term program to upskill kids over months and even years, rather than just in a one-off session. Importantly, this should be a project that the young people of Bourke could own and lead.

With the enthusiastic support of well-known First Nations rapper Kobie Dee (who had

performed in Bourke previously and was already a very recognised figure) and talented mentor, teacher and freestyler P.Smurf (aka Lorenz Prichard), Hamer-Smith took his vision and ran with it.

The trio set off for their first Art of Rap session in late June not really knowing what to expect. They flew to Cobar, the nearest commercial airport, and hired a car for the 200km drive onward to Bourke, where they set up a permanent recording and production studio consisting of a bunch of Audio-Technica microphones and headphones, an Apple Mac mini, MIDI keyboard, Allen & Heath ZEDi 10 mixer, and studio monitors in a dedicated music room at the back of the Centre.

Hamer-Smith's concerns that the kids might not come to that first session were quickly allayed, due in no small part to the fact that the

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word had spread that Kobie Dee, a Gomeroi man and a strong role model, was in town. Over a couple of days, the team engaged with forty or more kids in a series of music workshops, and in true 'if we build it, they will come' style, Hamer-Smith asked around if anyone local was willing to help with ongoing on-line sessions.

Three people came forward: Craig Knight who said he could help with supervision, and young singer-songwriters Stephen Wilson and Lorraine Dutton. Wilson and Dutton offered to help with recording, mentoring, and running workshops with the younger boys and girls respectively. So, the weekly 'Open Studio Sessions' began with Stephen and Lorraine in the Bourke studio, Hamer-Smith available via video link and Craig overseeing.

Hamer-Smith embarked on the Bourke project as part of his role at audio distributor Technical Audio Group (TAG) where he has been tasked with taking the company's TAG Cares program to the next level. The program was renamed Nakama Arts and formalised with a charter to 'assist young creatives who might otherwise not have opportunity.' "My employment brief was basically, 'Do whatever you want, spend whatever you need, you have our total support,'" recalled Hamer-Smith.

Since starting with TAG he already had plenty of runs on the board, including working in music programs with kids with disabilities, mental health issues and disadvantage, and the development of the music studio at the Glebe Youth Service in Sydney, but the Bourke project has been the most challenging mainly because of the remoteness.

"We visited again in August," continued Hamer-Smith. "Kobie was away touring in Europe, so it was just Lorenz and me. We had a great session with a bunch of the kids. At the beginning Lorenz had asked them 'What do you guys want to rap about?' They replied with some thoughts focussed on crime and gang-related topics. Lorenz said, 'Ok cool, that might be what you're experiencing in your life but why don't we focus on what we want more of in our lives and what we want to see change.' Over the next two or so hours they brainstormed ideas, collaborated on lyrics and recorded a song called Better Days. The song has a repeating bridge; 'All we need to see is better days...For all of us to cope in better ways,' and frankly that's what this is all about, helping kids find pathways to better things, and role models to help them see that these things are possible."

Over the weekly Open Studio Sessions that followed there was plenty of workshop engagement but perhaps the big story was Stephen and Lorraine developing studio recording skills themselves and then writing, performing, and producing their own songs. Hamer-Smith helped them all through the process then mixed, mastered, and released the songs via Nakama Arts own imprint NKA Recordings.

"It's been an amazing experience seeing these two young people develop their very special and quite different musical talents," said Hamer-Smith. "They are becoming real leaders in their community showing what's possible if you harness your talent and work at it. We're so proud of them, in fact, the whole town of Bourke is."

By the time the Nakama Arts team visited again in November it seemed like every kid in town wanted to talk or hang out with Kobie and Lorenz! The back-to-back Art of Rap sessions were followed by an impromptu performance.

The visit had started with a Welcome to Country and official opening of the music studio with a gathering of 100 or so including the CEO of Bourke Aboriginal Health Service, the pastor of the Full Gospel Family Fellowship church and the headmaster of Bourke High School.

"There was quite a buy-in," said Hamer-Smith. "The underlying message was 'We've had too many initiatives and programs and promises that have come and gone. What we're seeing from you guys is something the young folk want and can really relate to. No pressure but don't let them down!'"





For Nakama Arts that's a huge compliment and equally a huge responsibility but something the team could only dream of just six months earlier. As the weekly Open Studio Sessions continue, there are discussions in train about how to expand the project to make the studio as useful as possible for as many as possible. Bourke High School is keen to see studio sessions on the school music curriculum, and the challenge of engaging young people who've finished school with

evening recording and mentoring sessions is firmly on the agenda. Nakama Arts and TAG are also gauging community interest in areas other than Rap, like live music mixing, video production and content creation.

"My role is in many ways to facilitate the project and keep it running," said Hamer-Smith. "The real stars are Kobie and Lorenz and I can't speak too highly of them. Their commitment to this community and their desire to change

lives is something incredibly special and none of what's happened this year would have been possible without them. And of course, without Stephen and Lorraine, and the young people of Bourke, whose passion and talent shine through."

For the Nakama Arts team, walking with some of Bourke's young people on their pathway to 'Better Days' is a privilege. The journey has only just begun.

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Amber Technology to distribute LEA Professional, acquire Convoy

LEA Professional has appointed Amber Technology to distribute its products in Australia.

Founded in 2019, LEA Professional is driven by the passion and expertise of amplifier technology experts that represent over 200 years of shared experience. The company, based in the cradle of amplifier innovation, South Bend, Indiana, has quickly risen to the forefront of the industry. Its Connect Series amplifiers, including Network Connect and Dante Connect, embody unique features that simplify the lives of professional AV integrators in compact and light-weight products.

Peter Amos, managing director, Amber Technology, is enthusiastic about the new partnership.

"We have watched with interest the progress of LEA Professional since the company was established. We have been impressed by the quality and innovation of the products, and by the team's commitment to delivering a genuinely differentiated and useful suite of services to make the integrator's life easier. We are delighted that LEA Professional has chosen to partner with Amber Technology to support their growth in the Australian market," Peter Amos said.

Scott Robbins, vice president of global sales, LEA Professional, is also excited about the future.

"Amber Technology has a strong presence in both the commercial and residential AV installation markets – both of which are important for LEA Professional. We are confident that our ground-breaking products and cloud services will be attractive to integrators in Australia, and that Amber Technology is in a great position to build our brand in both the commercial and residential markets," Scott Robbins said.

Amber continues to grow with the announcement that they will acquire the assets of Convoy, and merge the operations of Convoy's business into Amber Technology's business. Convoy was established in 1965 as a leading importer, distributor and marketer of a wide range of high-fidelity loudspeakers, amplifiers, media players, headphones, speakers for personal audio devices, advanced home audio components and audio-video digital accessories.

Under the agreement between Amber Technology and Convoy, key Convoy staff will be offered the opportunity to join the Amber Technology team and significant brands distributed by Convoy will become part of the Amber Technology portfolio.

"We are very pleased to be able to merge the Convoy business into Amber Technology," commented Peter Amos. "The brands distributed by Convoy will complement our existing residential custom AV installation business and allow us to strengthen our position in the specialist AV retail market. We are confident that we will deliver enhanced results for our Amber Technology brand partners as we exploit synergies and bundling opportunities afforded by the coming of the Convoy brands and growth for the Convoy brand partners through our broader and deeper reach into the market."



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'Scenes from a Yellow Peril' Photo credit: Andi Crown.

FILAMENT ELEVEN 11 GETS CREATIVE WITH ASTERA

Auckland, Aotearoa New Zealand based design studio Filament Eleven 11 is a creative tour de force combining the talents and imagination of lighting and visual artists Rachel Marlow and Brad Gledhill. Working across multiple genres – theatre, opera, dance, rock 'n' roll' live events, installation, and light art – and embracing a mix of media and light forms, the company is known for its innovative and fun approach to enhancing storytelling with this unique form of expression.

Filament Eleven 11 also owns some specialist lighting and control kit, and this year invested in Astera wireless LED products, AX3

LightDrops and NYX Bulbs, which have been busy on several projects.

Three AX3 LightDrop kits (24 in total) and 30 NYX Bulbs were purchased from Astera's New Zealand distributor ULA Group in the last year for use as "ultimately useful lighting tools" commented Rachel, and since then, she and Brad have both enjoyed using them creatively and inventively in multiple contexts on a variety of productions.

Both were already familiar with the Astera brand and its products, they had used them on a few shows including AX3s and AX1 Pixel Tubes as part of Rachel's lighting scheme for 'A Stab in The Dark' by Carl Bland, staged at the Q Theatre in Auckland, a production that was also livestreamed.

With puppets as well as live actors onstage and the puppets needing extremely careful lighting to retain all the magic, drama, and complexity of the puppeteering, the AX1s and AX3s were a great solution that could be moved quickly and easily around the stage without any cabling worries, helping to disguise all the puppeteer's actions.

'A Stab in the Dark' was also streamed adding an extra layer of visual challenges to an already intricate lighting process, so the Asteras were a great all-round asset.

Rachel explains that before making the commitment to purchase the fixtures, they had heard much general chatter out in the community about Astera and the products, so looked at what was available and thought these would be perfect for the many moments when it was necessary to get a fully DMX-controllable lightsource into unusual, different, or sometimes near impossible positions!

"We immediately saw a host of possibilities and appreciated things like the high-quality light output that drove the initial purchase," noted Rachel, adding that they wanted to go LED as much as is possible to boost sustainability. The conclusion was that it would be a great all-round move to have some Asteras available for their various works which are known for their ingenuity and impact.

The NYX Bulbs were purchased after a demo from ULA Group's technical sales specialist Sean Rosig, who encouraged them to have a



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'Scenes from a Yellow Peril' Photo credit: Andi Crown.

look. "As soon as we saw them in action and had a play around, we knew we needed these and that they would be great fun and very useful!" commented Rachel.

The first show for Filament Eleven 11's own NYX bulbs was 'Scenes from a Yellow Peril' a poetry show staged at Auckland's Waterfront Theatre, where they were used in a long line upstage for a reveal.

In the same production, the AX3s were used to light the band, the cast, and a large costume set piece which was part of the design

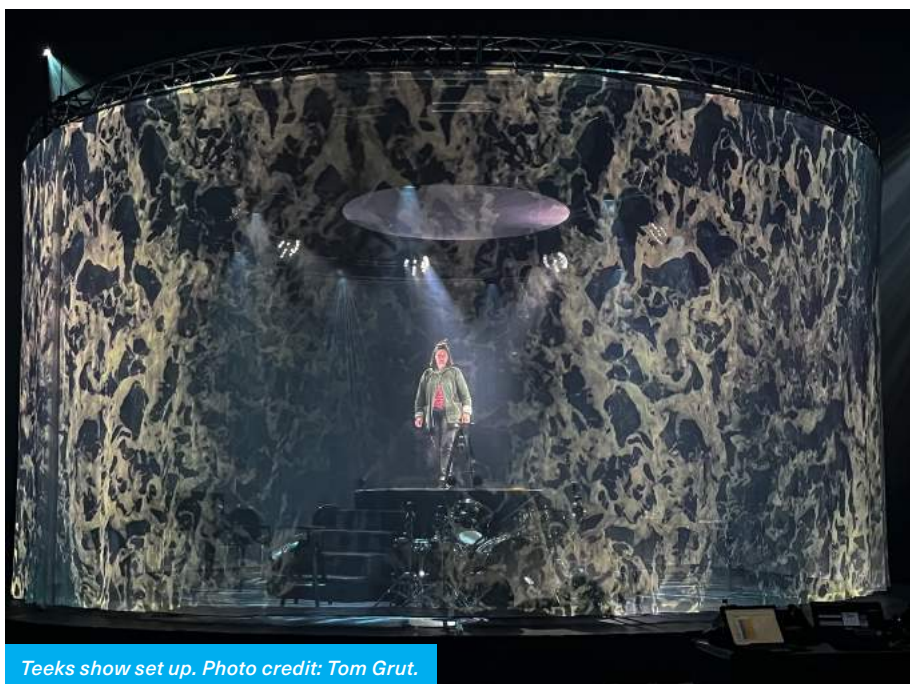
dramaturgy for the penultimate poem of the performance, where the entire band were struck live by the cast and musicians! The wireless AX3s were a perfect light to be quickly removed and easily reset each night!

Rachel first incorporated NYX Bulbs into 'The Writer' by swapping out the Q Theatre's backstage 'blue' system for the NYX's, creating a dynamic colour changing and flashing DMX controllable format, the effects of which could be woven into the production's narrative. The powerful performance piece addresses the contemporary issues of creativity, gender

inequalities and power in a theatrical context.

In the same production, NYX bulbs worked brilliantly in domestic house settings for the living room and kitchen scenes, setting the mood as they could be turned on and off, colour changed and dimmed. Some of them were rigged on small Wahlberg winches which flew in and out from the ceiling.

Both the Filament Eleven 11 NYX Bulbs and AX3s were used during the 2022 Elemental AKL Festival in downtown Auckland to illuminate all the iconic Town Hall venue's



Teeks show set up. Photo credit: Tom Grut.



Elemental Festival / 'Stab in the Dark'.
Photo credit: Filament Eleven 11



'Scenes from a Yellow Peril' Photo credit: Andi Crown.

foyers and public areas flooding the spaces with colour, kinetic patterning and vibrance! The NYX bulbs have also been used as collapsible, flying standard lamps and in many other scenarios.

"They are just so versatile," declared Rachel, "The AX3s and NYX Bulbs help solve constant design issues and challenges, and being battery powered and wireless, they can be used absolutely anywhere!"

They have used them for footlights and as small blinders, even as truss warmers, as well

as for general "trick of the light" applications.

Bradley recently used AX3s on an in-the-round show for soul artist Teeks at the Spark Arena; he and his band were on a revolve, so AX3s were again a perfect neat and wireless solution with no cable runs.

Sean Rosig commented, "It's always a pleasure to work with Brad and Rachel, especially watching their faces light up with excitement when receiving their new fixtures! I specifically appreciate how they have explored the versatility of these lighting fixtures and used

them creatively to enhance their lighting designs."

When not in use on their own shows, there's been constant demand for the luminaires as dry hire items, all adding to the value of purchasing, notes Rachel.

"We are always finding new and different ways of using them and discovering design opportunities through having these products to hand! We have only just got started on this and we would absolutely not be without them now!" she concluded.

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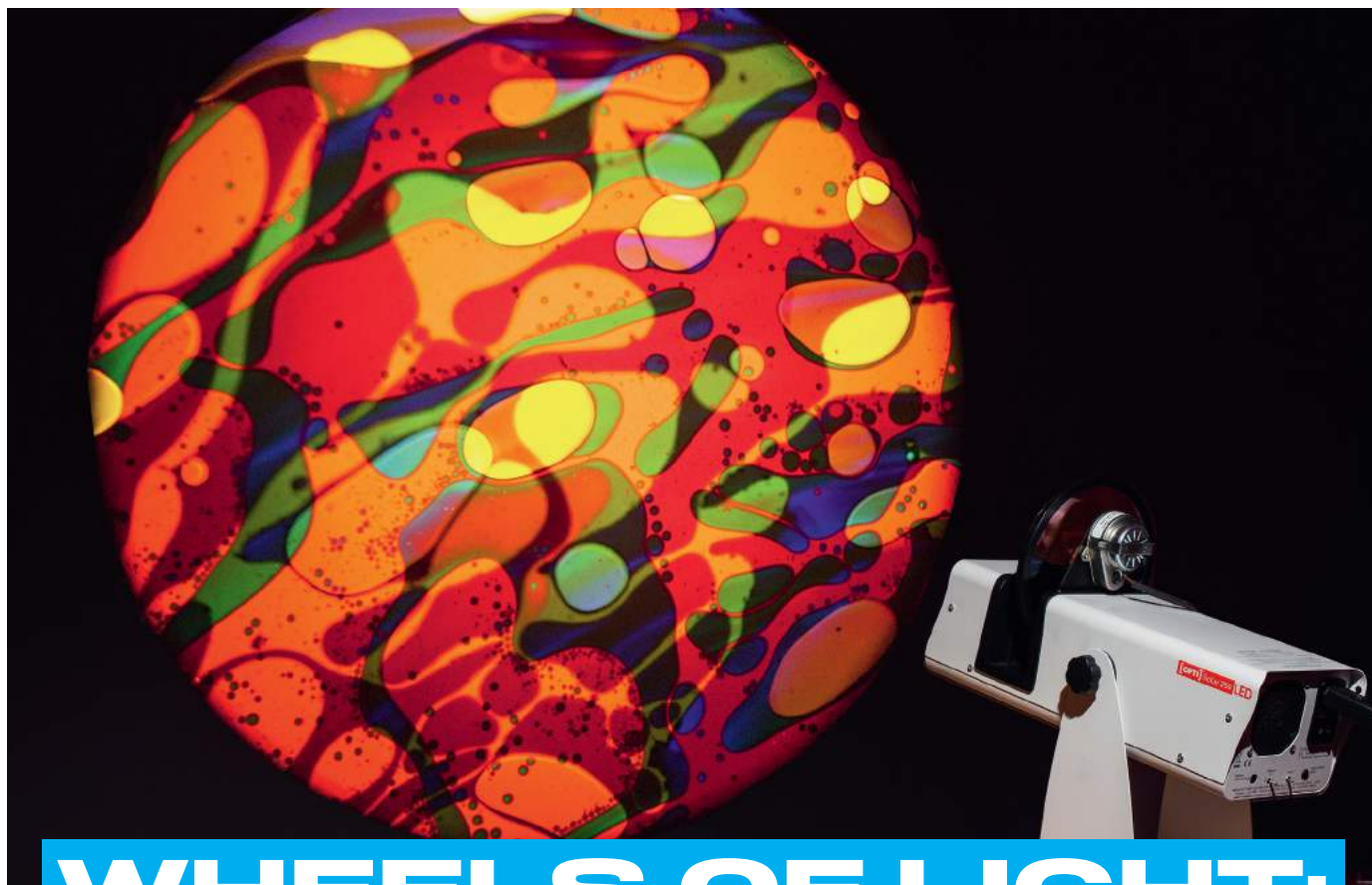
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WHEELS OF LIGHT:

Optikinetics and a lighting revolution

Kevin Foakes' *Wheels of Light: Designs for British Light Shows 1970-1990*, shines a powerful light on a remarkable period of entertainment history.

The book exists because of (and treats as its central hub) Optikinetics, the UK manufacturer formed by Neil Rice and Phil Brunner in 1970 and, under the ownership of Rob Stichter, is still going strong to this day. 'Opti' (as it has always been known) was not the first, or by any means the only, creator and purveyor of the projection effects which characterised the era. But they were a central player: they designed and built the iconic Solar 250 projector, and

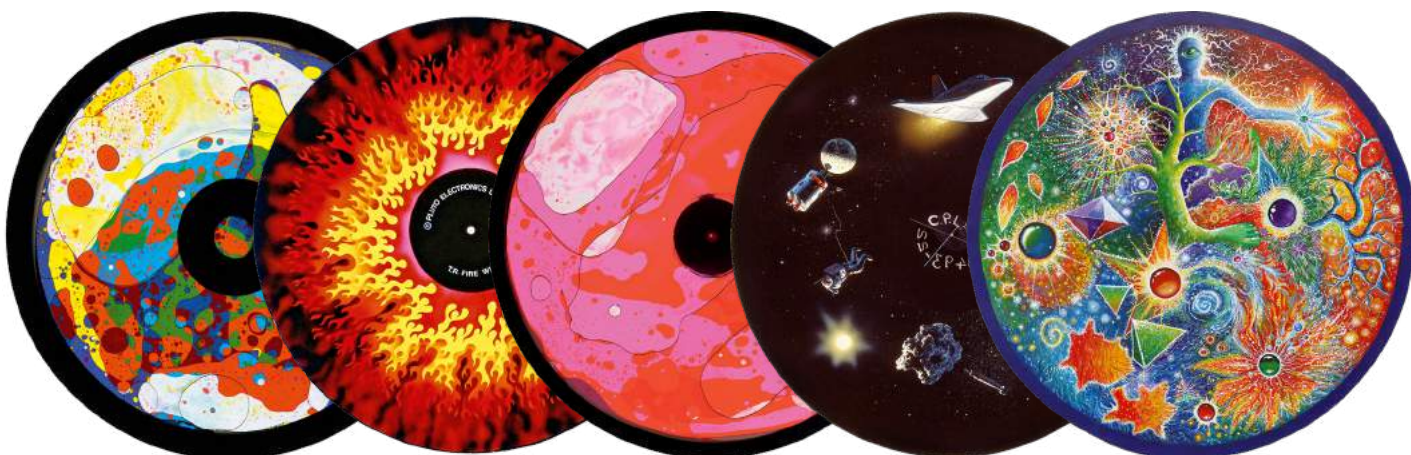
they are the only company influencing that powerfully creative time to have survived through to the present day.

The author's research, triggered by a modern-day DJ's encounter with a Solar 250 projector (yes, they still make them) and Luton-based Optikinetics, has resulted in a book which is nothing less than a jewel of entertainment lighting history.

Always engaging, and with an obviously warm regard for his subject, Foakes takes the reader back to the early days of effect lighting; to bubbling oils, to Aldis projectors and the extraordinary, hand-painted effect wheels that would today grace the walls of any art collection.

Although it predominantly focuses on the artworks themselves, the book also provides a fascinating overview of those who drove this cultural phenomenon. Those early days of effects projection, from the early 1960s and through the 70s and 80s, have been a source of fascination and inspiration for light artists and lighting designers ever since. From strobing, monochrome op-art at the Fillmore, to The Pink Floyd bathed in swirling, coloured liquid projections at the UFO Club, they were innovations that have cast many long and wonderful shadows, through disco, punk, rave and beyond.

We encounter light artists such as Mark Boyle and Joan Hills, who provided light shows for The Soft Machine and Jimi Hendrix; Mike





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Leonard and Peter Wynne Willson for The Pink Floyd; Colin Fulcher (a.k.a. 'Barney Bubbles') who would later work as a graphic designer for Elvis Costello and Ian Dury; Jack Bracelin and his Five Acre Lights; and, of course, Jonathan Smeeton (a.k.a. 'Liquid Len'), lighting designer for Hawkwind.

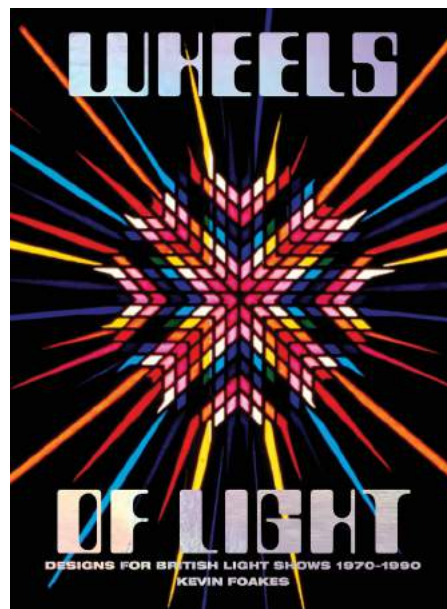
We meet Krishna Lights, run by Jimmy Doody and Keith Canadine and based in London's Goodge Street, and see their influence on Neil Rice, a young art student captivated by the opportunities unfolding around him. Rice recalls of Krishna Lights, "There I saw a liquid wheel for the first time, as well as the new Rank Aldis Tutor 2 . . . This was about as revolutionary at the time as LED lighting is now."

We see the silk-screen printed, hand-painted effect wheels, the sumptuous creations

of artists and innovators such as David A. Hardy, Maggie Gould, Steve Maher and Roy Wilkinson. We are introduced to figures such as Micky Thompson of Pluto Electronics, Colin Cadle of Andromeda Spiral Lighting and Larry Wooden of Orion Lighting, the originator of the continuous rotating panorama effect.

More than anything, it's an important record of a hugely influential period. It doesn't claim to be comprehensive, or the final word on the matter, but for anyone with an interest in performance lighting, this is a book to have and to cherish.

Wheels of Light is part of the Four Corners Irregulars, a series of visual histories of modern British culture. Published by Four Corners Books, 2022, Hardback, 176pp, ISBN: 978-1-909829-20-6



L-Acoustics Obtains Prison Sentences for Loudspeaker Counterfeiters



In partnership with Chinese authorities, L-Acoustics was recently involved with tracking down five counterfeiters who were subsequently found guilty and sentenced to jail for producing and selling counterfeit L-Acoustics loudspeakers in China. The suspects were arrested, and a batch of counterfeit signs, molds, and other items was seized in Shiji Town, Guangzhou. A public hearing was held in The People's Court of Panyu District where the suspects presented their defense against the filed physical and documentary evidence, expert opinions, witness testimonies, and the victim's statements.

The court found the suspects guilty of counterfeiting a registered trademark and were initially sentenced to at least one year in prison, fined, and their activity suspended

for varying years. Since probation for similar activities had been revoked in previous cases, the counterfeiters ended up with prison sentences of up to three years.

L-Acoustics loudspeakers are in high demand by artists worldwide, making the brand rider-friendly. It's no surprise that people want to create copycats to profit from its renowned reputation. However, these counterfeiters pose enough dangers to make people think twice about that cheap price tag. Aside from the risk of prison sentences, various safety risks are associated with deploying untested and uncertified counterfeiters.

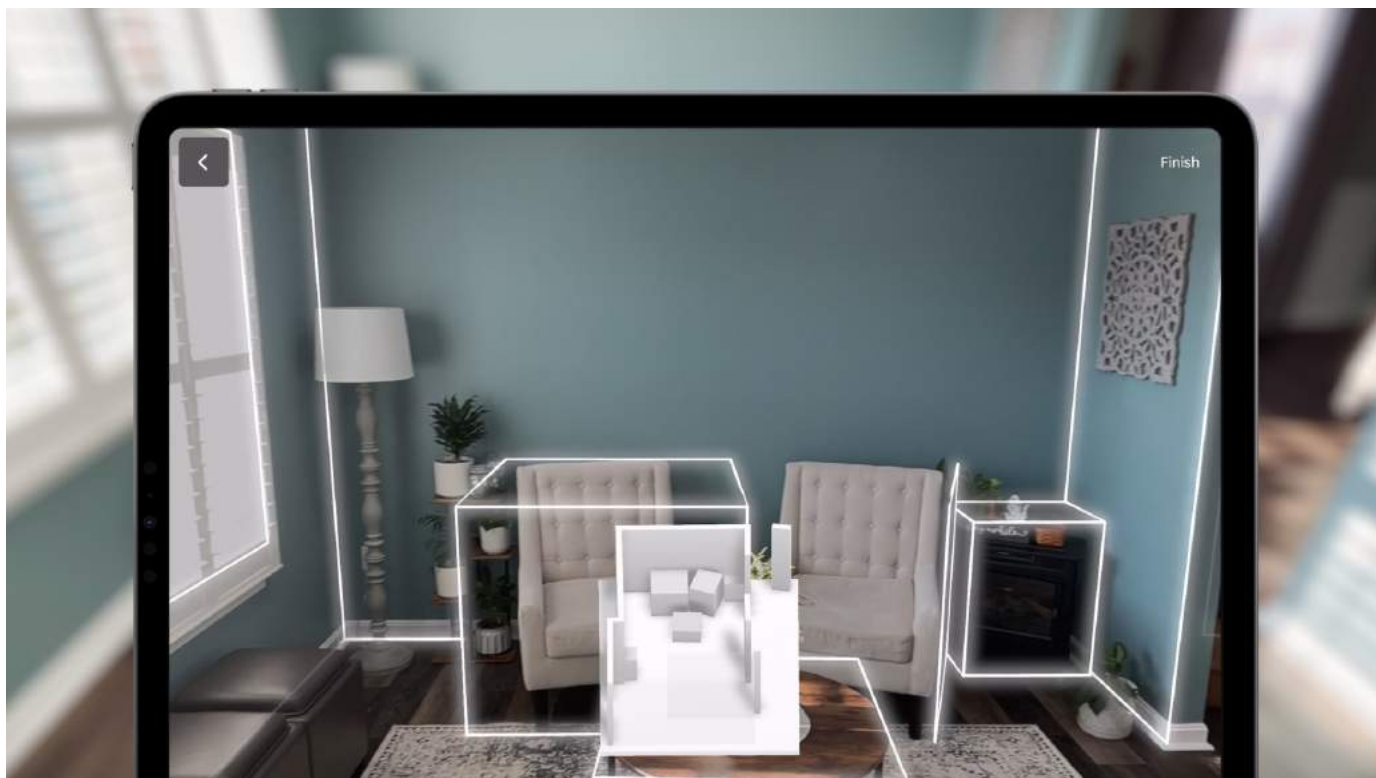
Deployed fake L-Acoustics sound systems will not deliver the same performance as their originals and expose operators and the public to hazardous safety risks and even more

severe legal liabilities if an accident occurs. There's also the risk of a safety inspection from local authorities during a show. A lack of genuine certification of conformity can cause authorities to shut down a show or production altogether.

"To protect the company IP and our partners, not to mention users' safety, we have dedicated significant financial and human resources to act against counterfeit products," states Laurent Ostojski, Senior Legal Counsel at L-Acoustics. "Our task force continuously monitors the market for suspicious activity, and we are pleased to see that firm legal action on the part of L-Acoustics has led to punishment for parties that have been proven to use our brand illegally."

Vectorworks Announces New Cloud and Mobile Enhancements

BUILT ON APPLE TECHNOLOGY



Global design and BIM software provider Vectorworks, Inc. has released key updates to the Vectorworks 2023 product line, focused on providing users with a more efficient and reliable experience on Vectorworks Cloud Services and the Vectorworks Nomad mobile app, utilising Apple's innovative technology.

"We are using the power of the Cloud to bring the latest Apple technologies to our users and speed up and streamline their reality capture workflows," said Iskra Nikolova, Vectorworks quality assurance manager for Cloud and mobile.

The existing Photos to 3D Model feature in Vectorworks Cloud Services has been

upgraded to take advantage of Apple's new photogrammetry API on macOS, known as Object Capture. Job submissions now incorporate this framework on the Cloud infrastructure, desktop app, web portal and Nomad mobile app.

"Apple's Object Capture framework replaces our old photogrammetry framework used for the generation of 3D models from photos. It has higher success rates and creates a more optimized geometry in less time," said Nikolova. "Plus, additional metadata generated by supported iOS devices is used by the algorithm to recover actual object size and orientation, which was not possible before."

In addition, using Apple's room scanning framework, RoomPlan, the Nomad mobile app can now produce models with classified geometry, such as walls, windows, openings and doors, which can be imported directly into a Vectorworks model. Users can quickly scan an existing room layout using their iOS mobile device to create a robust reality capture that is accessible and easy to use.

"Apple's RoomPlan scanning framework is great for capturing existing room layouts and bringing them into Vectorworks with almost no effort or time," said Nikolova.

Building on modern technology gives Vectorworks the ability to continuously provide further updates to the Nomad mobile app. This latest update gives users more control over light representation in their 3D models. The new Lights panel in the 3D model viewer allows for light object visibility control from the viewer, which aids in design presentation. Individual light objects exported from .vwx files can be turned on and off, and heliodon or directional lights can now also set the position of the Light direction control when opening a model in the Unity-based 3D viewer.

Users can try out the latest Vectorworks Cloud Services features by logging into cloud.vectorworks.net. To access the new features in the Vectorworks Nomad mobile app, download the latest version from the Apple App Store or Google Play Store.

QZ M A K



WyreStorm SW-220-TX-W

The WyreStorm SW-220-TX-W is a universally compatible presentation switcher and the perfect solution for professors, students, and business professionals alike to maximise productivity. The SW-220-TX-W is equipped with a USB-C dongle to simply plug into the compatible Apollo APO-DGI. It also includes an HDMI local input and output to provide simple methods for sharing content to display. A 4K camera or other highspeed USB devices can easily be connected to the USB 3.0 device ports to take advantage of the power and unification offered by USB-C.

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www.ambertech.com.au or 1800 251 367
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Blustream NPA70DA

Featuring a 2 x 35W digital amplifier (1 x 70W mono) or 70V/100V hi-level constant voltage output and Dante audio integration, the NPA70DA networked audio zone amplifier delivers advanced audio integration within a commercial or residential AV installation. This is the second Dante-enabled amplifier from Blustream, following NPA100DA in May and expanding the company's portfolio of versatile amplifiers that can connect to both consumer and professional equipment.

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AIDA PTZ4K-NDI-X30

With the rise of 4K being the new streaming standard, AIDA have introduced the PTZ4K-NDI-X30. This powerful PTZ camera can output 4K60p through NDI|HX, HDMI, USB 3.0, and IP formats. It includes a line level audio input, a 30x Optical zoom and Sony 1/1.8" Progressive CMOS image sensor.

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Ayrton Zonda 3 Wash

Zonda 3 Wash is designed to cover an entire stage. Its additive colour synthesis can reproduce precise, intense and deep colours, while the careful colour mixing of the sources allows for perfect colour reproduction. The use of a special black honeycomb and perfect separation of the light sources helps to significantly boost the level of contrast. A complete library of pre-programmed colours, created in collaboration with lighting designers, is instantly accessible. A unique ventilation system, exclusively designed for this luminaire, ensures Zonda 3 Wash is as discreet as it is silent.

Ayrton Zonda 3 FX

Zonda 3 FX is a creative, versatile and feature-rich luminaire that borrows from the main attributes of the Wash version. It offers continuous rotation of the pan and tilt movement I.R.S.T.M. while individual control of each LED allows the creation of 3D volumetric effects. Perfect separation between the light sources helps to significantly boost the level of contrast and visual perception of multiple beams.

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New Zealand: NAS nz.nas.solutions or (09) 414 4220

Tascam Sonicview Digital Mixing Consoles

Tascam has introduced a completely new line of digital recording consoles that use the most up-to-date technology and make it simple to view and control all of the parameters you want. These consoles feature fully customisable touchscreens, user-definable buttons, motorised faders, user-friendly control software and more.

Sonicview 16 offers 16 physical input channels with motorised faders and Tascam's top-of-the-line Class 1 HDIA microphone preamps, while Sonicview 24 provides 24. Internally, the architecture of the two models is the same: generous 44 input channels (40 mono channels and 2 stereo channels), 22 flex output buses, the L/R main bus and an internal SD/USB stereo audio recorder. Other features include multiple displays with two 7-inch colour touchscreens, 54-bit float-point FPGA mixing engine with 96 kHz sampling rate, built-in Dante interface (64 inputs/outputs) that supports redundancy, AES67, DDM and SMPTE 2110, four multi-effects processors, and two Tascam expansion slots. An optional 32-track SDXC recorder, or MADI, AES/EBU and analogue I/O cards are available for expansion slots.

Australia: CMI Audio www.cmi.com.au or (03) 9315 2244

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



NEW GEAR



Magewell Pro Convert Audio DX

Magewell's first solution with integrated support for Audinate's Dante, the new hardware lets users easily convert audio between Dante, NDI, and SRT transport technologies while also seamlessly bridging analog audio, software, and IP networks. The flexible virtual audio matrix in Pro Convert Audio DX's browser-based interface allows users to route or mix any analog or IP-based input channel to any analog, IP, or UAC output. Multiple Pro Convert Audio DX units can be centrally configured and controlled through the Magewell Cloud multi-device management software.

Australia and New Zealand: Corsair Solutions www.corsairsolutions.com.au or +61 (0) 3 9005 9861



Williams AV WaveCAST C

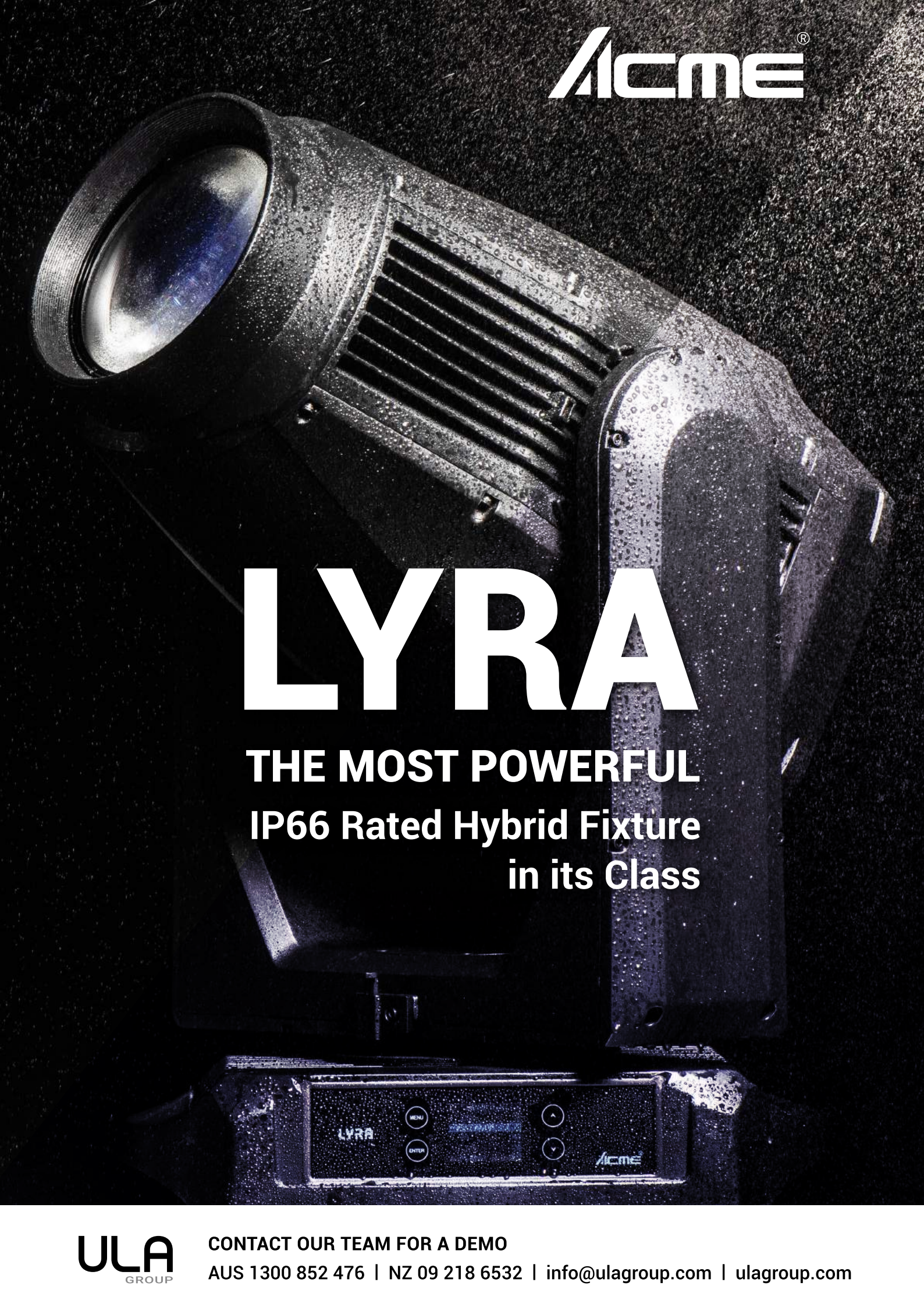
The new WaveCAST C, built on a hardware-based DSP, is designed for pro-audio applications where high-quality sound is required. It integrates with third-party room control systems allowing AV professionals to control and monitor the unit using Telnet commands via Ethernet.

Williams AV WaveCAST WAV Pro

The WAV Pro Wi-Fi Receiver is designed to work with the full suite of Williams AV Wi-Fi products, including the WaveCAST C and dual technology products featuring FM and Wi-Fi and Infrared and Wi-Fi products. The receiver is a new mobile device optimised for use as a dedicated assistive listening. It features a 6.8" HD+ Infinity display for easier readability for administrators during setup and end-users when using the device. In addition, the 6000 mAh Lithium Polymer battery delivers up to 40 hours of continuous audio streaming in normal use conditions, reducing charging frequency.

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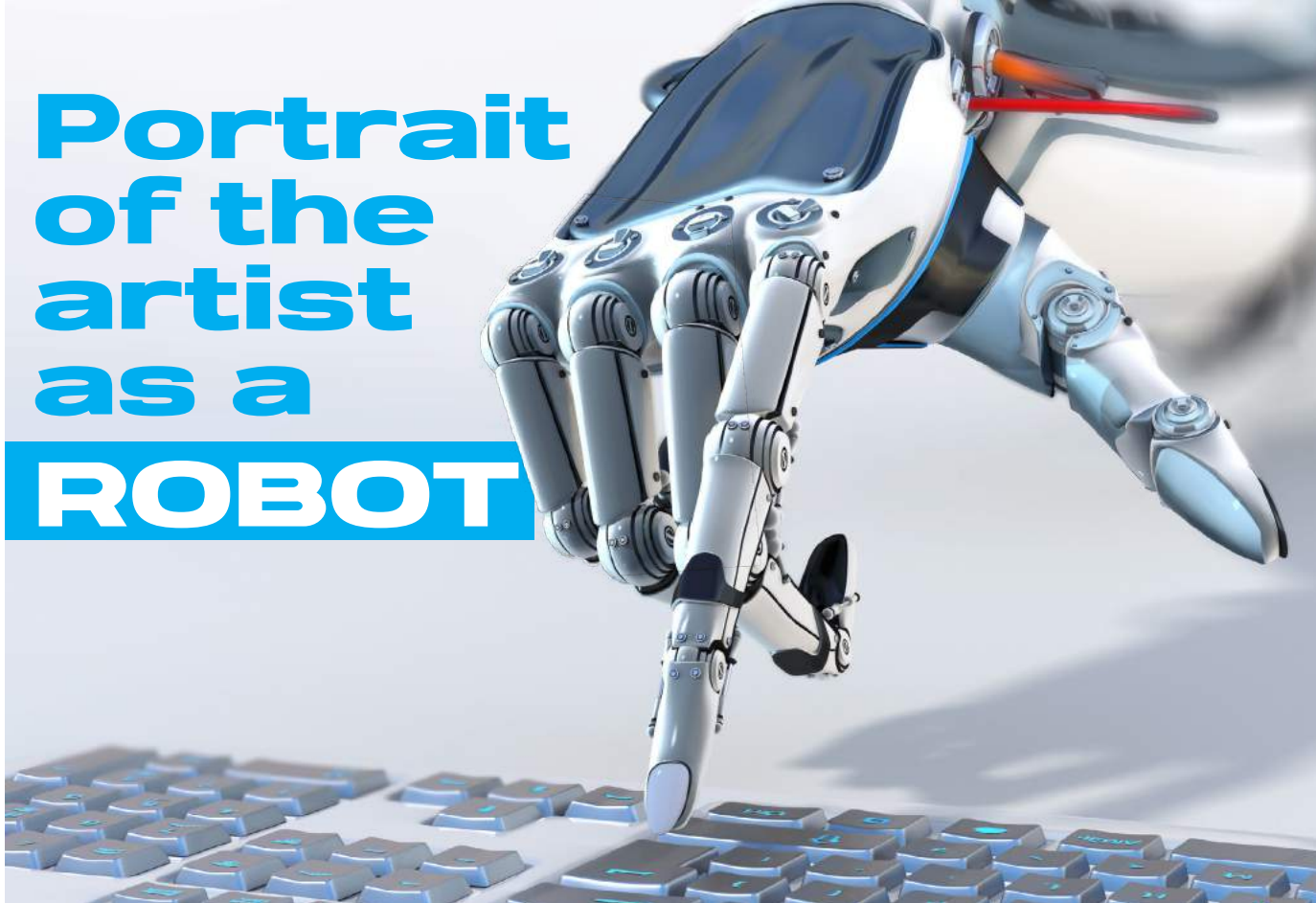
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Portrait of the artist as a ROBOT



The world is an unpredictable place. We all know this from having been collectively blindsided in the last few years by unforeseen global events. Now another event looms on the horizon that may just influence the music industry in ways that almost no-one has given a second thought.

The prelude to this event is a touchy subject in itself; one that's been done to death in recent times and yet somehow remains scarcely understood by musicians and producers worldwide. I'm talking about the benefits and pitfalls of digitally producing and editing music.

Yeah, I know... boring, right? I've always found conversations about digital recording, editing, pitch-correcting and other ways of 'interfering' with a human performance a bit like watching paint dry. Almost as boring as the analogue-versus-digital debate. Hang in there; my reasons for diving into this tedious mire will become clear in a moment.

Like most of us, I just use the tools in front of me to do what I need to do to get the job done, and to hell with theory or principle. If I need to fix something, I just do it. If I enjoy the sound of something, I record it. There's no moral judgement involved – no right or wrong.

But I think in some ways we've been asking the wrong questions over the years about digital editing and been seduced over a couple of decades now by the power it affords us.

For example, we've regularly posed the question: "Does pitch correction software remove the 'emotional content' – the humanity if you will – from a vocal?" when perhaps we should instead have been asking: "What is 'emotional content' and how do I recognise, capture, nurture or emphasise it?" There's

nothing wrong with pitch correction tools per sé in the hands of creative artists...

With rhythms, it's a similar story. We're forever asking ourselves, "Is the performance 'tight' enough, 'solid' enough?" – these sorts of adjectives. It should come as no surprise then that our computer software has been engineered specifically to aid us in our incessant quest for tightness. The software simply reflects our perceived needs and the questions we've demanded answers to.

Perhaps we should have instead been asking ourselves how a rhythm feels, and of our software developers, how we might be able to pinpoint it in a recording. Not simply: "Is this performance bang on the timeline, and if not how do I 'fix' it?"

We should be asking the question: "What is 'feel'?", not "What is 120 divided by 60?" (which is effectively the only thing our computers currently provide the answer to).

Thus far computers have been excellent at showing us mathematical facts about performances: whether a vocal is flat or sharp, whether a beat is early or late. These are relatively easy tasks for a machine to execute technically since the questions can be framed and solved in purely scientific terms: the pitch is flat because it's this frequency, not that one; this beat is late because it's arrived at this point in time, not that one, and so on.

But our software hasn't got the foggiest clue about what an emotional human performance looks or sounds like, and worse, it subtly discourages us from examining performances from this perspective ourselves. Computers have no tools with which to examine musical performance from this angle, and yet software developers regularly claim their toolkits are 'comprehensive'. They are not.

As a result, software has inadvertently developed an uncanny ability to remove some of the most precious human attributes we naturally possess, throwing them out in a vain attempt to 'fix' the so-called problems. Software has specifically developed this way because we've asked it to, and because we currently have no way of defining (let alone measuring) these other, less scientific human characteristics.

If neither we nor our software can adequately define adjectives like 'feel', 'humanity', or 'emotion' well enough to identify these qualities in a performance, or acknowledge their removal when they're lost to editing, then there's arguably some truth to the assertion that some of our most compelling human qualities are indeed being destroyed by our production processes, rather than captured, emphasised or nurtured by them.

Tomorrowland. And so here we are now in 2023...

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ROSS



And where is music today? Well, there's no doubting that artists have discovered some amazing new sounds and explored incredible sonic landscapes in the last 80 years or more. People all over the world have produced some fascinating, beautiful, radical, soulful, engaging, entertaining and confronting music with the tools at their disposal. And despite the hyperbole, album production today is as healthy as it has ever been and I'm consistently blown away by what others bring to the table. It never gets old.

But there's also been an explosion – in this century more so than any other – in the amount of truly generic, derivative garbage that's consumed by the mainstream listener like a McDonald's cheeseburger.

Like the food production industry, the music production industry has learned to cater to the mainstream listener by generating lots and lots of easily digested, familiar products that millions upon millions of people consume daily.

The food industry has its junk food, the music industry its junk music.

It's perhaps not surprising then that during this slow slide into digital audio manipulation par excellence, where a large proportion of the music consumed worldwide is highly modified and deeply generic – the musical 'Happy Meal' as it were – a new, arguably more invasive, unpredictable influencer is quietly establishing a beachhead on our shores that may worsen the portrait of our industry further; generative Artificial Intelligence (A.I.).

A.I. is taking hold in all walks of life right now, and in music production specifically its influence has begun to emerge in at least one particularly insidious way, through its new role in the so-called 'writing' of original music.

At the click of a button now, A.I. can 'pen' a song for you (although whether you own it at the end of the process remains unclear). Literally anyone can now go to various sites that perform this 'songwriting' task for you (because hey, songwriting is confusing, time-consuming and difficult – who needs that drama in their life, right?) and moments later – for better or worse – there you have it: the lyrics, chords, everything manufactured for you. Too easy.

To me, this raises some serious questions about how we value songwriters and how we produce contemporary music in the here and now, as well as conjure sinister thoughts in my head about where this leads us in the future.

Are we sleepwalking artistically into the blades of a twenty-foot meat grinder? Does this mark the beginning of the end of music as we know it, of art as we know it, such that in 10- or 20-years' time the notion of a human songwriter, producer or engineer will seem quaint at best, a distant memory worse still? Or will this happen in two-years' time, not 10 or 20?

This might sound like nonsensical fear mongery to many, but they're fair questions to ask. There have been several revolutions during the relatively brief time we've been recording ourselves as a species; many of them technological. We've been powerless to stop all of them so far, it would seem... so how will A.I. affect the music industry when it takes hold?

I can't really imagine where this development might lead us in 12 months let alone 20 years, although my instinct is to feel gravely concerned.

But if I'm a believer in things going in cycles, not straight lines or off on tangents, although I'm not sure whether I am or not, to be honest, the time may be fast approaching where most songs are written, arranged, and to a larger extent performed by generative A.I. systems and software, including – wait for it – the vocals.

At this tipping point record companies will be able to generate their own content without the need for a pesky thing called an 'artist' gumming up their corporate works with annoying human demands like, for example, needing to be paid. Moreover, this switchover will have been made particularly seamless for them by our 20-year obsession with tuned, synthesised and generally artificial sounding vocals in popular music. When this day dawns, when artificial voices perform the main vocal role, many listeners won't be able to tell the difference!

The logical extension of this economic model may then see the emergence of new 'A.I. artists' like 'Woolworths' and 'Coke', even

'McDonalds' – a genuinely horrifying prospect. But then, maybe, just maybe, there will come a breaking point.

What I suspect will emerge out of this ugly scene, this wholesale hijacking of music as a human artform, is a re-emergence of musical artists young and old, humans with an emotional story to tell, who have a face and a name, who pen their own lyrics and arrange them on an instrument with skills they've developed over some years. They might eschew technological interference from tools like Beat Detective and AutoTune (et al), believing strongly that it destroys the best aspects of what they offer the world – their human artistry and perspective. They will sound different from the mainstream – like Cher did back in '98 with *Believe*, they will release their music independently at first, some to raging success, and then perhaps at least a few corporations will retreat back to doing what they do best: selling junk food.

Though they will surely try, corporations will fail in their attempt to usurp artists and capture a creative market. The suits can pretend to be artists all they want, but they simply don't understand that what makes an artist is not their output or product, but rather their process.

I am always in awe of those who toil at the coalface of the music industry, whose process, principles and artistry keep them going even in the face of general disinterest from the world around them. Some of these artists stay the course for 50 years without mainstream recognition, and still they keep at it! That is commitment, that is dedication.

But a day may dawn soon where all this flips on its head again, and who knows, someone reading this article might suddenly be thrust into the limelight.

Or we may not exist in a cyclic paradigm at all... maybe it's a random, tangential one.

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



Andy Stewart

New Year's Eve celebrations

mark a return to business as usual

Across the country as fireworks lit up the sky, AV hire companies breathed a sigh of relief and looked forward to a year of strong bookings.

In the capital Wellington, festivities in Wharepo Lagoon kicked off with live bands, followed by Orchestra Wellington delighting the crowds with a disco theme, building up to the New Year's countdown and fireworks. For Pyrostar, MJF Lighting and Western Audio, it was good to be back making community events happen. Sebastian Hesp, Wellington

Manager at Western Audio, reflected, "We got that feelgood factor back that we have been missing. It is super awesome to be involved with something for the community. It was wicked for families to have an event where they could come together and celebrate for free. This was for everyone."

And for once, and in stark contrast to what was to hit the North Island over the following weeks, Wellington put on perfect conditions, "It was lovely, no wind, always a good thing for the Wharepo Lagoon. With the audience a good eighty metres across the water from the stage, they are a long way from the speaker point so we use a d&b KSL System. We had a team of

four catering for the large number of players and their specific requirements."

Auckland's SkyCity celebrations and fireworks were also back in full swing, having been scaled down last year. 2021 was Pyrostar International Director and Designer Robert McDermott's first New Year's Eve off work in thirty-seven years but this year he was back with 500kg of fireworks supported on racks custom built for Sky Tower. Due to international supply chain issues, Robert started planning and designing the show in February to be sure he had everything he needed for the 3500 shot display arriving on time. The show combined single star comets with mines exploding from



Crowd gathers at Wellington's Wharepo Lagoon



Auckland's Sky Tower

“We got that feelgood factor back that we have been missing.”

Sebastian Hesp (Western Audio)



Entertainment in Wellington

the ground, releasing between twenty and thirty stars, and cross-sets which look like a shell burst, taking full advantage of the option to launch from three levels on the SkyTower, up, down and around.

The fireworks were accompanied by a Kiwi music soundtrack and a light show provided by Ben Lawrence, Director and Designer of Soulstorm Lasers, one of eight events the laser company supplied within a five-day period, “It was good to be incredibly hectic again and the crowds were the biggest I’ve ever seen in seven years of doing the event.” This year’s laser show was upgraded to include three high power lasers at each of the northern, western and southern projection locations surrounding the tower. This provided a total of 50W of laser power at each location. Using three lasers allowed a countdown to be displayed on the top section while simultaneously projecting detailed artistic content on the stem of the tower, covering more than 80% of the full tower. The three laser stations were synchronised using a 60GHz microwave link installed inside the tower communications deck.

The content was also significantly improved. Soulstorm Lasers’ resident designer Catherine Ellis created a timeline with soft textures, geometric, digital and organic sections, which built up to the midnight moment. Much of the content was generated from video, as opposed to using laser software, which made the display unique. Each section was integrated and choreographed with the tower lights, which had been turned off in previous years.



Laser countdown in Auckland

Ben also designed the lightshow for Dunedin City Council who decided to move away from fireworks, due to building works in proximity of the Octagon posing a fire risk. Soulstorm Lasers and U.S. based laser designer Nisha Ramnath produced a midnight show which included laser mapping of the Burns House office tower and nearby buildings. The show comprised seven high power lasers, including a 48W Arctos unit which is the brightest show laser in NZ. The seven minute show was choreographed to music, using speakers spread around the Octagon provided by



Huge crowds in Auckland



Live music in Wellington



Wellington



Laser mapping in Dunedin

Strawberry Sound. Event Team Leader at Dunedin City Council Dan Hendra was pleased with the impact, "It was really exciting to do something different for New Year and we can see the potential for future events. We are already in the process of collating feedback from the community and putting it in front of Council for New Year's Eve 2023."

On a smaller scale, provincial cities across the country joined in the celebrations. New Zealand's first city to see in 2023 rang in the new year with the annual Fire in the Sky event, sponsored by family business Walter Findlay Ltd Quality Bakers since 2002 and run in conjunction with Gisborne District Council. Fireworks and soundtrack were designed and delivered by Christchurch's Fireworks Professionals. For Magenta Wilde, Director,

it was a relief to be back, "Before COVID we would have fifty events between Guy Fawkes and January, last year saw us down to nine, now we are back up to eighteen so we're going in the right direction." And for long-time stalwart of Gisborne NYE celebrations, Fireworks Technician Chris Hilder, it was wonderful to be under the pump again, "We do the Fire in the Sky and Rhythm and Vines over the two days, so I run between the two. The New Years' celebrations are technically difficult to get right due to the three separate locations of the audience spread around a river confluence, but it sounded and looked fantastic this year. It was brilliant."

Palmerston North got in on the action with Council upping its production and organising a fire and dance show, various family-friendly

singers and an early kids' fireworks display followed by a thirteen-piece band performing popular hits. Noise Productions, Masterton provided the sound system, Peak Audio supplied the stage and MDR Sound & Lighting supplied the lighting.

Communities across New Zealand came together, as did AV companies, to mark the end of what was a tough year, optimistic that, in the words of Brodie Noon, MD of MDR Lighting and Sound, "Aside from the global skills crisis and the current weather, things were looking good!"

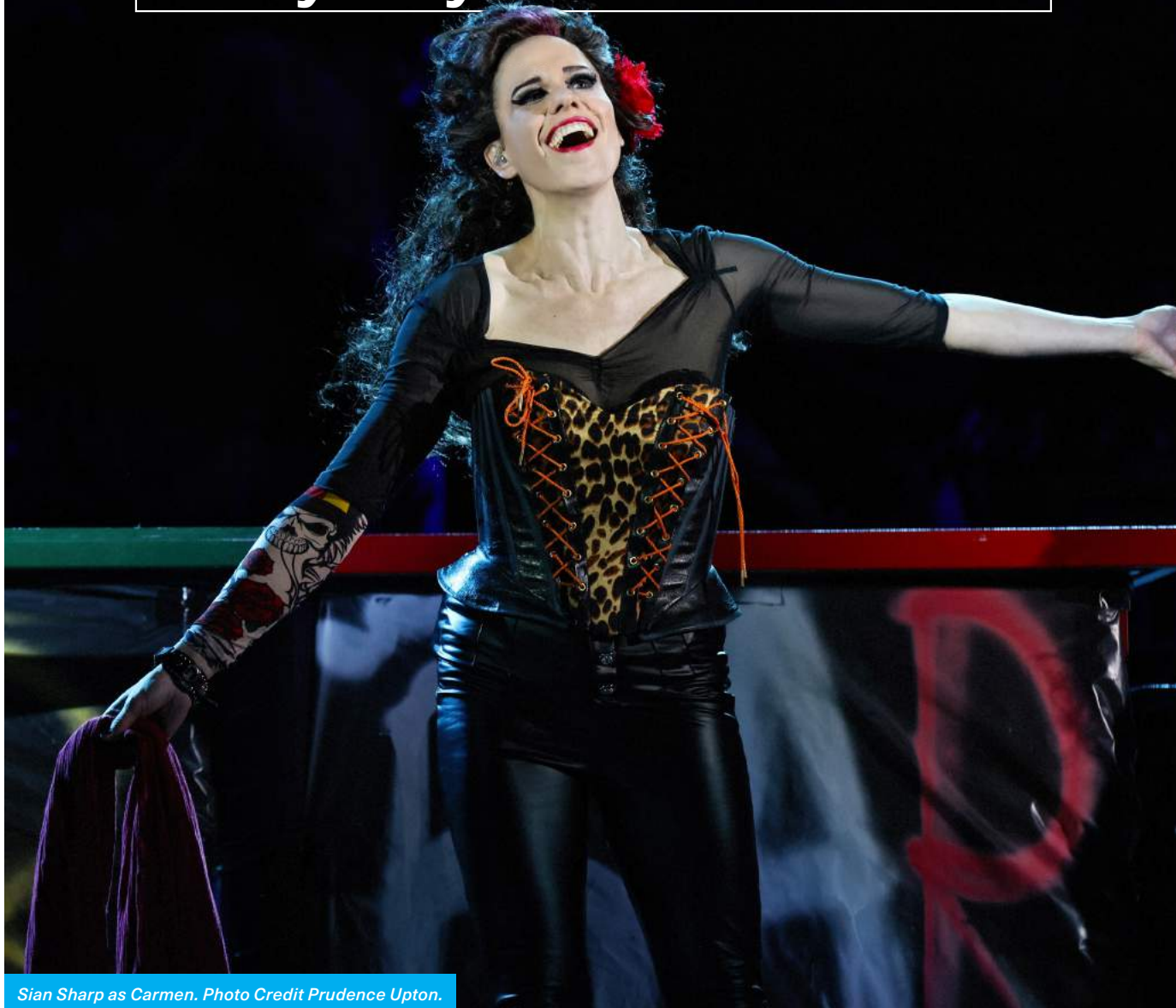
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CARMEN RE-IMAGINED

On Sydney's Cockatoo Island



Sian Sharp as Carmen. Photo Credit Prudence Upton.

John Rayment, renowned Australian lighting designer, recently lit a contemporary version of Bizet's *Carmen* on Cockatoo Island in Sydney Harbour for Opera Australia, overcoming the elements, the challenging location, and very tight time restrictions.

Director Liesel Badorrek and Designer Mark Thompson saw the industrial surroundings of Cockatoo Island as an opportunity to re-imagine this old opera for new audiences. With Cockatoo Island's abandoned dockyards, disused cranes, and heritage buildings setting the tone, Opera Australia (OA) transformed *Carmen*'s celebration of society's misfits into a rock 'n' roll extravaganza of motorbike stunts, fireworks, and bold, edgy dancing. A twelve-minute ferry journey transported the audience to a music festival vibe with pop-up bars and dining, and a gritty retelling of this classic opera.

Designing to an industrial aesthetic

John Rayment, who had previously lit *Carmen* on numerous occasions including outdoors for Handa Opera on Sydney Harbour in 2014 and 2017, recalls that the design of the show went through various iterations, "Opera Australia wanted to put on a show to mark the start of summer, in addition to Opera on Sydney Harbour that marks the end of summer. Cockatoo Island was an attractive venue in the midst of COVID because we



Photo Credit Hamilton Lund

could restrict and control audiences, and even have boats moored off-shore watching on big screens." Postponed until after the COVID restrictions, the appeal of the isolated nature of Cockatoo Island shifted from the practicalities of crowd control to the unique aesthetics of the location.

John relished the challenges posed by the shift away from Carmen's traditional 19th century Spanish setting, "The aesthetic aims of this piece were very much in keeping with

the industrial flavour of Cockatoo Island, more grunge and rock 'n roll, and I wanted to reflect that in the lighting with a much busier design." John looked for accents in the music and opted for overt lighting to highlight those moments, "Some of the big numbers are lit as if for a music concert, so very different to a typical opera."

Encouraged by the intention of the director and the designer to draw in new audiences, John put the expectations of opera purists to one

side, "We weren't surprised or disappointed that some of the traditional opera goers didn't like it. We were setting out to put the music at the design heart of the show and make that appealing to the young."

This meant lots and lots of moving heads; "Opera Australia has over one hundred and forty moving heads in the main theatre, so the company is very familiar with the use of moving heads.



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An issue was the arrangement of the hardware as it had to hang immediately adjacent to the stage on the scaffolding, so it had to fit with the aesthetic. I was very conscious of what the lighting physically looked like and the patterns and progressions we could make. It also raises

audience expectations when they see all that lighting hardware. I had all sorts of aerial stuff going on in pre-visualisation. Obviously, on-site we had to contend with daylight savings so for the first fifteen minutes we were operating in dusk conditions, and the prevailing wind conditions meant that the haze we expected to hang about disappeared. As a result, a number of effects didn't read as we'd like, and we adjusted them out into the audience so they could see the lighting more overtly."

John used a mixture of Martin MAC Viper Performance and Viper WASH, some ClayPaky Scenius, and PROLIGHTS PanoramalP WBX washers, "They are a great little light, really powerful." He also used forty-eight old ACLs which became VNSPs in a nod to the grungy rock 'n roll look and feel, "As we had an open stage with no roof, the bulk of the Vipers were arranged on panorama bars running down at an angle, for a perspective on the sides and along with other stuff arranged on the scaffold itself doing much of the work."

John had two front of house towers with four follow spots, "I didn't use a centre front of house tower position as we had three projectors, and it was a pretty shallow shot so I thought lights would bounce too much off the stage surface and wash out the projection."

Along the front of the stage Mark Thompson placed a large number of yellow barrel drums, "They were great as they could take a lot of colour and have different personalities creating a strong frame for the picture." Unable to use battens along the front of the stage, "We were worried about the combination of lights, motorbikes and the front row of the audience." John used the Scenius in the front of house to light all of the front crossovers, "They are so punchy and we loaded them up with gobos, colour and animation and they still cut through creating the texture you can see on the drums." He finished off with a lot of fusion bars uplighting the back wall and all through the scaffolding, giving the scaffolding a whole personality of its own.

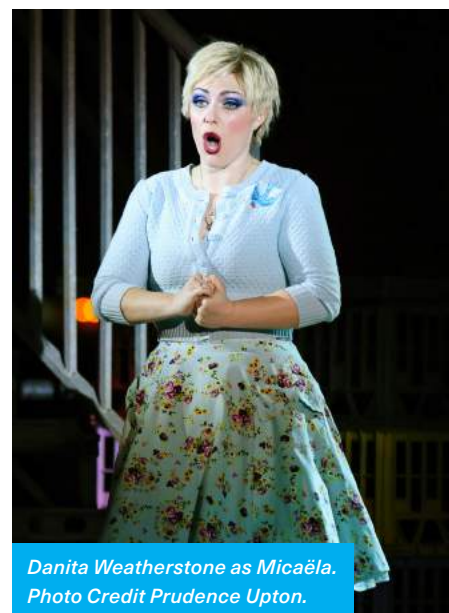
"He finished off with a lot of fusion bars uplighting the back wall and all through the scaffolding, giving the scaffolding a whole personality of its own."



Alexander Hargreaves as Dancairo, Agnes Sarkis as Mercédès, Sian Sharp as Carmen, Jane Ede as Frasquita, and Adam Player as Remendado. Photo Credit Prudence Upton.



Roberto Aronica as Don José and Daniel Sumegi as Escamillo. Photo Credit Prudence Upton.



Danita Weatherstone as Micaëla. Photo Credit Prudence Upton.



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Alexander Sefton as Escamillo and the Opera Australia Chorus. Photo Credit Prudence Upton.

"We had serious gusts [of wind] to deal with, up to seventy kilometres an hour. Luckily the back wall was stacked containers so they weren't going anywhere."



Carmen Topciu as Carmen. Photo Credit Prudence Upton.



Alexander Hargreaves as Dancairo. Photo Credit Prudence Upton.



Sian Sharp as Carmen and the Cast of Carmen. Photo Credit Prudence Upton.

Working around the tight time restrictions

Inspiring though the location was, it came with restrictions. After 11 o'clock at night there were no boats allowed and strict noise limitations, "We couldn't stay till three in the morning doing notes and had to rely entirely on previsualisations. I've been using WYSIWYG since the opening ceremony at the Sydney Olympics in 2000 and on any outdoor show I always substantially pre-viz it before I hit the site. But with this being a very busy design and no opportunity to work after rehearsals, the pre-viz for this show was a lot more detailed. We did the notes from the rehearsals the next afternoon in the virtual world." John recalls it as being quite surreal, "At one stage I was doing notes in the virtual world from rehearsals I'd seen in daylight on the site. I was actually making pre-viz notes in pre-viz!"

Working on an island

OA brought everything across including synced twin generators to run the lighting, "Cockatoo Island might have had massive amounts of power in its day, but now that is all tapped off elsewhere and it is very expensive. It was cheaper for the diesel to run the generators than to hire power on the island."

The barges came over once daily, weather permitting, so as always good planning was critical, "You didn't want to forget anything as you'd have to wait twenty-four hours."

Lighting logistics were simplified by OA having no other performances running in Sydney, "The company's full resources were available to us. The bulk of the stage lighting was sourced from Chameleon Touring Systems. We also used OA for labour, Big Picture did projection and Norwest Productions did the audio with Tony David Craig, the living legend, operating."

Working in the elements

The rain stayed away but the wind was a problem, "It was a killer. We had serious gusts to deal with, up to seventy kilometres an hour. Luckily the back wall was stacked containers so they weren't going anywhere but we couldn't send anyone up the front of house towers. It also meant barges were unable to dock and even the ferries took a couple of attempts to hit the wharf."

The wind resulted in John opting not to use BlackTrax, "OA have a substantial BlackTrax system and whilst it's not that it doesn't behave itself outdoors, things like wind can make the technology more trouble than its worth. I also felt if I committed to BlackTrax and had to ditch it, I'd have no fallback, so we went for four follow spots."

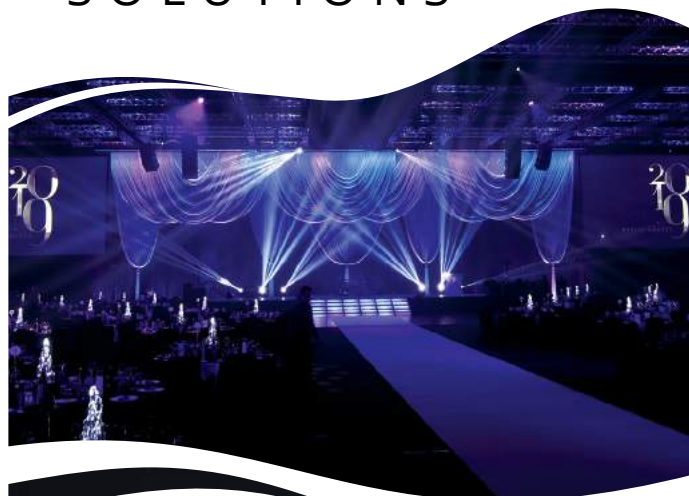
He commends his techs, "Everyone else has two weeks prior in a studio doing rehearsals and forgets that these guys have to work pretty hard to catch up. It was hairy but they coped really well."

Favourite moment

Looking back John pinpoints his favourite moment, "In the second half Micaëla has a very poignant aria and I was able to use the Scenius with their punch to put a starfield gobo through all the scaffolding to match and extend the projection, so the whole picture became filled with stars which was good fun."

Overall though John is proudest of the way the lighting developed with the plot, "We still had stuff the audience hadn't seen by the final act. The ACLs suddenly appear bouncing along and because they are conventional the colour temperature is different. Even not necessarily registering how it was happening, the audience knew it was something they hadn't seen before. For me keeping the visual interest going right up to the finale was very satisfying."

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Robe Dreams with Crowded House



Crowded House are among Australia and New Zealand's most iconic, popular, and successful bands, with a string of melodic hits like "Better Be Home Soon", "Don't Dream It's Over", "Something So Strong" and others, some stretching back to the 1980s, all still infectiously foot tapping in 2022 when they hit the road again after re-forming in late 2019.

A recent show at Stage 88 in the lush green environs of Commonwealth Park, Canberra, was one of a week of rescheduled Australian shows, postponed from April when the tour was interrupted by the Covid lockdowns. Here, locally based technical production company, Elite Event Technology (EET), supplied an all-Robe moving light rig.

The band's lighting designer Dan Black used this mix of Robe BMFL Blades and WashBeams, MegaPointes, LEDWash 300+s and 600s to great effect, crafting a beautifully elegant lightshow that perfectly matched the mood and style of a crisp springtime evening outdoors.

Crowded House had played a splattering of concerts throughout 2020 and 2021 in Australia and New Zealand as and when pandemic restrictions allowed, with lighting and video designed by Ben Dalglish from Human Person. Come April 2022, Ben had other commitments, so Brisbane based Dan, part of the Colourblind visual collective, came onboard.

The first part of the 2022 tour retained the video elements from those original shows and a set designed by Ben, but involved a completely new lighting design by Dan which included Robe Spiiders as the main wash lights and RoboSpots providing key light on the artists.

This design then went to Europe for shows and festivals over the summer, and was further modified for these rescheduled Australian shows, a run of dates further

expanded with new added gigs, such as the public appetite!

Due to the scheduling of this leg, some shows used the touring system, again being supplied by Chameleon Touring Productions of Sydney, and some, like the Canberra show, had production supplied locally.

Dan sent his lighting plot to EET, ACT's major production and rental company headed by Darren Russell, who matched it as closely as possible with what he had available, which was all the Robes.

The Spiiders on Dan's touring spec were swapped out for the even lighter Robe LEDWash300+s due to the weight loadings of Stage 88's permanent tensile roof structure, and his standard hard edged fixtures substituted for the BMFLs and MegaPointes.

Dan was happy to work with the Robe fixtures on this show, commenting that whenever he sees Robe on the rider he knows he will get plenty of "flexible and reliable" options.

He chose Spiiders for the touring rig because they are "bright with a great colour range" and are one of his go-to's for a reliable and dynamic wash light. He also likes the flower effects, though they were not used for Crowded House!

For the April 2022 Australian tour, Dan had also used three RoboSpot systems for the first time, supplied by Chameleon.

Running on these were three BMFL WashBeams rigged on the front truss allowing very efficient following of the front-line artists – guitarist Liam Finn, lead singer / guitarist and co-founder Neil Finn and bassist Nick Seymour – all of whom move constantly during the average set.

Dan loved the RoboSpot system. "You can utilise lights anywhere on the rig and get the right angles without significant spillage," he noted.

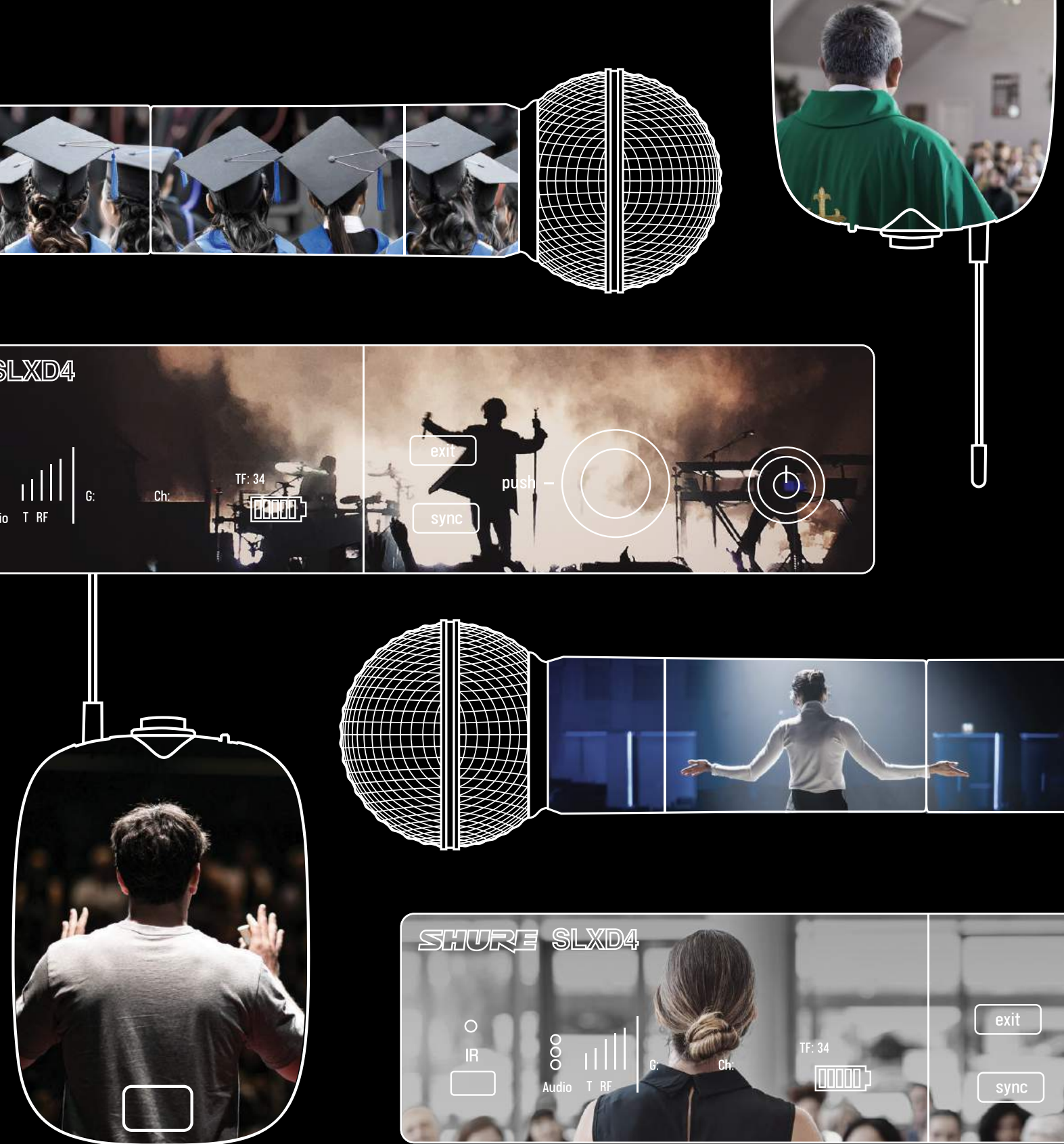
In Canberra, the seven BMFL Spots on the front truss were used for key lighting and specials, with the 19 x LEDWash 300+s in the overhead trusses providing the wash coverage.

The 13 x MegaPointes were also on the upstage trusses and used for effects, gobo looks and other scenic lighting looks, while another six BMFL Spots were deployed upstage on the floor, utilized for powerful beam-work and back lighting. Also gracing the upstage deck were seven LEDWash 600s for additional blow through effects and to contrast the BMFLs Spots.

Lighting helped create the drama and atmosphere for the set, with integrated but organically executed cuing, spot-on timing, and tight key lighting, ensuring the focus stayed on the music, the artists and enhancing the incredible connection they have with their audience.

Following their moods requires a certain amount of improvisation and great empathy to make this a genuinely organic live visual experience, something that Dan clearly enjoys delivering.

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RÜFÜS DU SOL

2022 HOMECOMING



GLOBETROTTING SYDNEY TRIO'S TRIUMPHANT TOUR

The global success story that is 'alternative electronica' trio Rüfüs Du Sol returned to Australia and New Zealand on a glorious post-COVID victory lap through November and December 2022. Vocalist and guitarist Tyrone Lindqvist, keyboard player Jon George and drummer James Hunt packed major outdoor venues in Australia, pulling crowds the equal of major festivals.

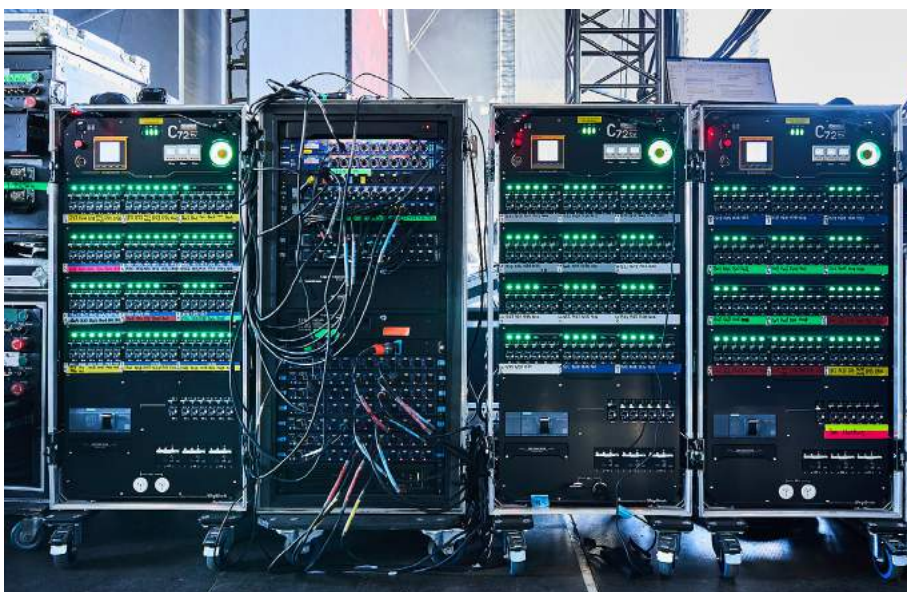
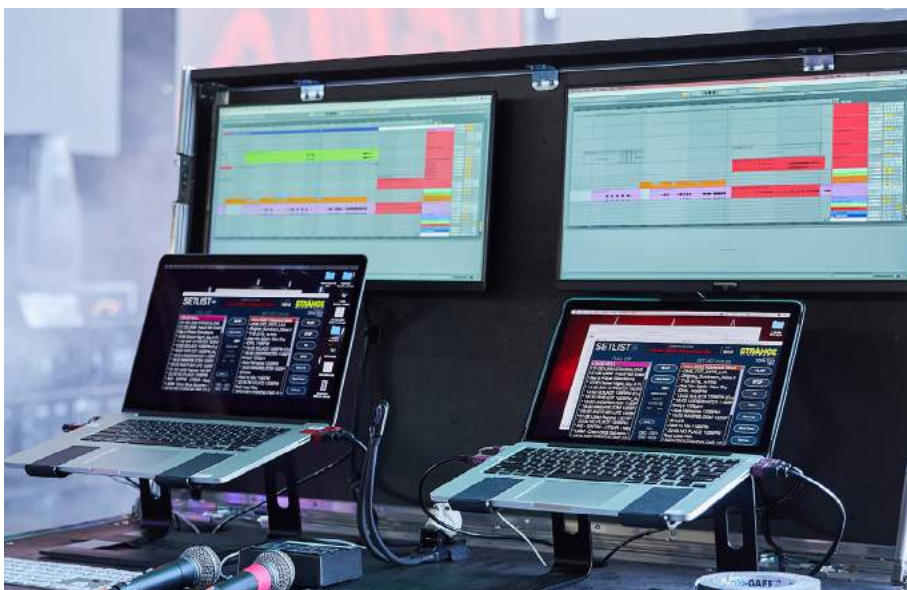
Such was the appetite to hear the band live for the first time since the release of their album 'Surrender' in 2021, 28,000 came to the Brisbane show, 50,000 to Sydney, and 50,000 in Melbourne. Even Adelaide managed 10,000, while Perth packed in 20,000.

With huge hits like show opener 'Make it Happen', dance floor anthem 'You Were

Right', and the Grammy nominated 'On My Knees', the production needed to be as big as the soundscape and the crowds. Adelaide's Novatech Creative Event Technology took care of the full lighting and video package for all five Australian cities and provided an L-Acoustics PA system in Adelaide and Perth. Eighth Day Sound provided d&b audiotechnik GSL and

KSL for the eastern states. Rüfüs Du Sol's sound team deployed AVID S6L desks on both FoH and monitors.

Matt Smith, creative director of lighting design studio Colourblind, has been LD for Rüfüs Du Sol for many years. He specified a Robe and GLP-heavy rig, with additional fixtures from Claypaky and Martin. Control was via



two grandMA3 full size, with all lighting gear supplied by Novatech in touring A and B rigs due to logistics. Apart from some minor fixture substitutions in Perth due to the closeness in timing of the gigs, every crowd got the same experience.

The video design was as epic as the tour. A solid 338 panels of ROE Visual's CB5 5.77mm

pitch were deployed across screens upstage, stage left and right, and on the riser. ROE's new Vanish V8T panels handled the show in Perth. Two 20 metre roofs and sets staging from Sydney's Stageset travelled around the country with the lighting and video rigs.

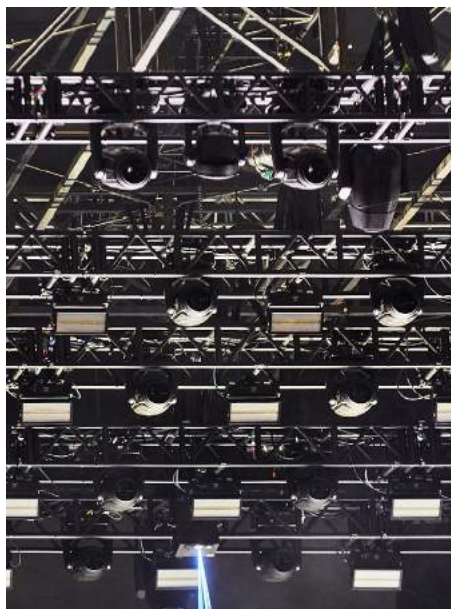
Before kicking off in Brisbane on 26 November, the band and production crew set-up the

whole show at The Adelaide Entertainment Centre for rehearsals. "There was a lot of pre-production, programming and checking," explains Novatech's Managing Director, Leko Novakovic. "We had eight crew each travelling with both the A and B rigs of lighting and video, and three travelling with audio for Adelaide and Perth."

The design and pre-production effort were noticed, with one reviewer in Adelaide commenting, "The lighting and screens deserve a special acknowledgment. It was a truly amazing spectacle and kudos to the way the light and sound meshed to create the ultimate experience." They also noticed that, "The high-powered sound system with additional speaker stacks in the crowd gave a pure, crisp and rich sound."

One of the big challenges with running so much LED alongside lighting and audio on this scale is power. While it goes unsung, power management is critical. A tech highlight for the Novatech crew was their new StageSmarts C72tv power management systems. The Swedish firm's C72tv runs 72 x 16A channels and deals with all the hidden power issues like inrush currents, earth leakage, and tripping that can really stop a show.

"We've had a long relationship with both Rūfūs Du Sol and Colourblind's Matt Smith, and it was great to bring such an epic production to crowds this large and appreciative after the long COVID hiatus," concludes Leko.



THE A RIG - LIGHTING

40 x Robe MegaPointe

51 x GLP JDC-1

6 x Clay Paky Scenius Unico

42 x Robe BMFL

30 x Martin Quantum Wash

38 x GLP Impression X4 Bar 20

11 x ER 30 AT Lasers

4 x MDG The One haze machines, 4 x Base Touring High Volume DMX smoke machines, 4 x Briteq BT-Hurricane DMX fans

2 x grandMA3 full size, 2 x grandMA3 processing unit M

AUDIO - ADELAIDE & PERTH

Main Left/Right Hangs

8 x L-Acoustics K1 subwoofers

30 x L-Acoustics K2 line array speakers

24 x L-Acoustics SB28 Dual 18" subwoofers

Front Fill

12 x L-Acoustics KARA line array speakers

Left and Right Side Hangs

18 x L-Acoustics K2 line array speakers

Comms

1 x Riedel Artist 64 Rack

12 x Riedel SmartPanels

10 x Riedel Bolero wireless coms belt packs

12x Hytera 2-way radios

THE A RIG - VIDEO

Upstage LED Video

3 x 4.8m x 9.6m, 192 x ROE Visual CB 5.77mm LED panels

Stage Left LED Video

1 x 4.8m x 9.6m, 64 x ROE Visual CB 5.77mm LED panels

Stage Right LED Video

1 x 4.8m x 9.6m, 64 x ROE Visual CB 5.77mm LED panels

Riser LED Video

3 x 3.6m x 1.2m, 18 x ROE Visual CB 5.77mm LED panels

LED Drive

3 x Brompton SX40 racks, 12 x Brompton Tessera XD

Touring: disguise GX2c media servers

Camera Package

1 x Novatech OneSystem Constellation Rack. 1 x CCU Rack. 3 x Blackmagic URSA Broadcast G2 camera package

Touring: Canon UHD 90 4k

Ed Sheeran's + - = ÷ x Tour is rolling into NZ and AU!



As this magazine goes out digitally on Feb 1, the phenomenon that is Ed Sheeran's + - = ÷ x Tour (pronounced 'The Mathematics Tour') will have rolled into Wellington, with Ed poised to strum his first chord on Feb 2. By the time the printed edition hits most people's mailboxes, Ed will be in Brisbane for the show on the 17th.

All production, including the innovative mast and cable net rigging system to enable the in-the-round set-up, and the astonishing 212 elements of Meyer Sound PANTHER line array, are touring with the show. Ed looks likely to smash the record he set for ticket sales on an Aust/NZ tour back in 2018.

Both Meyer Sound and MA Lighting are using the mammoth tour to showcase the tech they have employed on the gig. CX will be dropping in on the Melbourne leg in early March to talk to the production staff and produce a full write-up and review of the gear for the April edition.

Ahead of the tour heading our way, we spoke to Production Director/FoH and Monitor Engineer Chris Marsh and PA system engineer Charlie Albin, both touring with PA provider Major Tom, about their use of PANTHER on the tour. One of the things that intrigued us most, having not actually heard PANTHER yet, is its strong environmental credentials.

Apart from the superior sonic qualities and serious output, much is being made of PANTHER's lighter power consumption and carbon footprint. "While it's not been possible to accurately credit the reduction in power consumption to the new PA solely (as all technologies have improved since the Divide Tour), overall, we have reduced our power consumption by a third despite an increase in products being used for an in the round show, which is amazing," said Chris Marsh. "We are now using the same power specifications for the PA that we did on the previous tour despite there being a significant increase in the amount of loudspeakers."

Carbon emissions, power consumption, and environmental impact are beginning to appear as actual line items on production budgets on events and tours worldwide. European production companies like Major Tom are at the forefront of these new considerations and working practices.

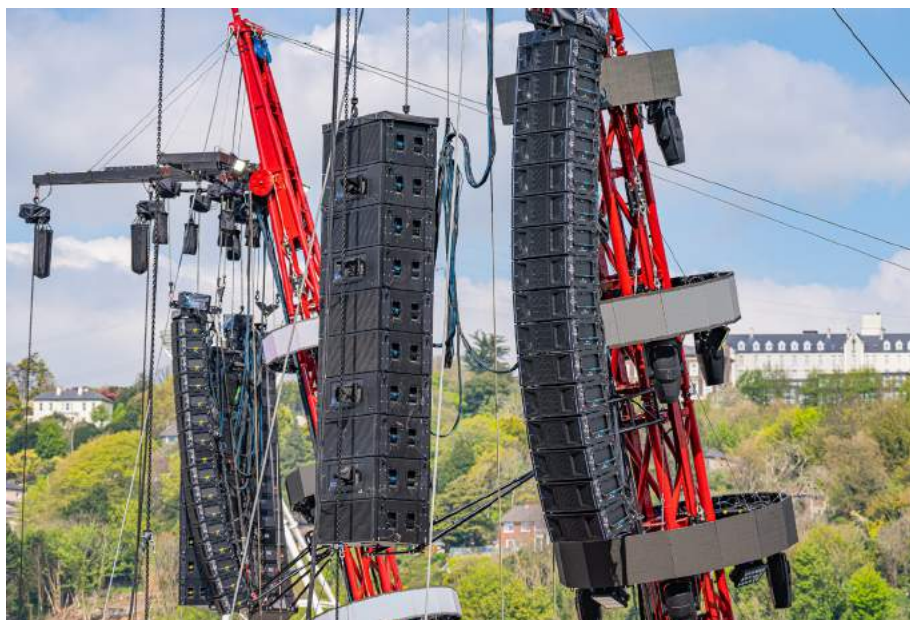
"Our aim on this tour is to work hard on reducing our carbon footprint in real time with actual data, and report on where we have succeeded and where we have struggled," relates Chris. "I feel that this is the only way that the industry can actually move towards more sustainable touring rather than greenwashing. The great news with PANTHER is that what is printed on the data sheet really is making a difference in the real world. But it is also the factors that are not on the data sheet that are making massive differences: the reduction in the amount of cabling required and smaller, lighter, and more powerful speakers that do not require additional amp racks thus reducing truck space required, are two obvious examples."

"Sustainability is finally becoming a concern for most of the organisations we work with and heading towards a net zero tour is on all of our minds," continues Chris. "I am mindful not to suggest that environmental impact



is at the heart of the design as I feel that creatives should be able to freely deliver their art without those restrictions. It is the task of the production teams, the suppliers, and manufacturers to develop the solutions that will result in more efficient shows. Every effort helps and whilst we have a long way to go, we are already making great progress with the addition of PANTHER to our inventory."

Compared to other products (Meyer Sound or otherwise), how much does the reduced weight and power consumption of PANTHER contribute to the overall efficiency and environmental impact of the show? "In the case of the PA hanging from the tensioned steel cables around stage, PANTHER offers a unique solution; no other product on the market offers the same power to weight ratio and linearity," explains Charlie Albin. "In the broader landscape, PANTHER's reduced size and weight allow for fewer trucks or sea-containers, using less fuel per journey. Extrapolate this over several years of a global tour and you have a direct and significant impact to environment and cost. The same is true of the speakers' power efficiency; fewer generators burning less fuel is a win-win situation."





West Stand

KICKING GOALS AT COOPERS STADIUM with D&B

The FIFA Women's World Cup 2023 is coming to Australia, and Adelaide's own Coopers Stadium will proudly be playing host to five of its games.

For Coopers Stadium, this meant a substantial upgrade would be imminent; think brand new LED action replay screens, new grandstand cover, corporate rooms, and a significant upgrade to the audio system.

For Adelaide-based audiovisual production and installation company AJS, this meant the opportunity for a local business to secure the tender to not only meet FIFA's incredibly

stringent technical criteria, but to raise the bar beyond said spec, whilst delivering on-budget and on-time, with zero compromise in quality and service. It was settled. Coopers Stadium would be receiving an audio facelift like it had never seen and AJS would be taking the reigns.

The Challenge

The magnitude of the challenges faced by AJS Managing Director Andrew Gayler and his team were rapidly becoming apparent as they prepared their gameplan for tender submission. Overcoming anticipated hurdles such as consumption of substantial capital and competing with the global market for demand from d&b and the likes was manageable and would be put in place upon awarding of tender.



New LED Screen on North Stand

Strong relationships with suppliers including NAS and TAG, plus extensive experience and knowledge of the product lines selected for the job would facilitate a relatively easy run. However, AJS was to encounter its biggest challenge when it came down to the physical aspect of install - working out where to hang equipment on the stadium structure.

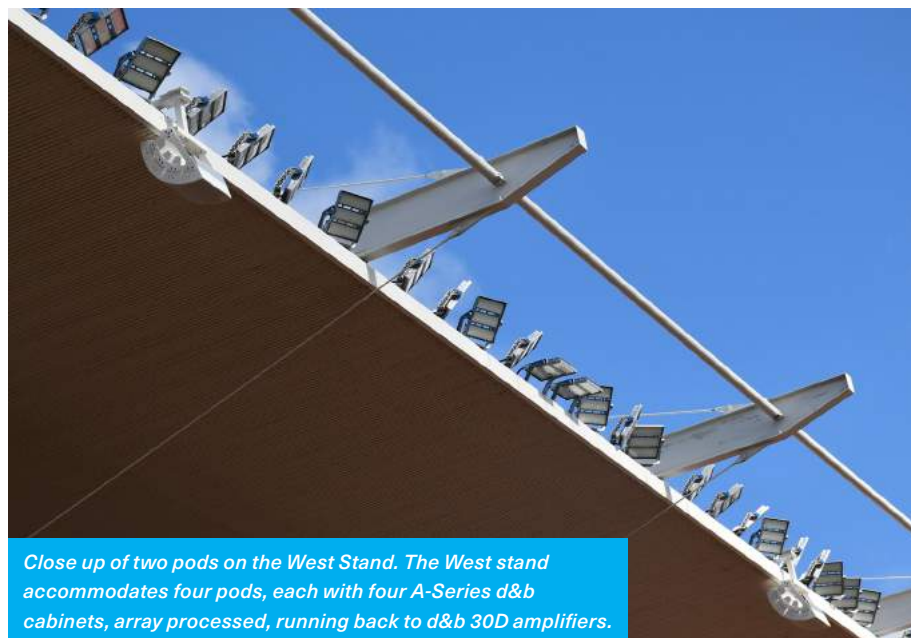
"The extent of the amount of works didn't become apparent until we got well into the job, specifically not only was design of the mounting brackets required, but we had to engineer where we mounted to the stadium," explains Gayler. "The biggest issue was there was nowhere to hang anything at all. And part of the scope, which was the challenging part, was that problem was our problem."

Previously, one vertical column of Bose Panaray was employed to service the entire stadium. Safe to say, no consideration for future PA systems was made in the original build of the stadium.

An expert programmer with extensive experience using Q-SYS and a vast amount of knowledge of and experience with the d&b audiotechnik product line, Gayler got the ball rolling: "I had a fair idea of what I thought product-wise would be suitable but

I got in touch with Doug at Australian d&b audiotechnik distributor NAS and said 'hey, this is what we've got, this is what I think, you have a look at it and send it off to the experts at d&b in Germany'. They came back very quickly with a full ArrayCalc design. When we looked at it, we saw that it was a little bit easier to achieve than the initial design because the biggest issue was there was nowhere to put anything, at all", Gayler recalls, referring to the distressingly severe lack of apparent hanging points.

Technical drawings of the building were not available or even in existence anymore due to its age and minimal upgrades done to the facility over time. Peeling off the roof and having a good look at what the team were dealing with in terms of potential hanging solutions was the only viable option. AJS' Tim Bekker, Senior Sales Consultant for AJS, along with the contracted engineer and the venue's engineer liaised and concluded the building's existing purlins would be sufficient to take the load.



Close up of two pods on the West Stand. The West stand accommodates four pods, each with four A-Series d&b cabinets, array processed, running back to d&b 30D amplifiers.



Tim at East Stand with a pod of three array processed, A-Series d&b cabinets.

The Process

"Don't be focused on price, be very focused on getting us the best technical outcome that you can get." This was the recommendation from client Adelaide Venue Management Corporation, who manage Coopers Stadium.

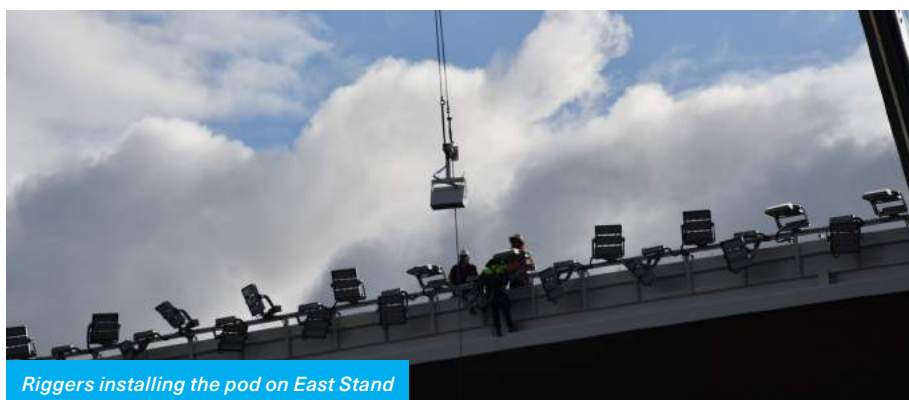
Upon being awarded tender, Gayler immediately rang NAS back "...and ordered everything. The control system and back end is Q-SYS, we ordered all the stuff".

Despite FIFA not requiring the facility until July 2023, there was a client-imposed hard deadline of 30 October 2022 fast approaching - the first home game of the season for Adelaide United FC against Perth Glory FC. This, however, did not faze Gayler and the AJS team. Tim Bekker and the engineers were nose down putting final touches on the design of mounting brackets and the equipment side of the operation was proceeding full steam ahead.

Mounting brackets were a design by Bekker (Senior Sales Consultant by title, AJS hero of the project by acclaim), engineered by Able Engineering Melbourne and fabricated and installed by Sonnex – an Adelaide-based metal fabrication company who came to the party and delivered on their promise of product fabrication and installation within an impossible two-week timeframe. It certainly takes a village, but this PA was going to be raised, and it would be what client Adelaide Venue Management Corp., Coopers Stadium and FIFA could dream of, and more.

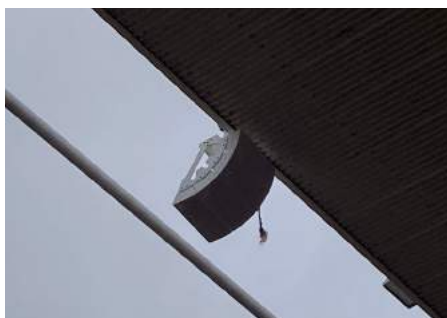


Crane positioning pod over East Stand



Riggers installing the pod on East Stand

The level of support AJS received from NAS Solutions and d&b audiotechnik itself crowned them primary supplier for this project. "We pushed for very tight turnaround times to meet the tender requirements and we knew they were under an enormous amount of workload, because there's so many projects going on around the world, but they facilitated us. From the design, with only a few minor tweaks of the physical layout of the cabinets, we were able to use that to then deploy to the amplifiers to give us a working system in a very rapid amount of time...and we also can't thank Sonnex enough for their level of ability."



The System

The d&b A-Series was AJS' pick for audio system, providing intelligibility and clarity beyond expectations through its implementation of "augmented array" and a newly developed acoustic refinement approach dubbed "Midrange Directivity Control". Q-SYS would be Gayler's weapon of choice for distribution and control, having worked with the system extensively throughout his career.

It was now time to put the pieces together. In its final state, Adelaide's Coopers Stadium now houses the following:

The West stand accommodates four pods, each with four A-Series d&b cabinets, array processed, running back to d&b 30D amplifiers.

The East stand, showcasing a new cover for the existing grandstand, features six pods,

each with three A-Series d&b cabinets, also array processed.

The North and South stands are equipped with V7P d&b point source speakers, running back to d&b 40D amplifiers. The V7Ps extend from the back of the grandstand on 6.5m masts, bolted directly to the concrete wall.

The newly built Corporate Boxes feature 14 d&b 8S point source speakers, covering the area under the balcony to the corporate boxes on the West stand.

End result is four amp racks - North, South, East and West. All employ d&b amplifiers, driven by Q-SYS system. A pair of Q-SYS Core 110Fs remain in redundant mode, taking over running the system should there be any failure. A redundant Local Area Network (LAN) is also in place in case one network fails, the other continues to run the system.

Gayler adopts a "less is more" philosophy, heading the system with an A&H SQ5 which

communicates to other peripherals using Dante. A touch screen is accessed in the Level 6 Operations Box featuring an amplifier on/off button, as well as a button to alter levels and save presets for each zone design, including the corporate boxes.

Delay and gain structure are managed through the amplifiers. "We have to set everything in ArrayCalc in R1, we thought let's set all the delays and all the gain structure through there. This gives the system operator a system set at unity gain at equal volume level in every area."

Fully aware that no system is immune to potential failure, AJS has created a notification pop-up system on the main menu of the Q-SYS, immediately identifying what's failing and where. An email alert is also issued. As each amp rack has its backup amp, the system automatically sends feed to the functioning amp, requiring only the swapping over of a speaker lead.



The End Result

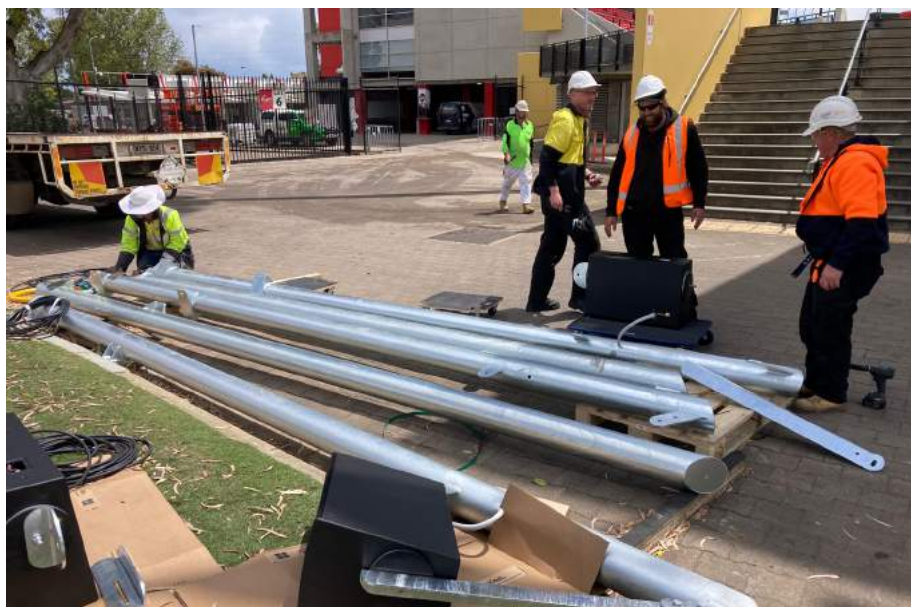
Judgement day arrives. October 30, 2022, Adelaide United versus Perth Glory at Adelaide's Coopers Stadium.

"We don't have experience doing stadiums, but we certainly have a lot of experience doing distributed audio and control systems", states Gayler confidently about his team's accomplishment.

So, apart from being visually overwhelmed by the d&b boxes distributed around the stadium (remember, one Bose column?), what did key representatives of client Adelaide Venue Management Corporation think?

Crisp.

When this is the first word that comes to mind for the layman to describe an audio experience you and your team have created, you know you have achieved your goal. So simple, yet it effectively defines the precise vocal clarity attendees at any sporting match will now experience at Coopers Stadium through their d&b audiotechnik PA system, proudly designed and installed by AJS of Adelaide.





IVAN ORDENES

Immersive Audio and the KLANG IEM system

When Rod Stewart appeared at Wembley Stadium in June 1995, he was backed by a 14-piece band and a 22-piece orchestra. But while most major artists of this era performed amid a jumble of cables and foldback monitors, there was not a single monitor speaker on the stage. This was the first European tour by a major artist to provide all performers with wireless In-Ear Monitoring. Now, almost 30 years later, IEMs have become a ubiquitous component in stage shows around the world. Three decades have provided ample time for the concept to mature, but until recently it seemed innovation in the technology had plateaued, with a plethora of capable systems available from major brands.

Enter KLANG:technologies, a Germany manufacturer approaching the concept from a different angle, or should we say, different angles, as KLANG is the world's first 3D in-ear monitor mixing technology.

KLANG

Employing 3D binaural processing techniques, KLANG is an ecosystem of audio processing systems enabling virtual spatial separation of inputs within an in-ear mix. Using multifarious

psycho-acoustic magic, KLANG can trick the IEM user's ears and brains into 'hearing' instruments and inputs positioned across a three-dimensional soundstage. This offers the user 360° pan position possibilities, as well as the convincing illusion of height and distance. These new dimensions allow for better perceived separation of elements in a live mix, ultimately leading to a better performance.

There are several hardware processors available in the range, all of them IP networked

for easy integration and accessibility.

The current flagship of the range is the KLANG:konductor, a rack-mount style system offering processing of 128 input signals at up to 96kHz, with a lightning-fast processing latency of less than 0.25ms. The KLANG control software can be accessed via phone, tablet, or PC, allowing each performer to control their own personal 3D mix via one of these interfaces.

Real World Advantages

Ivan Ordenes is one of many pro audio veterans making regular use of KLANG in the field. The founder of Dubology Studios, Ivan has mixed for the likes of Coldplay, Simply Red, Pete Murray, Guy Sebastian, Grinspoon and an abundance of others. An experienced FoH and Monitor engineer, Ivan was an early adopter of the KLANG ecosystem and has been using it to drive IEMs on recent shows with the illustrious Jessica Mauboy.

"I have been the sole tech for Jessica Mauboy on the road, for the greater part of the past seven years," explains Ivan, "and in 2019, when I saw KLANG demo-ed at DiGiCo's NAMM booth, I thought to myself, 'that looks radical - immersive in-ear monitoring!' I knew I definitely wanted to use it with Jessica."

Throughout previous years as a live tech for Jessica, particular scenarios would result

in Ivan "getting stretched way beyond [his] capabilities," even when working with a dedicated monitor engineer.

"Jessica would keep on turning to me at FoH and say, 'Hey can we do this or that in my ears?' So, a few times I had to take over mixing her in-ear mixes from FoH, while the monitor engineer looked after the rest of the band. That was neither efficient nor sustainable. So when Jessica launched 'The Boss Lady' tour we decided that whilst we had the technical company of a crew, and particularly, a very experienced monitor engineer, this was the perfect scenario to take KLANG on the road."

Ivan did his research and due diligence to end up with some KLANG demo hardware from Group Technologies. Further testing at pre-tour rehearsals saw Jessica, the band and Ivan all signing off on doing more with KLANG. According to Ivan, the crew immediately discovered that a key benefit in using KLANG

over traditional IEM feeds was hearing protection.

"KLANG have this fantastic feature called the group mixer that allows all the users, as they control their mixes, to click up and down the levels of the groups that they need. If I create a guitar group and click that up, everything else goes down proportionally. It keeps a very constant SPL in the ears."

That consistent level not only reduces wearer fatigue but helps to keep the user's ears safe. "People forget that with in-ears, it's a lot more harmful, potentially, than stage monitoring" notes Ivan. "All it takes is one little mistake and it could be very detrimental for that person's hearing. So, that's the first thing I liked about KLANG. The fact that it uses this 3D in-ear processing is sensational, but it also regulates the levels very, very well."



"As an old-schooler, the first thing I had to do was to learn the basics of IP management and network control, to make sure that KLANG integrates well with the console."

A Monitor Engineer's Assistant

There has been some noise in the pro audio community about a system like KLANG being a job threat, but Ivan helps clarify why monitor engineers won't be going anywhere anytime soon: "KLANG is not a monitor engineer replacement at all. On the contrary, it's a great monitor engineer's assistant. Think of it like a virtual assistant for those gigs where you have a very important front person. KLANG allows the engineer to focus on the 'main character' at the front of the stage, while the band or orchestra has immediate access to their own mix without having to wait for the engineer's attention."

Console Integration And Control

KLANG is compatible with digital mixing consoles supporting either ADAT, Optical, DANTE, AES67, MADI or Optocore, with DiGiCo's Quantum/SD ranges possessing additional workflow integrations such as access to the KLANG UI directly from the console surface. Like many modern pro audio devices, KLANG is reliant on a solid IP connection, linking KLANG processors to both mixing console and UIs.

"Our workflow these days, relies first and foremost on a Wi-Fi router. Knowledge of network and IP is starting to become very necessary these days for sound engineers. Whether we like it or not. As an old-schooler, the first thing I had to do was to learn the basics of IP management and network control, to make sure that KLANG integrates well with the console," explains Ivan.

"But it was worth it. Jessica Mauboy and the band feel like they have a real advantage in the field, and my job is made easier at the same time. The KLANG:App is so effective and the available features are very powerful."

Having downloaded a copy to test this myself, I concur. With KLANG hardware being highly capable, it's encouraging to see the UI equally so.

Apart from the obvious 3D positioning in the ears, it has a very simple, intuitive yet powerful interface. The demo track highlights all of this and particularly illustrates how good the



aural separation of inputs is when using the immersive 3D mode. Switching between that and stereo mode shows how much dimension and clarity is added to the mix.

I can easily see how this would be a game changer for a wide gamut of performers.

The layout and format of the app makes the whole system easy to understand and use.

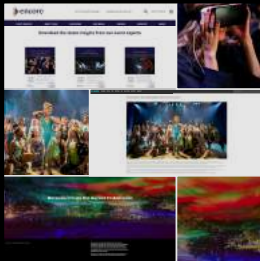
One could say it's child's play. Ivan relates: "The other day, my 8-year-old nephew saw something on TikTok, where the guy was panning left and right within his ears. My nephew asked me, 'How does that happen?' and I explained to him what panning means, then downloaded the KLANG app for him and

he now plays with that every day. Another sound engineer in the making!"

The Future Is Here

Foldback wedges are likely to be around for some time yet. Purely due to budget – up front cost for venues, and the cost of custom in-ears to musicians means that wedges will continue to be an industry staple. But for medium to larger acts, orchestras and installations, in-ears are a good choice, and when coupled with immersive 3D processing from the likes of KLANG, an even better choice. More clarity, better sonic separation, less fatigue and easy usability – what's not to like?

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RELIABLE EVERYTHING

START WITH YOURSELF!

Reliable am I, it's hard wired into my mind and I'm glad of it. Celebrating 50 years since I first registered a business name in 1973, I reflect on the curveball failures and the measures taken to avoid them.

Today I have a side hustle, a small production business that typically comes in a van. Using a digital rack mount mixing system with an iPad for control, I thought I had everything covered, carrying a spare (smaller) analogue mixer and running a UPS so power failure didn't crash the mix engine or the Wi-Fi router.

Until the iPad went on the fritz, and the spare iPad wasn't set up, fresh out of the box. No problem I thought as I reached for my laptop loaded with Mix Station, and realised I didn't have the Ethernet dongle. Still no problem but slightly a problem, I thought, as I accessed the mix engine, an Allen & Heath Qu Series, via its front panel screen and controls. I'd chosen it for the ability to use it stand-alone like this, without an iPad. But it soon became very difficult dealing with five monitor sends.

That debacle won't happen again; the Ethernet dongle is now velcro'ed into the rack, and there are now two identical iPads, and a backup Wi-Fi box as well. My powered speaker system has one spare box 'just in case'. In my larger 'active' 3 way system, I have a spare amp and a processor.

I think now I am ready for anything, except ambient temperatures over 35 degrees C. Every electronic thing I have seems to have a 35C limit, and we all know it gets way hotter than that some days.

Dealing with heat has become more critical since we now use so many devices. Wireless microphones can overheat at less than 35C if, for example, they are not set for the relevant rechargeable battery installed. Some plug packs seem to be more sensitive to heat than others. It's worth having spares that are kept somewhere cool.

Colleagues report using ice packs and cooler bags, leaving keyboards in air-conditioned dressing rooms until on-stage time, fans, and even portable air conditioners. Powered speakers are often unable to be shaded from the sun. Rarely, but it can happen, things start to melt.

I still see the mortal sins of power occasionally: power cables coiled up, or connectors on the ground, not taped up. I always get all power connections off the ground outdoors, often bagged in plastic.

What if the van fails to proceed? I had a simple policy when I started in the 1970s; always get to the gig, even if a tow truck or tilt tray is required. Doesn't matter if that costs more than you earn, because letting people down will cost you way more in the long term.

Back in the double and triple 4-way PA touring days, I went from a 2 ton truck, to 4 ton, then 5 ton, ending at 8 tons in just 4 years. Watching others go to 3 axle 12 tonners, I figured it was time to get off the road.

Starting with a single 4-way PA, I worried about the sole mixing console, hearing tales of power supply failures and worse. Getting a monitor console meant I had a fallback if one failed. Likewise going stereo meant I could lose a crossover, and it did happen one night. A spare amp was always in a rack, as they weren't very reliable in the 1980s.

I never worried too much about the lighting desk. A show could go on with static lighting. I'm trying to remember any catastrophic failures on my watch and I can't, because they never happened. I had some 'near misses' with trucks, usually when I dozed off at the wheel and the several times it happened, I woke in time to save myself.

Equipment does fail, and usually when you least expect it. I remember a colleague whose production Co. purchased a job lot of brand new third octave equalisers (the expensive ones) which all started to emit spurious, horrible noises into the eight foldback sends. Turns out they had a common faulty component. An international band was on stage at the time. That really messed up a reputation, and honestly that could happen to anyone.

Another horrible story: a fresh new system, just put together, goes into massive ground hum when set up at the first venue on a tour. Turns out the inexperienced kid soldering up the mic leads connected Pin 1 to the XLR shell. Every cable. That is the stuff of nightmares.

Always build then test properly, workshop the procedures, have situational talks or 'what ifs?' with your crew. We often have plenty of idle time so use it wisely.

Sometimes it's crazy stuff that karks; an electric guitar goes open circuit, or a backline amp dies. One time the band came on and at the exact count of four, the keyboard power plug started to arc, sending massive blurts through the PA. Easy to spot and mute when you see the keyboard channel clipping, but still a show-stopper until fixed.

A common problem is power failure, either overload or earth leakage breaker related. Ask yourself, what has changed since we set up? Often it is someone plugging something unknown onto one of your circuits. Caterers and DJs are often the offenders.

I hope you never have any of these things happen to you.



Julius at top left, setting up for an outdoor Saints concert. Stacks didn't get strapped down in 1982. Photo by Bob King.

Why spending more initially can cost you less in the long run...

In lighting, as with anything else, we have cheap gear, middling quality, and the primo stuff. A lot of you readers have been in this game long enough to tell the difference, and some of that experience has been earned quite painfully through poor experiences with cheaper gear.

It can be a bit harder to pick out the quality differences in pixel lighting. I should clarify that I'm not talking about pixel bars here; these are similar enough to LED bars that you probably already know what to look out for. What I'm referring to is lighting fixtures such as dots or pixel strips. They may not be your bread and butter, but may come up on a few jobs, so why not learn about them and add some more knowledge to your skillset?

When dealing with pixel strip lighting, you're bombarded with different options. On the one hand you have really cheap options available through bulk online markets and auction sites. On the other hand, you have more costly options from established international suppliers like ENTTEC.

Putting them side by side you would almost be forgiven for thinking they are interchangeable ... almost!

The width is about the same; they are both 12V, I can see a similar control chip on both, datasheets both report a similar output ... so what is the difference here? Why wouldn't I just go for the cheaper one and pocket the difference? Well, there are a number of things to seriously consider.

First off, the thickness of the copper strip it's made from. This is not something that is apparent when simply comparing pictures and datasheets, but it is noticeable when you have the product in your hands in front of you. Cheap pixel strip is made using thin copper to keep costs down. Not only does this mean the strip is less robust, a thinner strip of copper is also less conductive, therefore voltage will drop off faster, meaning more power injections and more wiring for your project. So what you save in material cost you may well lose in additional power supplies and labour.

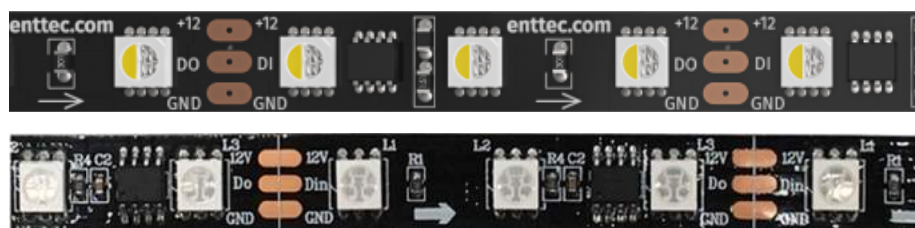
Next, while not a feature of the product itself, comes something you all know to be quite critical: support. One of the major reasons that many manufacturers manage to stay cheap is by not offering any product support. So, if you run into trouble, you're not going to have anyone to call up and ask why your tape is flickering, or why it's not turning on at all. You won't have someone to help you with specifying controllers or to walk you through how to configure yours. Saving a few bucks on a product becomes a false economy when you're forced to spend hours learning, troubleshooting and installing all by yourself. Likewise, you're not going to see much warranty support either.

Lastly, although there's plenty more that we're leaving out, is trust and reputation. Many segments of the lighting industry are regulated. Peak bodies like the IES put out standards that manufacturers must adhere to. If a decoder is compliant with DMX512, you can be sure that it will respond to a DMX signal from any DMX source you care to provide. However, things are a bit muggier with pixel lighting.

When controlling pixels, you want to make sure the protocol of your pixel strip is supported by your controller. This 'protocol' is essentially just a model of control chip released by a manufacturer. For example, the WS protocols come from WorldSemi. Since pixel lighting is not standardised, there is nothing stopping a manufacturer from creating a new variant of their chip, and then publishing it as the same 'protocol' as before. And when this is done, there is no way to distinguish between a 2018 version chip or a 2019 chip, since they'll both say they're WS_ or SK_ etc.

As you can guess, this can create all sorts of havoc, including LEDs flickering or otherwise not responding properly. If this is a hobby installation in your rumpus room, you might not care so much, but if this is part of a larger lighting rig in a theatre or studio where hundreds or even thousands of people might be watching, it becomes a lot more important.

So, this is when you turn to the premium pixel strip. Not only are you buying a better product, but you're also buying reputation and peace of mind. You're getting exactly what's on the datasheet, and you have someone to talk to if you're stuck.



What about with pixel dots?

With pixel dots the quality difference can be even more drastic, though less visible. When looking into quoting up a pixel project involving dots, you're again bombarded with options from bulk online sellers, and doing a simple search for "Pixel dots" can yield pages upon pages of results. (Pictured)

The prices seem remarkably low too; you'll even find options listed for under \$1 each! When you compare this against higher-end options which may be somewhere between \$15-\$20 each, it can be hard to justify choosing the more expensive option. However, there are a few things you should keep in mind.

Firstly, the price you see on the website is often a ploy to get you interested and open a dialogue with the manufacturer in question. In our own 'experiment' we saw that while the price on the website was \$0.30, once you begin talking, you quickly find out that the website product is 'discontinued' or otherwise unavailable, so the actual quoted price came to \$6.50 per dot, for a 24V dot with 6 RGB LEDs on it. Still not bad value, right? Well, when you consider that it's \$6.50 USD per dot, you start to see the price difference narrow dramatically.

"That's fine!" you say. "Even after all this, it's still half the price!"

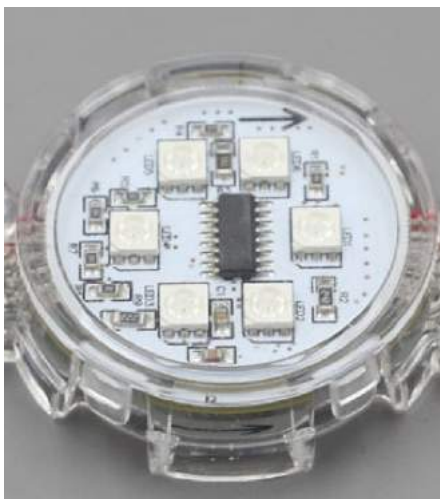
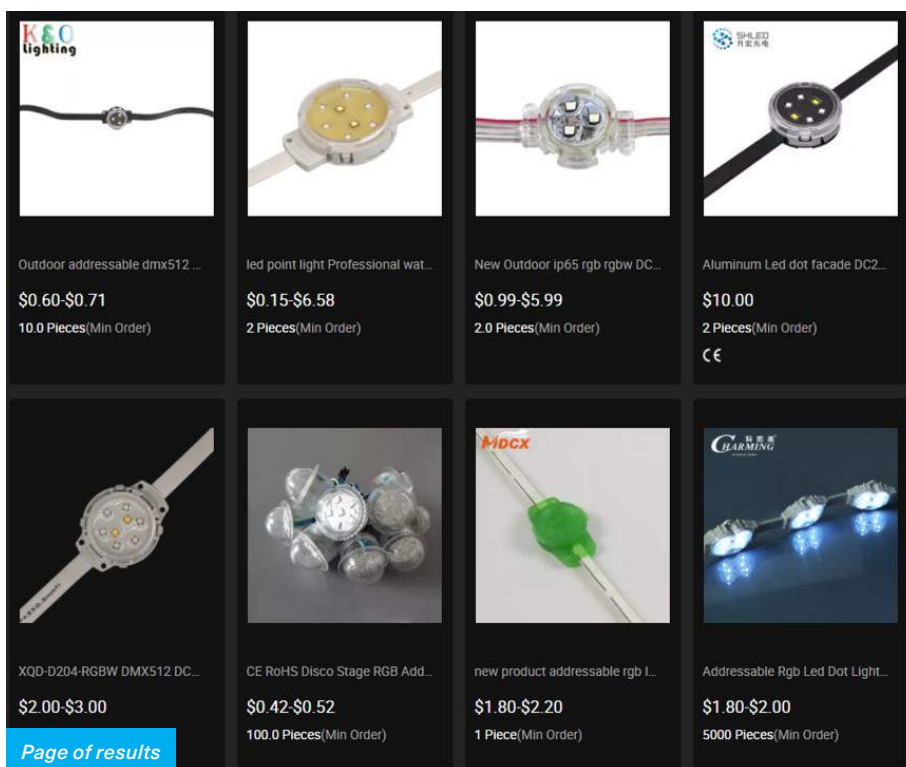
Well, let's get more scientific and compare the dot surfaces between a cheap, generic product and ENTTEC's Australian designed and made SMART PXL series.

Both have the components covered with a clear epoxy or PU resin to ensure they are waterproof. At ENTTEC, we are aware that certain polymers can degrade over time. In fact, a lot of resins will yellow with UV exposure when they have the sun beating down on them. Discoloured resin will of course skew the colour of your dots' light output. The ENTTEC dots, however, are made with a more expensive UV-resistant, optically clear polyurethane resin. This helps the product resist yellowing over time as well as keeping the resin somewhat flexible so it doesn't go brittle and crack from repeated thermal cycling over the years.

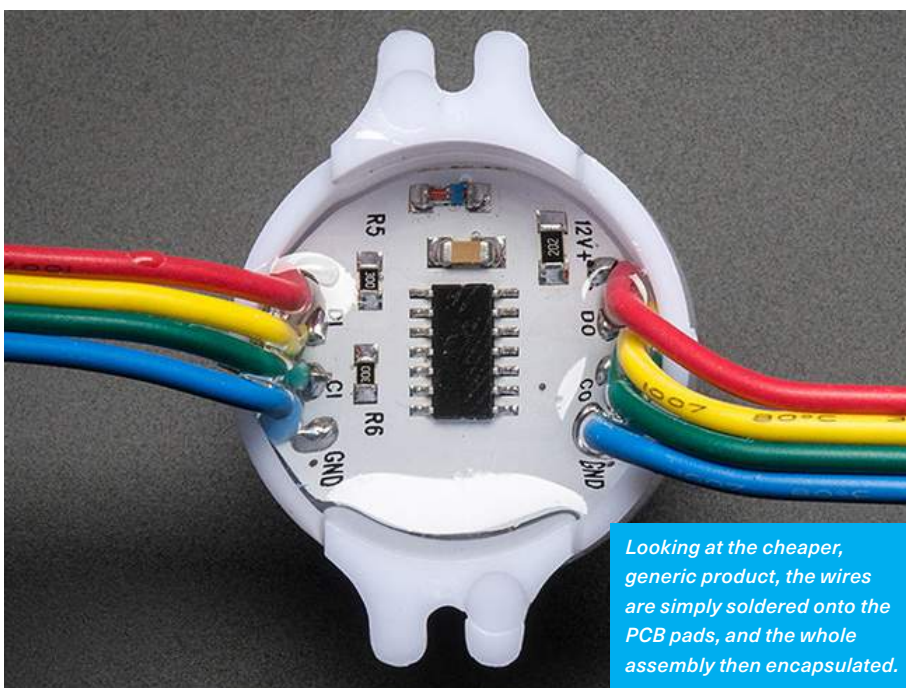
Let's look at how these dots are constructed. This isn't something you can generally see just by looking superficially at the dot but is something you can see once opening it up or dismantling it.

First let's look at a cheaper option:

What we can see here is that the wires are simply soldered onto the PCB pads, and the whole assembly then encapsulated. If you've done much soldering at all you'll know that even a good cable-pad solder joint is still relatively weak. Tension may not break the solder joint immediately but can easily pull the pad clean off the board. This is stabilised by the resin somewhat but is still a weaker joint that could more easily give way over time after temperature and load cycles.



Comparing a cheaper, generic product and ENTTEC's SMART PXL Series

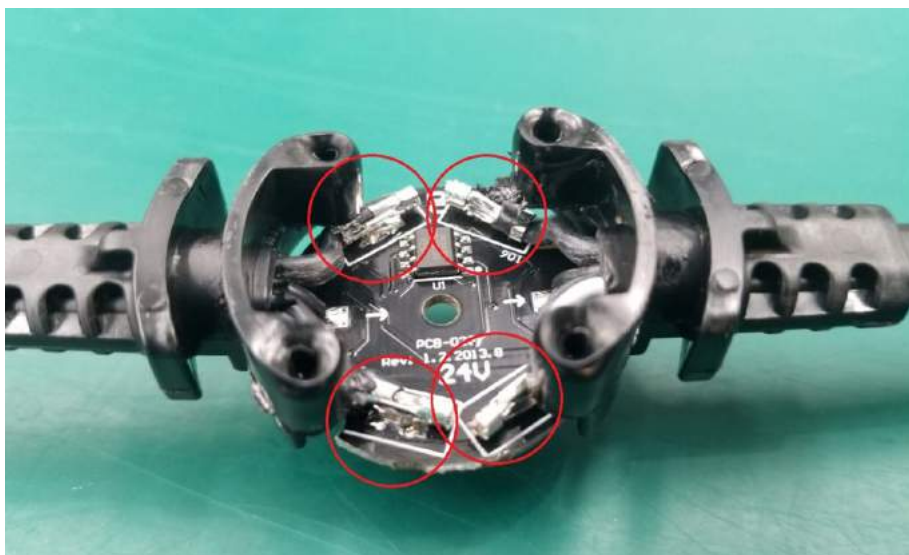


Looking at the cheaper, generic product, the wires are simply soldered onto the PCB pads, and the whole assembly then encapsulated.

Now let's have a look at how the ENTTEC dot differs.

Power connections – VCC and ground aren't simply soldered to a pad. Instead, the thick copper cable is crimped into a Molex crimp connector which has prongs that pierce through corresponding holes in the PCB. This makes for a sturdy mechanical connection even before solder is applied.

This is all then assembled into a robust outer case (made from either machined aluminium or UV-resistant injection-moulded PVC, depending upon the model in question), where the polymer over-mould fits snugly into a recess. Finally, the whole assembly is potted in UV-resistant, optically clear, PU resin. Strain on the cables whether it's from handling during installation, or cyclic strain from wind, is borne by the over-mould, spreading that strain across the solid body. The PU resin helps to absorb some of that as well, and finally the electrical connections feature a strong physical connection to the PCB. All of this ensures that you get a product that stands up to harsh conditions and keeps operating solidly throughout years of continuous operation.



That's a lot of engineering just for a pixel dot – so why is it necessary?

Well, in the long run, it makes more sense to opt for the primo product, because it means less maintenance. Yes, you could buy two sets of the cheaper dots for the same price, but then you also need to factor in the costs associated with maintenance/replacement. First, you have to partially or totally shut down the area, which could be difficult if it's a popular public outdoor area. Then you have to factor in labour and time to replace the strings, not to mention any specialised equipment like cherry pickers to get up into difficult places. Then of course there is the inconvenience and lost productivity – if you're stuck maintaining a job, that's one less opportunity you could be out on a new job.

Pixel lighting is growing in popularity and with that, we're seeing more and more options appear using different types of gear. It can be a bit difficult to spot meaningful differences sometimes, but we hope this rundown can give you some tips on what to look out for.



Artists perform during the G20 Summit Welcoming Dinner and Cultural Performance at the Garuda Wisnu Kencana (GWK) Cultural Park.

Congress delivers in Bali

The G20 Bali Summit was held in Nusa Dua, Bali, Indonesia, on the 15th-16th of November 2022 under the theme 'Recover Together, Recover Stronger'. The summit was joined by delegations from Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, the Republic of Korea, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.

It provided the opportunity for world leaders to meet in person and focus on this year's three key priorities: global health architecture, digital transformations, and sustainable energy transitions.

There isn't a much more demanding AV gig on the planet, and Congress Rental partners from Australia, Singapore, and Indonesia were on-site to handle anything this huge event could throw at them. It goes without saying that reliability is paramount when presidents, prime ministers and royalty are the customer.

The Solution

For the meeting, the client needed one fully integrated system to capture audio and video of the delegates, as well as provide 17 channels of simultaneous interpretation so that each delegate could participate in the meeting in their own language, using their own interpreters.

For microphones, Congress used Bosch DCNM-MMD2 Dcentis Multimedia devices equipped with conference-style, long microphone stems. This is Bosch's most premium conferencing system for delivering high-performance, secure, latency-free audio. They were also pre-programmed with a graphic to display the Indonesian presidency's G20 branding.

For cameras, Congress used Avonic CM70-IP-B PTZ Cameras. They are high-quality PTZ cameras known for their ability to deliver in low-light conditions with their user-adjustable colour matrix. They were pre-programmed according to the seating arrangements, and they automatically panned to the active speaker upon activating their microphone. The meeting was captured in Full HD 1080p60 video.

Interpreters worked in Congress's Audipack Silent 9300 Soundproof Interpreter Booths.

Having been in the interpretation business for over 20 years, Congress consider these the best you can get. They are fully ISO 4043:2016 compliant for proper sound insulation.

Inside the booths, interpreters worked using Bosch DCN-IDESK Interpreter Desks. These are reliable and intuitive. They conform to ISO 20109:2016, the internationally agreed standard for interpreting equipment and easily integrated with the event's microphones.

For leaders, the languages were provided through the conference microphone ISO 20108:2017, ensuring there was no possibility of feedback. A Bosch Integrus Infrared language distribution system distributed the language feeds to delegates. Audio was sent through the transmitter to truss-mounted radiators, which beamed a strong, secure infrared signal throughout the room. Delegates tuned in using lightweight receivers with headphones and with a button on the side

Sometimes it all gets too much...



The *Support Act Wellbeing Helpline* is a free, confidential counselling service that is available to anyone working in Australian music who needs to talk to someone about any aspect of their wellbeing.



THE SUPPORT ACT WELLBEING HELPLINE IS MADE POSSIBLE WITH THE SUPPORT OF:





Indonesia's Joko Widodo

could easily toggle between channels 0 to 17. A small card came along with each receiver to indicate their preferred language channel.

Besides the key equipment, various hardware and software integrated the system, managed cameras, queued microphones, and ensured clean, stable audio and video feeds.

With this setup, the delegates were able to communicate seamlessly in Indonesian, English, Russian, Hindi, Chinese, German, Spanish (ARG), Spanish (MEX), French (EU), French (FRA), Korean, Japanese, Arabic (SAU), Italian, Turkish, Khmer, and Arabic (UAE).

Setup

The main summit took place in the Candi Ballroom at The Apurva Kempinski Bali. To prepare for the setup, Congress studied the floorplans and created a custom schematic to ensure their cameras and microphones worked best in the client's desired placement. They also carefully considered the best places to truss mount the radiators to ensure 100% coverage, even when security from various countries brought in jamming equipment.

"We were able to begin running cable from the 31st of October and setting up equipment from the 3rd of November. Even though the summit was just the 15th-16th, most of our time was spent setting up and testing," said Paula Luciana, Event Producer for Congress Rental Indonesia.

Once all the cabling and equipment were set up, there were two days of rigorous technical checks to ensure the robustness of the setup.



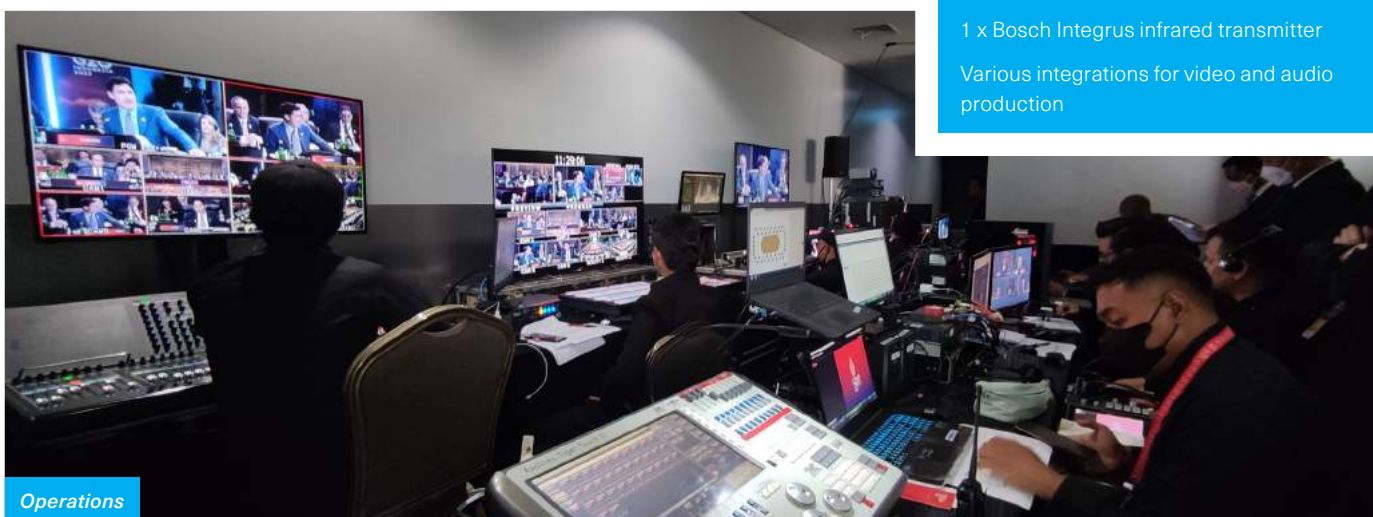
Bosch receivers and headphones for delegates to tune into 17 channels of simultaneous interpretation.

17 Audipack Silent 9300 Soundproof Interpreter Booths with 34 Bosch DCN-IDEK Interpreter Desks.



KEY GEAR

- 6 x Avonic CM70-IP-B PTZ Cameras
- 42 x Bosch DCNM-MMD2 Multimedia Conference Microphone Devices
- 17 x Audipack Silent 9300 ISO-Compliant Soundproof Interpreter Booths
- 34 x Bosch DCN-IDEK Interpreter Desks
- 160 x Bosch Integrus infrared receivers
- 8 x Bosch Integrus infrared radiators
- 1 x Bosch Integrus infrared transmitter
- Various integrations for video and audio production



Operations



The main room

Client's Concerns

The predominant concern from the client was that they got the highest quality equipment and audio. Congress supported many lead-up meetings including G20 Sherpa, Finance Ministers, and Central Bank Deputies, among others. During these meetings, the client was able to get to understand the performance of the equipment and experience the audio quality.

At one meeting early in the year, with two concurrent high-level sessions, one room was provided by Congress and the other by an

alternative supplier. The end client was able to see the stark contrast between the quality of equipment, audio quality and video quality, as well as the knowledge and capability of staff, such that delegates in the 2nd room questioned why they did not also get the same equipment as was in the Congress room. After comparing the alternatives, it was clear to decision makers who the preferred company was to support the leaders' summit.

"Over our years of experience in this industry, we have supported plenty of high-level meetings using similar setups. We know what works and doesn't, so we knew how to

create the most fitting system to meet G20 requirements," said Lucas Flood, Technical Producer at Congress Rental Australia.

The venue has large windows overlooking the beach. These windows let in a lot of light, and the client was worried that excessive light pollution would produce an overexposed visual output. Congress had initially planned to adjust their cameras to mitigate the problem, through prior on-site testing and checking, but in the end the client decided to shut all the windows with blinds. We therefore adjusted our cameras for a lower light setting. The final vision was clear and crisp.

Are you concerned about your mate's mental health?

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

Support those around you and register for free mental health training



¹Passion, Pride, Pitfalls Dec 2014

www.entertainmentassist.org.au

Supporting the mental health of Australian entertainment industry workers



Australian PM Anthony Albanese



China's Xi Jinping



France's Emmanuel Macron and USA's Jo Biden

Unique Challenges

With an event of this scale, the allocation and scheduling of equipment to be brought in started weeks out from event day. The required equipment was sourced from each of three warehouses in Indonesia, Singapore, and Australia, all while supporting other ongoing jobs. Bringing it into the venue was a slow build, with the first cables being laid 15 days before the summit.

The technical producers flew in from these three locations to support the event. The planning, although extensive, had to remain flexible enough to accommodate last-minute changes.

"We learned from the preliminary G20 meetings leading up to the leaders' summit that there were bound to be last-minute changes, so we expected them. When they came, we were prepared and had extra equipment on hand to fulfil any additional needs," said Azren Asbori, Technical Producer at Congress.

Complexity

In the ballroom, Congress provided 17 simultaneous language channels made for participating leaders, delegates and distributed to the press in the room. Each world leader and invited guest had a conference microphone to speak into and a PTZ camera nearby, pre-programmed to pan to the active speaker's microphone automatically.

President Volodymyr Zelensky of Ukraine called into the meeting via Webex and brought an English to Ukrainian interpreter who also joined virtually. To accommodate this, Congress added some hybrid integrations and an additional layer of language integration to the meeting.

Due to the venue's layout, the room with the interpreters and the equipment was two floors away from the main ballroom itself. Giving the interpreters' live audio and vision of the ballroom required extensive cabling and organisation.

Security

There is always a massive security overlay for a high-level event such as this one. This meant that movement and access to certain rooms were tightly controlled. Congress planned to be set up and ready days prior because they knew that the venue would be locked down two days before the event and wouldn't be able to make any additional changes to the setup.

Various countries also brought signal-jamming equipment, which can potentially interrupt the event. From experience with other high-level leaders' events, Congress had the skills to ensure their signals would remain uninterrupted.

How Congress Overcame Challenges

Congress had a team of trained technical producers from their Indonesian, Australian, and Singaporean offices for this job. Daily and direct communication was vital to integrating the teams.

There were also critical benefits to having teams from each region work together. It provided each other with unique perspectives and collaborative solutions to any issues that needed to be resolved.

"With all three teams working together, we can share knowledge, and everyone returns with something valuable after the job is finished. This internal learning elevates our standard and drives us further in this industry," said Azren Asbori.

"The diverse cultural backgrounds of our team, as well as our experience with event production in many different countries, gives us an edge," concluded Oliver Langbein, Technical Producer at Congress.

Congress Indonesia: www.congressrental.id
Congress Australia: www.congress.com.au
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Artists perform during the G20 Summit Welcoming Dinner and Cultural Performance at the Garuda Wisnu Kencana (GWK) Cultural Park.

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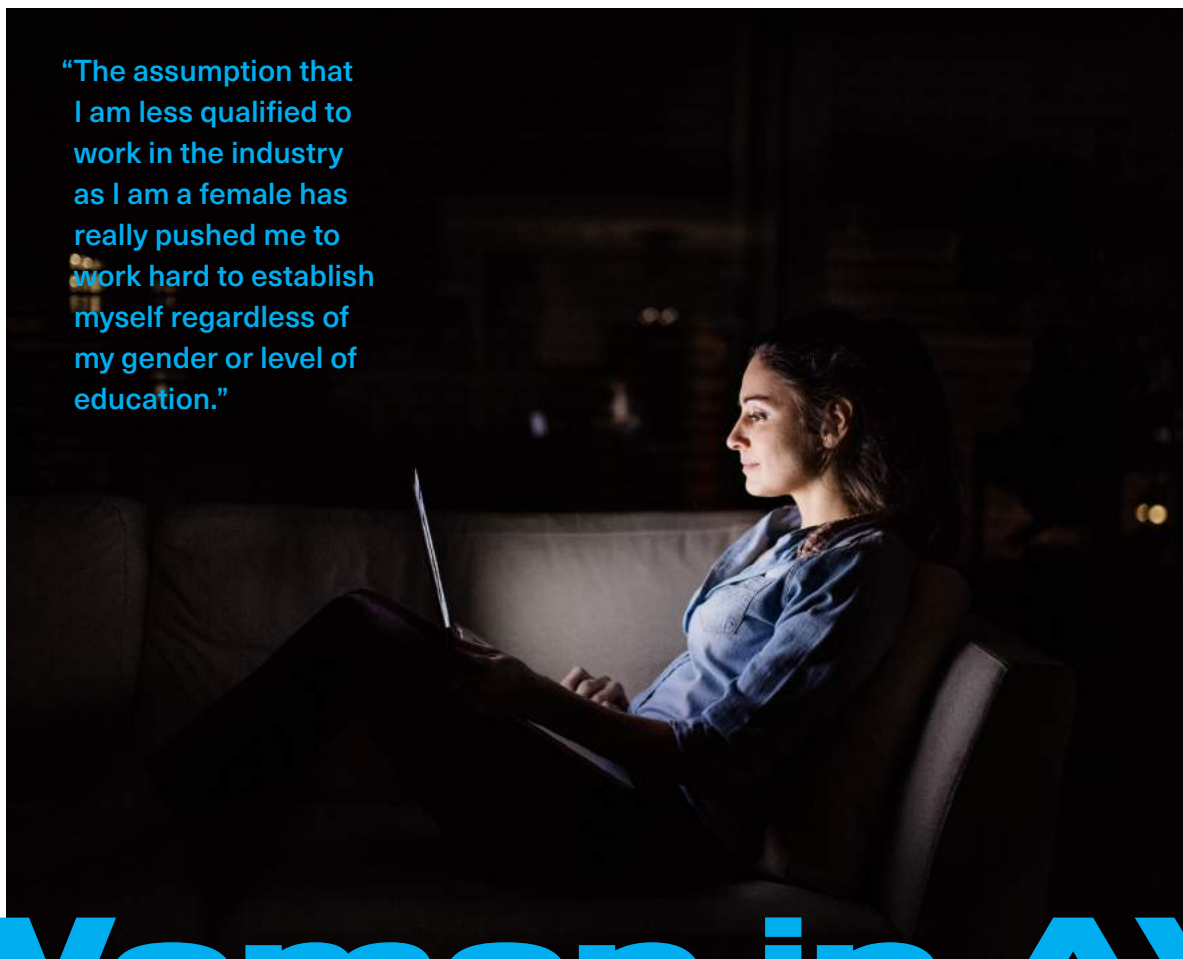
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"The assumption that I am less qualified to work in the industry as I am a female has really pushed me to work hard to establish myself regardless of my gender or level of education."



Women in AV

The pace of change in the world of work has been staggering in recent years, including the change towards equal treatment of the sexes in the workplace. The largely male-dominated AV industry is no exception, with a gradually increasing number of women entering more and more roles. How much has changed, though, and what more could be done?

A study by US-based group Women in AV (WAVE) in 2020 surveyed 504 females in the industry and found leadership, career advancement, and technical training as the top three areas of professional growth where they wanted more opportunities. However, this survey was conducted just before COVID-19 lockdowns started, causing a radical shift towards entirely digital events for the following two years. It created a great demand for AV professionals, which some women seem to have been able to take advantage of.

"Like many, I fell into AV; I left uni with a degree in Interdisciplinary Design (think The Apprentice only with a qualification at the end rather than investment). I headed to London

wanting a career in fashion, but it turned out it didn't pay well! So, I applied for roles in technology where the money seemed to be and took my first AV job at Micro-P (now Exertis)," said Vicki Goodlock, now a freelance AV marketing consultant, in an interview for Runtech. "I found something I enjoyed; I'm a little nerdy, so AV seemed to work for me. I moved around a few different roles within the industry before ending up back where I started doing marketing, which was a big part of my degree and where I found my passion."

Her story is not unusual. In fact, according to the 2020 study mentioned earlier, 67 per cent of women in the AV industry at the time said that they 'fell into it'. Indeed, Runtech even managed to find a similar tale among their own employees with Faye Patterson, an AV projects sales manager. "I fell into the AV industry after working as a project coordinator in a fire and security company. I was employed by a global digital marketing agency as project and operations coordinator to help set up their engineering department for their new AV division," she said.

"With no previous technical experience, I learnt so much from this role, which typically involved project managing from conception through to completion, preparing client proposals, and procurement. This was all with the help of an amazing female AV consultant who became a great mentor to me in my early career. After briefly stepping away from the industry, I was

employed by Runtech and it just went from there!"

While both of these women are undoubtedly a part of the AV industry, it is worth noting that their specialisations are in marketing and sales. The 2020 study found that 58 per cent of the women surveyed held non-technical positions similar to these. Technical roles are somewhat harder to fall into, with fewer of the skills being readily transferable or applicable to other industries.

For a somewhat more technical perspective, product designer Anam Henna Rashid from Dalen Limited said, in an interview for Top-Tec: "In a very male-dominated company, I would say that women are treated differently, but the personality of an individual has a huge effect on how this treatment manifests itself. Working in a team that is heavily focused on engineering and due to the skillset and experiences of individuals in the team, I have noticed that a lot of the important decisions being made are by the male gender."

In a 2022 study conducted by Avixa, women were found to represent only 9 per cent of AV professionals around the world, with most working in business support and marketing/sales. Only about 5 per cent of AV technicians surveyed were women. The common explanation is that their skill and knowledge in technical subjects is doubted.



"Sadly, I have had to experience adversity particularly when dealing with specific industries that are heavily male dominated," continued Faye Patterson. "The assumption that I am less qualified to work in the industry as I am a female has really pushed me to work hard to establish myself regardless of my gender or level of education. I completed the Women in AV (WAVE) mentoring programme in 2019, which helped me start building my network of other women within the industry. Anytime I am faced with challenges, I remind myself to be confident in my decisions and ability."

This advice is often mirrored by other women in the industry – the importance of building networks in order to advance in AV, as well as confidence in one's own abilities. "There are so many times when I have been encouraged

and cheered on by the industry," said Vicki Goodlock. "When I started on my own, I couldn't have been given more support than I did, by those I have met along the way, both male and female! I found many of my champions early on in my career, and they still have my back now. With the right support network, most situations can be overcome and knowing one's worth is very important."

It does seem that, while change is undoubtedly happening slowly, it is happening. Opportunities for training and career advancement were both among the most sought-after in 2020 and such opportunities are now being made available, at least in some areas of the industry.

Toni McAllister, founder of the Women in AV Australia group believes part of the problem comes down to AV having an image issue. "The AV industry is not well known as a career option by many school-aged or young people. It is difficult to attract more people, women and men, to an industry if no one knows about it. Graduate and training programs are a great pathway into the industry and should be embraced by as many organisations as possible to prepare our next generation of AV techs."

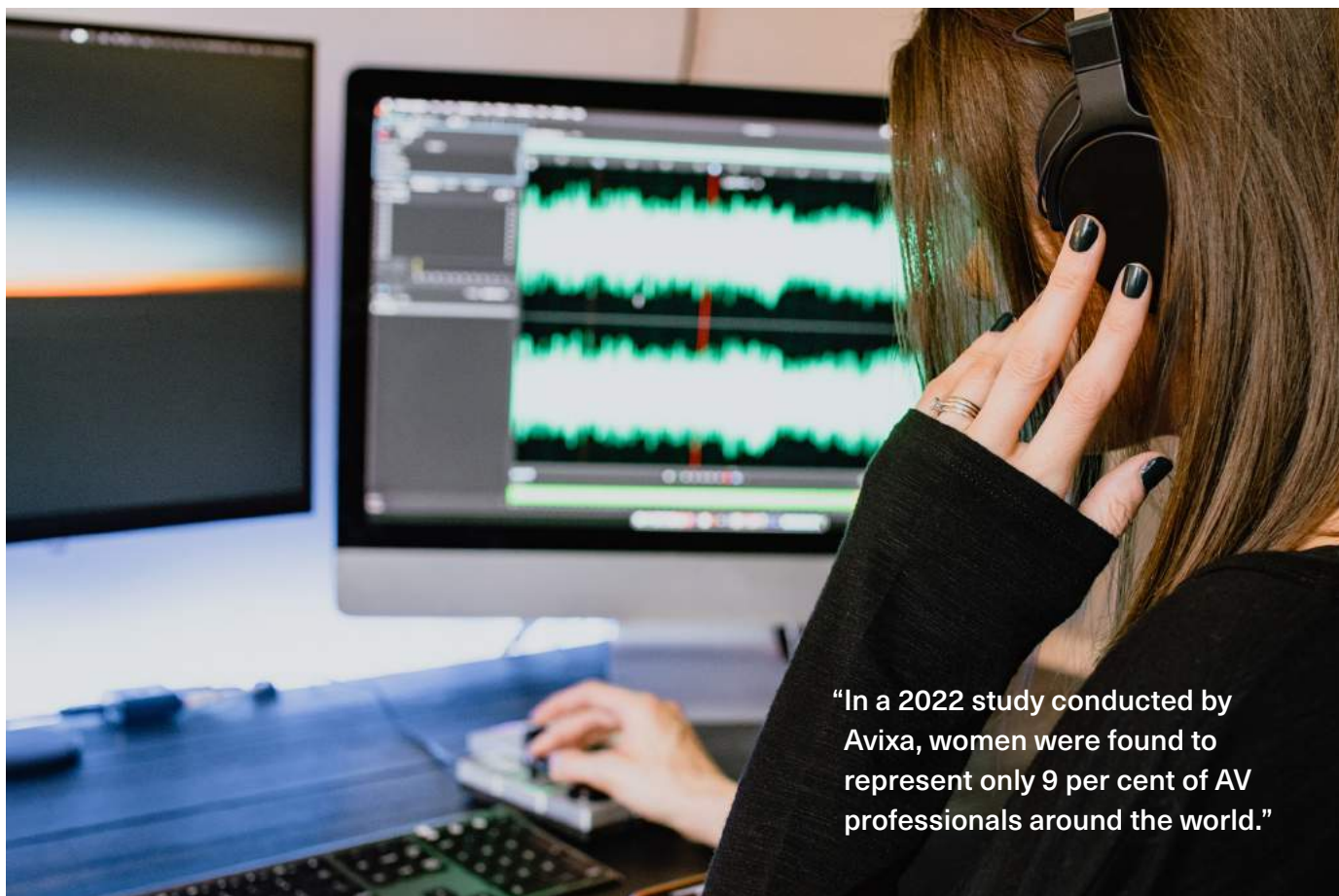
"Saying that, AV has had a moment over the past three years with virtual and hybrid events bringing the production side of events into the light. This may attract women to the industry going forward as it has exposed more people to the opportunities on offer. Now is the time for the industry to promote the versatility that AV offers and the convergence between live

events and digital technology to draw a wider range of people. Diversity brings many benefits across the board; therefore, the industry should facilitate this and encourage an inclusive culture and environment for all."

Anam Henna Rashid continued: "Our company offers equal opportunities for professional development to all members of staff. As a designer, I have been sent on many development courses to gain a better understanding of the software that we use. I have been encouraged to constantly develop my technical skills as this is something that is necessary within the workforce. This has enabled me to improve my skillset and given me a much better understanding of software and processes within my profession."

Sadly, one example cannot be said to represent the entire industry and the data the 2022 survey previously referenced does suggest that there is something of a glass ceiling for women in AV. No category of role had a lower percentage of women than senior leadership, with even technical roles coming a close second.

Avixa said: "If a leadership team is all men, how well can it recruit, welcome, and include women? If you are a woman planning your career, especially with ambitions of success and leadership, would an industry so empty of women in leadership appeal? Bringing women into senior positions is in businesses' interests as well, as academic research has found gender diverse management teams produce better returns."



"In a 2022 study conducted by Avixa, women were found to represent only 9 per cent of AV professionals around the world."

PIONEER XDJ-RX3

by Jimmy Den-Ouden



A long time ago, I played DJ sets on a pair of Technics portable CD players and a 4 channel Behringer mixer. I lugged them around along with a big roadcase of CDs, and wrote all the track lengths on stickers on the back of the jewel cases. That was how track analysis worked in 1998. Fast-forward a few decades and you can carry an entire collection of music on a single USB stick, along with BPM, key waveform and hotcue data. What a time to be alive.

The Pioneer XDJ-RX3 is an 'all in one' DJ performance system which incorporates two playback 'decks' and a two channel mixer into a sleek single unit. At close to the size of a pair of standalone players and a mixer it's more on the substantial than compact side, but considering the feature set it offers, I think its size and 9.3kg weight are probably justified. Plus the size helps you feel like you're getting more for your money.

Looking on the back panel the main stereo main output is via twin balanced XLR, and there's a booth output on dual TRS as well. If you're a weekend warrior playing a house party there's a secondary RCA main output too.

There's also a USB-B port so you can interface it to Serato. Two USB-A ports are on the top face of the unit, with STOP buttons adjacent to allow safe ejection of connected media.

While the XDJ-RX3 is sold as 2-channels, it kind of does a bit more. There are two faders, with trim, lo/mid/high EQ, filters, and CUE functionality, but each channel also has an input selector allowing you to switch its source from the internal player to an external line or phono input. There are connectors for each type of source for each channel, and there's even a grounding lug for turntables. Additional to these inputs two combo XLR/TRS connectors provide mic inputs. Round the front are paired 3.5 and 6.35mm headphone sockets. This IO format is basically identical to what you'll find on standalone mixers. The XDJ-RX3 adds an auxiliary input with twin RCA and 3.5mm connector, which just has an input select switch and trim knob. I like that the power supply is internal and fed with a simple IEC cable – way better than having an external unit to lose.

Two playback 'decks' flank the mixer and these support files in MP3, AAC, WAV, FLAC and AIFF formats. Content can be loaded from a single USB stick to either player, an operation achieved via the 10.1" touch screen (the screen is a huge improvement over the earlier generation units), and adjacent rotary encoder. In the browse view, you can touch the miniature waveforms to solo any track in the list at that point after turning on the cue link function, so you can cue a track even while you are playing two others.

Navigation of the screen is generally intuitive, though from time to time I found myself trying to swipe or press a function on-screen that actually required a hard button press. Physical keys above the screen shortcut the way to choose sources from either USB port or a connected computer running rekordbox, as well as take you to Browse, Search, and Playlists. Once you find a song you want to play with the rotary encoder, either tap the hard buttons beneath it or the on-screen option to load the track to a deck. There's a pop-out info page to see more detail about your track. With the exception of navigating both players on one display, it does bear a striking resemblance to the operation method of a CDJ-3000.

The search function is typically good, and the playlist page also allows you to setup four 'banks' which seem to be a way to setup crates on the fly. Just like on two linked CDJ players you can sync one deck to the others BPM, but as always use the sync function at the risk of ridicule from your peers. Using the stacked waveform views to sync your tracks is a more subtle approach if you're looking for some technological assistance with your mix. The display shows a lot of information, and just about everything you could want to know is there somewhere. It takes a little time to get used to the layout, but once you do it's fast to find whatever info you want.

Performance effects such as hot cues, beat jump, beat loop and slip loop functions are all accessible via pads beneath the jog wheels. On that note, each wheel has a central display that shows track cover art as well as the status

THE SPECS

Plays: MP3, AAC, WAV, AIFF, FLAC

USB Storage Support: FAT16, FAT32, exFAT, HFS+

Compatible DJ Software: rekordbox, Serato DJ Pro



the second port and hit record.

The XDJ-RX3 is the most recent in the Pioneer 'all in one' family, its siblings the entry level 2 channel XDJ-RR and the 4 channel XDJ-XZ. The RX3 is generationally superior to both of these, and I think positioned to be a crossover product to bridge the gap between domestic and professional setups. I think it absolutely hits the mark on this, thanks in part to rekordbox.

So what's the rub? Drink spills in DJ gear are almost inevitable in venues, so when one spill can take out the entire unit (as opposed to just one player), the need for vigilance is heightened. In a domestic situation (where I think many of these will land) it's probably a moot point.

I think the build quality on the XDJ-RX3 seems quite decent, and functionally it's certainly a win, be it in a bedroom or bar. You could take it out to a gig and have no issues connecting it to a professional sound system; it certainly sounds good enough. But I think the big winners will be DJs wanting to improve their craft and practice with features like looping and effects. It's a great way to do that because it responds the same way as Pioneer club setups costing \$10K plus do, but at an RRP of \$3200 it's a lot more accessible.

Product Info: www.pioneerdj.com

Distributor Australia: www.jands.com.au

Distributor New Zealand: www.monacocorp.co.nz

of various deck features. The jog wheels themselves feel decent, but not amazing. I don't really care though, to me it's logical to expect the wheels on an all-in-one unit will not be as good as those on a single CDJ at a higher price point. The tension adjust seems to cover a decent range and the vinyl mode does allow for variation in touch sensitivity; it's not just on or off. For me it's fine.

So the players get a big tick, and so too does the mixer which is really very straightforward. Functions like fader curves and output attenuators are neatly buried away in the system menu, as is a very clever option to exclude the mic signal from the booth output.

I've observed over the years that Pioneer has been pretty careful about maintaining consistency in their general mixer layout, since much of how people mix relies on muscle memory. You'll always find the headphone volume in the same place for instance, and that kind of thing is really important. The XDJ-RX3 mixer basically replicates a DJM-900NXS2, albeit a little slimmer on channels. Even the order of the beat effect select knob is the same. To the best of my memory the

effects even sound the same across both units. Really aside from the extra cue link function, it operates just like a DJM.

The XDJ-RX3 faders (and especially the crossfader) don't feel quite as good as those on a standalone unit, but again that's expected. I popped a couple of potentiometer caps off and discovered that the pots have metal shafts, not plastic ones. So that's good. The headphone amp is very gutsy so watch your ears; you'll certainly never come up short on level there.

You can preset a lot of the mixer and deck options through rekordbox and load these settings from USB. The rekordbox software platform is a universal way to interface your music to all Pioneer playback hardware. It can analyse tracks and allow preparation of playlists in advance then selectively export these to USB memory.

rekordbox includes a performance mode that unlocks when you connect a compatible Pioneer controller, but to me the XDJ-RX3 as a standalone unit offers a superior user experience. You don't even need a computer to record your set, just pop another USB stick into



WHAT CAN I RELY ON? WHO CAN I RELY ON?

Modern day consumers are an entitled bunch - we want it cheap, and we want it now. Like old timers, we also expect our gear to be reliable and always work.

We expect the same of our humans. With all their quirks and peculiarities - we still expect them to be professionally and personally reliable.

Reliable Apparatus

No-one likes a gear failure. Especially mid gig. But we've all been there, and our various responses have taught us tough and rapid decision-making skills. We find a solution, or work around, and we find it quick. We also find our trust in the piece of gear that failed is diminished. So, we tend to stick with what we know works. Proven and trustworthy gadgetry is crucial at showtime.

The success of the big box stores pumping out cheap and flaky consumer items is self-evident. In the rush to the bottom, reliability is purposely compromised. As long as the product hangs in there until warranty expires, the manufacturer is covered and when it does inevitably fall over, there'll be a brand-new model just waiting to be sold.

Of course, production companies cannot afford the time penalty of arranging RMAs, shipping, waiting, calling, following up when a show is on the line. So, they have spares. Of quality gear that they know will keep the show running.

I wonder how many use el-cheapo tools for DIY work? Personally, I find them a pain. They rarely do the job well; you have to force them when they are inherently weak by production design and will fail just when you don't have time to waste arranging repair or replacement. Time is precious; it's false economy to waste it, either at work or home.

Harsh experience has seen me less inclined to put up with rubbish. That means taking the time to research and find the best tool for the job that I can afford. Whether it's mechanical, household goods, clothing or some kind of electronica, I want to enjoy using the item and want to keep doing so for a long time.

Reliable People

Few enjoy the consequences of human failure. Showing up late, under the weather, distracted by life's problems, or not showing up at all - ask any employer and they've seen it all. As an employer, or employee responsible for other workers, it's an ongoing hassle. As a life partner or family member, these behaviours can fray the relationship, if not make it untenable.

As a fellow human, I have at times failed others (and thus, myself) as a contractor / employee. More importantly, failures on a personal level are something we all encounter and I'm no different. Sorry to those who slid off my learning curve; knowingly or not, you have likely done similar somewhere else.

I did it again just yesterday. Long booked in to see an anaesthetist for an upcoming minor surgery, I plumb forgot about the appointment. The day prior, I'd switched the computer (and calendar) off to go out visiting and my commitments for the following day didn't register. Long story short, a call from the clinic 20 minutes after I was due there was most embarrassing. I apologised profusely for my lapse and pleaded for mercy. They were nice enough to reschedule later in the day. Then, I allowed extra time to be early, walked into the clinic only to realise I've gone to the wrong place and had to do a mad dash around the corner to the correct clinic. My memory is obviously not as reliable as it once was.

Our business and social groupings are also made up of people. Being able to navigate their anomalies is a lifelong pursuit. Learning to trust these folks along the way deepens the relationship. Those that are repeatedly there when you need them are deemed reliable and

become fast friends / colleagues. The ones that are continually late, absent or don't seem to care get dropped down or off the list.

Gear + People = Distributors

AV distribution is a combination of both people and equipment. For continued success, both of these components need to be reliable. There are multiple examples of great product let down by poor support. Likewise, there are some excellent staff who struggle to back a flaky piece of kit. I've experienced both.

With the ongoing supply upsets, some top-level manufacturers are taking a massive hit because they cannot be relied upon to provide a timely product. Having a box on the shelf is far more attractive to a purchaser than an open timeline with no concrete delivery window.

Old alliances are going out the window. You might have a favourite component, but if you cannot get your hands on it, you will need to switch camps to get your job done. You might have a good rapport with a particular distributor but if they cannot supply what you need, then needs must and you'll have to do business with someone who can get you what you require to keep your own customers happy.

Then, you must use gear that is a little unfamiliar and, with that, untrusted. Only time (and successes with minimal failures) will gain that trust. Likewise, it takes a while to know whether your distributor is truly there to help or just after a quick sale. You will find out when something fails and you need it repaired or replaced.

In reliability we trust

So, how to be a good consumer? Buy equipment that you know will be solidly up for what you have planned for it. Cheap crap will give you a crap outcome. Support companies that you have faith in to deliver what you need and when you need it.

Be what you would want others to be. Follow through and do what you said you would. Be dependable; others may rely on you.



DUSTY DAYS:

The Slim Dusty tapes

Returning from his 2023 performance at the Tamworth Country Music Festival, stand-up comedian and impressionist Greg Hayes, who spent 10 years touring with Slim Dusty, gives us an insight into those heady days when he was a performer and the compère of the Slim Dusty touring shows, which played to packed houses every night.

I caught up with Greg Hayes who does a breakfast radio show at Myall Coast Radio, and also hosts a mid-morning Dusty Diamonds of Country show. Greg was happy to share some of his memories of touring with Slim Dusty around Australia and New Zealand.

"People say he was big in the country, but he was very big in the city as well. He used to play the concert halls in the cities and pack them night after night, and he was very big in New Zealand," said Hayes.

Hayes did his first Slim Dusty tour in 1989. "We called it the 'Fairlane' tour because they hired new Ford Fairlanes for the tour, and I travelled from Sydney to Mackay in one of those with a couple of other musicians," said Hayes.

The 'Fairlane' tour was officially called Two Singers One Song, named after the album of the same name featuring Slim Dusty and his daughter Ann Kirkpatrick.

Slim Dusty's love of the Ford Fairlane goes back to a ZD model Fairlane 500 purchased by

Slim and his wife Joy McKean in 1971, which was nicknamed Old Purple.

"Slim had Old Purple garaged at his home in St Ives, Sydney. He had great affection for that car," said Hayes.

Old Purple towed a large caravan on tour around Australia clocking up a total of 560,000 kilometres. Both Old Purple and the caravan can be seen on display at the Slim Dusty Centre Museum in Kempsey, NSW.



Slim Dusty and Joy McKean

It was Geoff Mack, the man who wrote 'I've Been Everywhere', who recommended Greg Hayes for that one month Two Singers One Song tour in 1989; a booking that turned into a ten-year stint touring with the man who released more than one hundred albums in his enduring career.

"Geoff Mack told me, 'Don't underestimate him, he's got a really good ear.' Slim could pick if a guitar was even slightly out of tune, and he was super fussy about his musicians; he would seek out musicians that he liked," said Hayes. And Greg Hayes' love of country music and Aussie larrikin style of stand-up comedy was a perfect match for the Slim Dusty shows.

Artists on the shows often included Slim Dusty's wife Joy McKean, their daughter Ann Kirkpatrick, their son David Kirkpatrick, and a host of other noted country artists. Hayes says that Keith Urban, who was living in America at the time, turned up one night in 1991 and toured with the show for about a week.



Greg Hayes and Slim Dusty on the road



Greg Hayes at Myall Coast Radio

"Keith Urban grew up idolising Slim. He did a version of 'Lights on the Hill' (written by Joy McKean), and performed it with Slim on that tour," said Hayes.

"You would expect that when you support somebody you'd do the first twenty minutes or half hour. But Slim would open the show and

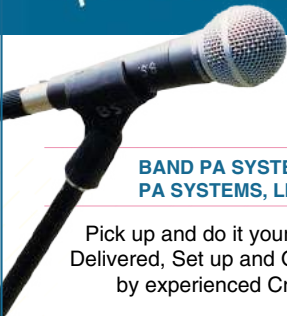
do three or four songs and then I would come on and do ten minutes, and then I'd introduce a guest artist," said Hayes.

Greg Hayes would do other spots as the show progressed. His spots included stand-up comedy and impressions, some sung with guitar accompaniment including an impression

where he would feature Slim Dusty's hit 'A Pub With No Beer' as sung comically by Bob Dylan, Johnny Cash, and even Alan Jones.

"At the end of the show Slim would invite all the guests back on stage for the finale. He was a great believer in doing a variety show, you weren't just a support act," said Hayes.

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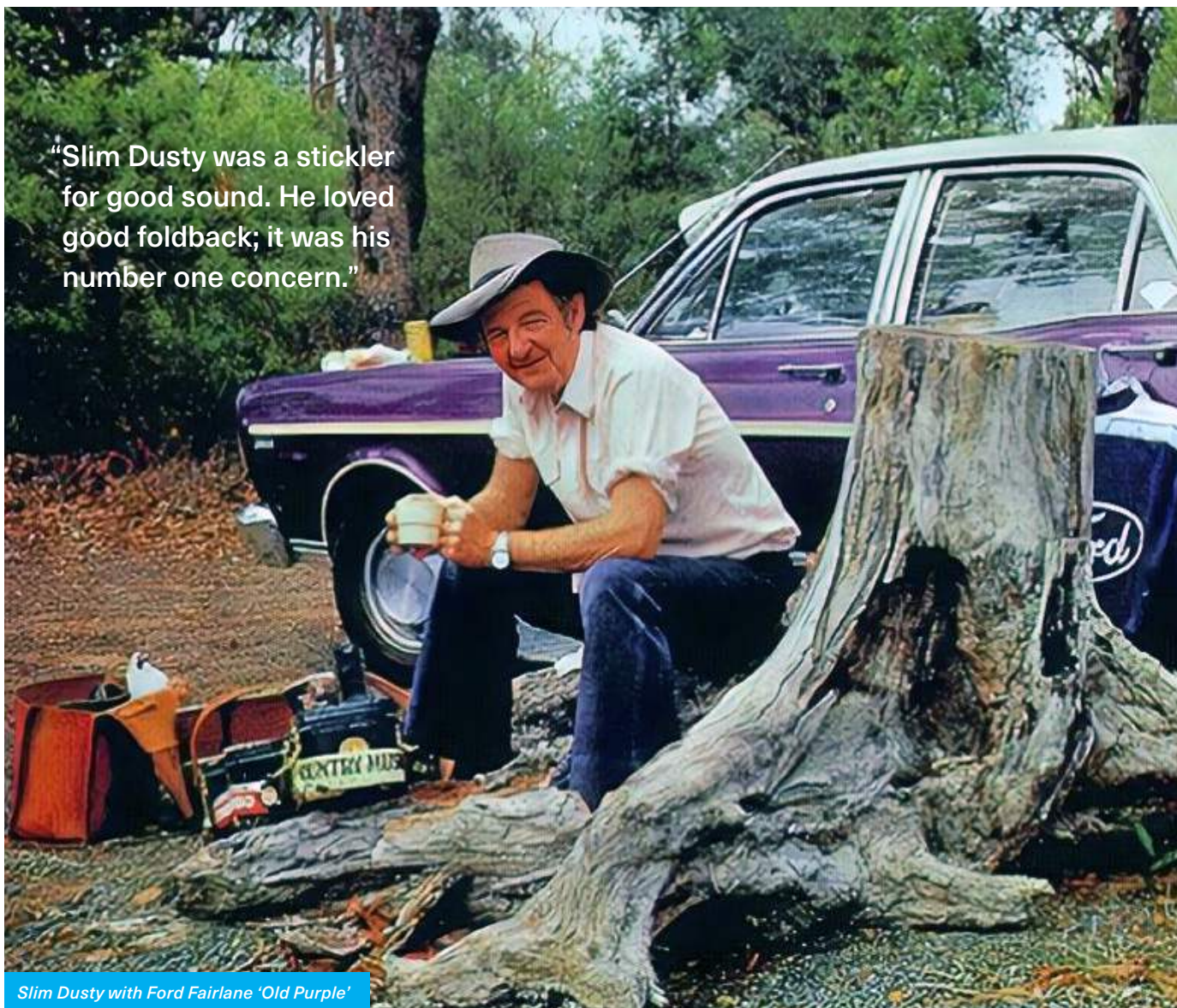
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"Slim Dusty was a stickler for good sound. He loved good foldback; it was his number one concern."



Slim Dusty with Ford Fairlane 'Old Purple'

People who have never attended a Slim Dusty concert often conjure up an image of one man and his guitar, but Hayes points out that these were big production variety shows that were fully miked with FOH and foldback engineered mixes, and a full lighting rig always travelled with the show.

"Slim Dusty was a stickler for good sound. He loved good foldback; it was his number one concern. Slim wanted the foldback to sound like an old-time country hall. His sound checks went on for ages. He'd get it down to where he was absolutely happy with it," said Hayes.

Hayes says a Slim Dusty touring show could last anything from three or four days to six weeks. They were mostly road shows with the exception of flights to New Zealand, and one tour in Australia during a pilot's strike saw him and the touring entourage board a military Lockheed C-130 Hercules.

"Slim had put together what he called the flying tour, which meant we were going to fly to everywhere we performed, but it was right in the middle of a pilot's strike, so they sent us from Melbourne to Launceston in a Hercules," said Hayes.

Hayes says that even though the shows were one hundred percent Australian, Slim Dusty did have a love of American country music. "I used to walk into his motel sometimes and he'd be listening to Hank Williams Jnr; he loved Hank Williams Jnr."

Despite Slim Dusty's love of American country music, his passion was to embody a unique element of the Australian way of life through his music, mostly that of the outback communities.

"Slim's music was a catalogue of the history of this country and the struggles of people in the bush. It was all about the appreciation of the people in the bush, the pioneers and also the truck drivers. Slim understood the people; he had a very good insight into the way his audiences thought, and he had such great diction in his voice. If Slim Dusty was singing about cooking damper around a campfire you could taste the damper. Or if he was singing about having a nice cold beer in the afternoon, you'd feel like a beer. It was a voice that was totally believable," said Hayes.

Slim Dusty holds the record for the artist signed for the longest period to EMI Records, and pre-orders saw some of his albums go

platinum before they were released.

"Slim started at EMI in 1946; he released 107 albums during his career, and he recorded right up to 2003, the year that he died," said Hayes.

In 2014 a statue of Slim Dusty and his wife Joy McKean, singer and songwriter nicknamed the 'Grand Lady of Australian Country Music', was unveiled during the Tamworth Country Music Festival. Joy McKean celebrated her 93rd birthday this year on January 14, coincidentally, one day into the Tamworth Country Music Festival.

Greg Hayes says he has never seen an artist give as much time after the shows to their audiences as Slim Dusty and his wife Joy McKean gave.

"Slim and Joy used to sit on a seat at the edge of the show every night where there would always be a long queue waiting in line to get records autographed or even to lament the passing of a loved one who was a fan of Slim's music," said Hayes, who adds, "It was almost religious."

A graphic of a paper chain made of stylized human figures holding hands, curving from the top left towards the bottom right. The figures are in two shades of green against a solid green background.

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