

# CX

LIGHTING | AUDIO | VIDEO | STAGING | INTEGRATION

## THE CHEMICAL BROTHERS

Deliver an awe-inspiring live show

## LDI 2019

All the hot releases from Vegas

## IMMERSIVE AUDIO

Two Years On

# THE RECORDING ISSUE

- > STEREO PAIRS VS STEREO IMAGE
- > RECORDING WITH SOUNDCRAFT'S UI24R
- > LIVE STREAMING
- > WORKING WITH TIMECODE
- > ENTTEC'S S-PLAY

## NEWS

- Hills AV sold to Amber
- Vale Anne Kerr and Garry Chamberlain
- CrewCare – the new charity for crew
- Barbizon Lighting Australia ceases trade

## REGULARS

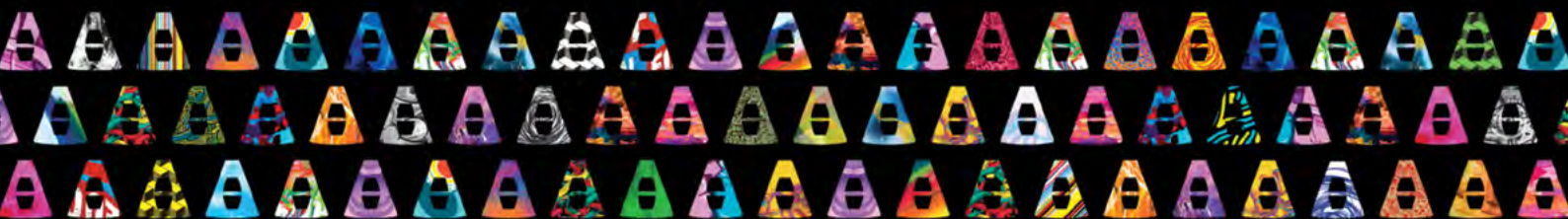
- Andy Stewart
- Jenny Barrett
- John O'Brien
- Duncan Fry

## ROAD TEST

- Acme BL-100
- Acoustic Technologies CLA700A and CLA LF3200A
- Dynacord TGX20

## ROADSKILLS

- The Chemical Brothers
- Sticky Fingers





Clear  
Precise  
Pristine  
Performance

## BUILT ON 4 DECADES OF LEGENDARY PERFORMANCE

The UPA is known for its ideal form factor, power output and versatile coverage. The ULTRA-X40 incorporates Meyer Sound's latest advancements in driver, distortion and phase response perfection into the do-it-all superhero form factor of the UPA.

Light-weight, highly portable with intelligent rigging and mounting options, the ULTRA-X40 has unprecedented versatility. This is the perfect multi-purpose loudspeaker for every rental inventory, portable application or permanent installation.

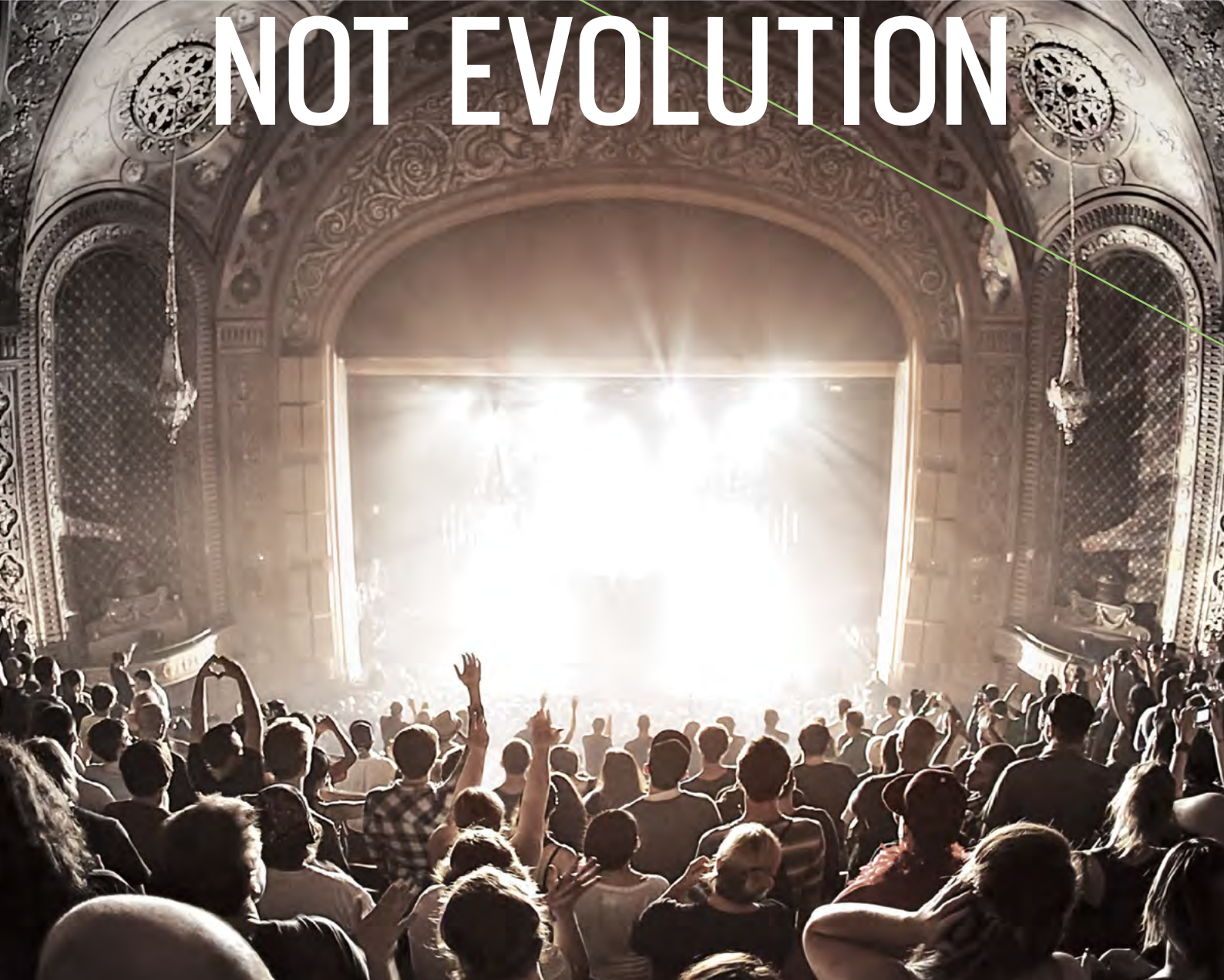
Set up your inventory with **ULTRA-X40**, the new do-it-all that's a bold revolution of an industry standard.

# ULTRA-X40

A BOLD REVOLUTION OF AN INDUSTRY STANDARD

Axient® Digital

# REVOLUTION NOT EVOLUTION



Axient Digital defies limitations for both RF and audio excellence. With an industry-leading 2 ms of latency\*, linear transient response, and wide dynamic range, nothing gets in the way of true, pure sound. Learn more at [jands.com.au](http://jands.com.au)

\*From transducer to analog output, in standard transmission mode.  
© 2018 Shure Incorporated



**SHURE**



Distributed by

**JANDS**

[www.jands.com.au](http://www.jands.com.au)

# CONTENTS

## NEWS

Hills AV business to Amber Technology	6
The Hills were alive...with the sound of trainwreck	6
CrewCare launches: Important new charity helping crew	7
NEW at ENTECH: AV Hour of Power and Education All Day	8
Vale Anne Kerr	10
Barbizon Lighting Australia ceases trading	10
CX Supports	11
Vale Garry Chamberlain	11

## NEW GEAR

LDI 2019: All the hot releases from Vegas	12
by Cat Strom	22
Immersive Live Sound - The Story So Far	26
by Julius Grafton	26
Yamaha's AFC3 - from Acoustic Enhancement to Spatial Audio	29
by Jason Allen	29
Diversity and Inclusion in AV – It's Our Responsibility	48
by Toni McAllister	48

## THE RECORDING ISSUE

StereoTypical	32
by Andy Stewart	32
Live streaming gigs from Blind Chihuahua's remote studio	34
by Paula Jones	34
Say hello to S-PLAY: The smart player for light shows	36
by ENTTEC's VJ Suriya	36
Tips and Tricks: Recording with Soundcraft's Ui24R	40
presented by Soundcraft	40
Timecode - Staying on Time	42
by Simon Byrne	42

## REGULARS

Listen Here: Gaining Insight Into Calibration	43
by Andy Stewart	43
Set to conquer the US - Fiasco Opens Service Centre in L.A.	46
by Jenny Barrett	46
Company Profile - The Look	50
by John O'Brien	50
Tech Talk: Trending In Production Lighting – Weatherproof Fixtures	57
by ULA Group's Simon Pentz	57
Dunc's World: Live recordings - the hard way!	66
by Duncan Fry	66

## ROAD TEST

Acme BL-100 WW and BL-100 RGBW	60
by Ashley Salta and Wesley Bluff	60
Acoustic Technologies CLA700A and CLA LF3200A	62
by Shane Seccombe	62
Dynacord TGX20	64
by Tony Hystek and Peter Meredith	64

## ROADSKILLS BY CAT STROM

The Chemical Brothers	17
Sticky Fingers	54



\* Cover Photo – The Chemical Brothers.  
Photo credit Ashley Mar

\* Contents Photo – LDI 2019. Photo credit Cat Strom

CX is published by Juliusmedia Group Pty Ltd, under license from Destination Media Pty Ltd.  
Locked Bag 30, Epping NSW 1710 Australia.  
Phone +61 2 408 498 180.  
Email [mail@juliusmedia.com](mailto:mail@juliusmedia.com)

Editor: Jason Allen

Publisher: Julius Grafton

Business development and sales: Steve James

Layout: mark wood design – Mark Underwood & Alisha Hill

All contents COPYRIGHT CX Network Pty Ltd 2019/2020

Nothing herein to be reproduced in any format without express written consent.

IGNITE CREATIVITY

infinity FURION SERIES



**S601 Profile**

- 500W
- Blade System
- 7:1 Zoom
- CMY + CTO
- Animation Wheel



**S401 Spot**

- 350W
- 5:1 Zoom
- CMY & CTO
- Animation Wheel



**S201 Spot**

- 150W
- 2.5:1 Zoom
- Double Gobo & Colourwheel

WIRELESS SOLUTION  
MADE IN SWEDEN



Standard Art-NET & WDMX  
by Wireless Solutions



Clearlight Shows Pty Ltd

03 9553 1688

[www.clearlight.com.au](http://www.clearlight.com.au)

## Hills to sell Australia and New Zealand AV business to Amber Technology

Amber Technology Limited, a subsidiary of Ambertech Limited (ASX:AMO), and Hills Limited (ASX:HIL) announced in November that they reached agreement for the sale of the Hills Audio Visual (AV) business to Amber Technology, with both parties committed to ensuring a smooth transition for customers, vendors and employees.

The sale, which is subject to certain conditions and final approval by Ambertech Limited shareholders, is expected to be completed in early December. Under the terms of the agreement:

- The majority of AV personnel – including sales, business development, product management and technical staff – will transfer to Amber Technology;
- The majority of AV brands distributed by Hills in Australia and New Zealand will transfer to Amber Technology, ensuring continuity for customers and vendors;

- Hills will collect payments from customers for sales completed prior to the date of completion; and

- Amber Technology will fulfil outstanding orders held by the Hills AV business at the date of completion.

Hills' decision to exit the AV business follows a strategic and operational review that recommended Hills focus on its Health division and its larger security and technical services Distribution division, where it enjoys a strong market leadership position.

Hills Managing Director and Chief Executive Officer David Lenz said the sale to Amber Technology, with its sole focus on the AV industry and more than 30 years of experience, was a positive outcome for the employees, customers and suppliers of the Hills AV business. He said that both parties were determined to ensure minimal disruption for customers and vendors.

"Hills has a long history of participation in the AV markets in Australia and New Zealand," Mr Lenz said. "We have appreciated the support of our customers and suppliers over many years. However, our future lies in the health, technical services and security technology sectors, and so we are very pleased to have found a new opportunity for our AV colleagues, customers and suppliers at Amber Technology."

Ambertech Managing Director Mr Peter Amos said the company was extremely excited to have the opportunity to merge the Hills AV business into its existing Integrated Solutions division. "We look forward to welcoming the Hills staff into our company, the brands represented by Hills into our portfolio, and many new customers into a relationship with Amber Technology," Mr Amos said. "We are 100 per cent focused on serving the AV markets in Australia and New Zealand, and this is a wonderful opportunity for us to bring together two passionate and professional teams to create a stronger organisation that will better serve our customers and manufacturer-partners."

# The hills are alive... with the sound of train-wreck



Ted Pretty

Seldom in Australian corporate history has value been wrecked with as much vigour as at Hills Limited, where the limping audio-visual division was sold to Amber in November.

The story starts with Hills Limited buying Audio Telex Communications in 2005 for around \$35 million. ATC was Australia's largest distributor of professional audio, managed spectacularly well by Roy Morgan, and led by long time audio guy Rod Craig.

ATC was joined into Hills and then Hills CEO

David Simmons decided to let his new SVL (Sound, Video, Lighting) division get on with things. Run by Rod Craig's son Stuart Craig, it certainly did, building a strong project focus.

When Simmons retired, the CFO Graham Twartz stepped up, and continued to understand SVL and leave it to make spectacular profits. Turnover headed over \$60 million a year, more than half of that from the high margin Crestron distribution.

Hills share price hit an all-time high of \$A6.72,

which had the company valued at well over \$A1 billion.

In 2012 the building industry was in downturn after the GFC and parts of Hills were exposed. The board replaced Twartz with Ted Pretty (pictured), whose main claim to fame was a \$1 billion write-down at Telstra where he championed the acquisition of Pacific Century Cyberworks – which then tanked.

Ted set about reorganising Hills, and issued a directive to all divisions to cut overheads by 10%, effective immediately. The SVL division was outperforming the rest, but it suddenly had to slash and burn. The effects were immediate – the busiest week ever, the warehouse couldn't fulfil all the orders due to staff shortages.

Many highly skilled long term SVL staff were laid off. Sometime later, SVL chief Stuart Craig departed, only to turn up as region manager for Crestron. That clock was ticking.

Don McConnell was one brand manager shown the door in a round of 'right-sizing'. He promptly set up his own distribution firm and didn't have to wait too long for some of the Hills brands he had handled to call him. Now his Audio Brands Australia is a fast growing firm, handling prestige products like Meyer Sound, Mipro, and FBT.

Exactly the same thing happened at the Hills NZ outpost. Marcel Reinen was also

**Continued...**

shown the door after nearly 20 years. He set up Pacific AV which mirrors Audio Brands Australia – and could not be happier.

Ted leased an expensive city office and set up a centralised call centre. Where an SVL client had previously called someone they knew to place an order, suddenly they were talking to people with no idea.

Strangely in 2014 Ted then acquired Audio Products Group for \$A15 million. APG was very well managed and owned by Ken Dwyer. The immediate problem with this was that many brands already handled by the SVL part of Hills clashed with the brands that Ted was bolting on with APG.

APG departing owner Ken Dwyer had prepared a road map for the merged business, but it was ignored. It is not known if it ever was shown to the board.

A long and relentless series of brands were lost, often the stronger ones. Each exiting brand found a home at an SVL competitor.

At this point in time, SVL was returning between \$A6 and \$8 million in profits, but with the disorganisation this was plummeting.

Eventually Crestron took control of their brand and set up local distribution, headed by Stuart Craig, ripping well over \$30 million in turnover and as much as \$A5 million in yearly profits away from Hills.

The board started to realise the ship was sinking, and encouraged Ted to leave. With a payout, of course.

But the rot had set in. Morale was low. Two final dumb moves were left to play after the three years of Ted. The audio visual division had two things left that had potential. One was distribution of L-Acoustics which was about to explode with the introduction of immersive audio.

In 2017 as details emerged of L-Acoustics L-ISA product, it was apparent that the brand would accelerate at a great rate for Hills, provided funding was applied for stock. It was not forthcoming. The brand walked away to Jands – where it accelerated at a great rate.

The other was Australian Monitor, the 'house brand' of audio products acquired with Audio Telex Communications. Management did see the potential, and invited me to go to Melbourne and have a look at what they were doing.

At that meeting, Shane Meyers waxed lyrical about how Hills had a great asset in Greg Hicks – the Australian Monitor technician who had been with the firm since it was started – by me. 'We can ring Hicks and get the answer to ANY question', he enthused.

Like many things at Hills that didn't last long – Hicks was in another wave of retrenchments not long after.

The scorecard today: Hills spent \$35 million on Audio Telex, and \$15 million on Audio Products Group for a total of \$50 million. They sold the remnants of the audio visual business to Amber for \$5.5 million.

At least the share price has recovered from its all-time low. It is now 20c, valuing the whole firm at less than \$50 million. For the shareholders everything is a disaster.

by Julius Grafton



## CrewCare launches: Important new charity helping crew

**Around six years ago a collective of 70s and 80s road crew had a reunion at St Kilda Bowls Club. Afterwards a spreadsheet of present and missing crew was created and with a lot of input from the 200 crew at the reunion, an eventual 400 names represented all known working crew from the 1970s. Over time they realised that a massive 120 of them were now dead, many from suicide, and the list was growing.**

Crew then and still today have very little outside support. They often have low or no

superannuation, and claiming for work injuries was and is very difficult. The nature of stage crew

is they are self-depreciating, insular, lone wolves, unlikely to complain about anything through official channels. The revelation of the horrible deaths and suicides in crew ranks partially motivated a study by Entertainment Assist, a mental health support organisation generously funded by the Pratt Foundation. They found:

- 25% of performing artists and most roadies have attempted or considered suicide, but none of the roadies surveyed had sought help
- Over a third of performing artists, 25% of industry support workers, and most roadies and crew reported mental health problems

This staggering result reverberated across mass media, and led to Support Act, the charity that assists entertainment people who need financial and other help, recognising that a peak body of crew was needed. Support Act had been dealing with a group of crew responsible for the reunions, who had the best intentions but no formal structure. Enter CrewCare which was initially the hard work of Howard Freeman, Tony Moran, and Sharon Moran.

CrewCare is an incorporated charity with a constitution, a board of industry crew (including CX publisher Julius Grafton) and a formal working agreement with Support Act. All funds it raises go straight in to the Support Act Roadie fund which currently pays out more than it receives.

Here's how they describe it:

"We are a registered charity, owned by our members and overseen by an elected board of volunteers. Membership is open to everyone in the entertainment industry, with voting rights given to those who have worked in live music and entertainment production for more than 5 years."

"CrewCare is proud to officially partner with Support Act. The two organisations have embarked on a close and ongoing relationship, ensuring our like-minded objectives are consolidated in a united approach to all aspects of crew welfare."

"CrewCare channels all donations and fundraising income through the Support Act Roadies Fund, knowing first-hand the benefits and relief it has provided and will continue delivering to the live production sector."

Solid things have already happened: A3 stickers promoting the Support Act Wellbeing Helpline are being placed in every pan that services the live production industry Australia wide, as well as full page advertisements, donated by CX Magazine, in an ongoing campaign to promote this vital service.

A 'CrewCard' is to be distributed at inductions, with posters being made freely available to venues, production and crewing companies for display in the workplace.

by Julius Grafton

**Join or support  
www.crewcare.org.au/  
Donations (tax  
deductible) can go  
directly to Support Act  
but please remember to  
select 'Roadies Fund'  
under 'I would like to  
make a donation to:'**



# NEW AT ENTECH

## 'AV Hour of Power', and Education All Day

**At 10 AM, an hour before the show floor of ENTECH Roadshow opens, Australia's consultants and integrators will assemble for the AV Hour Of Power! Fuelled by free coffee and pastries, the busy AV professional will be treated to product expert's 'elevator pitches' on what their product is, how it works, and why you should specify it for your next project. The 'pitchers' will be tightly time restricted, and there is a strict NO POWERPOINT policy in place.**

Moderator and CX editor Jason Allen will run a tightly timed ship, electric cattle prod at the ready to swiftly put a stop to any techno-waffle or marketing blather. Your time is important, and this one hour digest of the latest and greatest solutions from leading exhibitors will get you ahead of the market, and on top of your game.

Then, every half hour attend training and demos on the trade show floor, in the Training Zone adjacent to the new and

popular ENTECH Café. This is built within the tradeshow, and brings everyone together.

A further innovation brings Facebook and LinkedIn Groups together at set times in the café, with IRL - 'In Real Life' gatherings. This is allied with greater outreach to Associations and Groups across performing arts venues and all reaches of the technical production and AV integration diaspora. By way of example, we successfully hosted The Tech Sisters in 2019.

ENTECH 2020 features around 35 exhibitors showing pro audio, AV, communication, staging, video, lighting and integration solutions. The one day, one city format grows attendance each year and now reaches over 75% of all buyers nationally (based on buyer power of \$313.4 million as stated in show registrations in 2019.)

The Roadshow is a tightly managed touring production using the best logistics providers from the concert touring industry, with touring production management. All logistics (except venue catering) are toured in our four dedicated trailers.

All popular attractions return in 2020 - The PA Demo, managed by Julius Grafton, the Lighting Demo with Alex Hughes, and the Cable Rolling Competition. Prizes and Giveaways in Happy Hour are upgraded.

**DATES/VENUES**

MARCH 2020: Thur 5 Perth PCEC, Tue 10 Adelaide Showground, Thur 12 Sydney Hordern, Tue 17 MCEC, Thur 19 RICC Brisbane.

**ENQUIRIES**

Jason Allen +61 407 735 920  
jason@juliusmedia.com  
or Steve James, +61 403 914 556  
steve@juliusmedia.com  
www.entech-roadshow.com



# EVOLVE 50

**Ev** Electro-Voice



**3 PIECES ■ 2 CLICKS ■ 1 SYSTEM**

[ELECTROVOICE.COM/EVOLVE50](http://ELECTROVOICE.COM/EVOLVE50)



**Ev** **QUICKSMART MOBILE**  
CONTROL YOUR SOUND FROM WHERE YOU ARE  
NOW AVAILABLE FOR ANDROID AND iOS

\*Bluetooth® is available in select countries. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Bosch Building Technologies, Inc. is under license. Other trademarks and trade names are those of their respective owners. QuickSmart Mobile available in select countries. ©2018 Bosch Building Technologies, Inc.

Distributed by

**JANDS** [www.jands.com.au](http://www.jands.com.au)

## Vale Anne Kerr

by Tony Daley, owner, Cases Com Au

Our Anne has passed away.

In mid-November, we received devastating but expected news that my business partner, Anne Kerr, had passed away. Anne is known and respected by many people and thousands of customers. Anne had complications the last 2-3 years which compounded recently, and saw her hospitalised some months ago. This is my small tribute to Anne.

In 2003, after selling my share in a case company, I started another case company (Blue Cat Case Company) in Brisbane having surrendered to 15 years of Melbourne weather as shareholder-owner of Nova Forge Case Company. Within six months Blue Cat was so busy it needed an accountant to manage and systemise things, and that's where Anne entered the door as a Mobile Accountant. Over the first few months she became intrigued at the rapid (exponential) growth combined with the singular nature of custom products and we decided to start an import business that imported cases which became known as Go Case. In 2008 Anne and I started Cases Com Au and had Blue Cat and Go Case as branch/brands rather than separate businesses.

By the end of 2004 we were the only case company in the world selling on Yahoo's SOLD.COM auction site and subsequently eBay. We were the only case company in the world starting full-blown ecommerce for purchasing cases in 2004. Go Case was the second import ready-made cases available in Australia (with USA's Road Ready Case Company leading at that time). Anne's endeavours particularly in negotiating, systems, spotting opportunity in the market,

and diversifying products saw Go Case rise to the top within two years of starting and remain the most popular ready-made case in Australia and New Zealand from then and still today. Blue Cat (custom cases) saw similar gains and became the largest case company after just four years. Whilst credit can be given to many of our employees, particularly Mitch Ussher, Dan Fittel, Lance Dean and Tavita Teo, the main credit for our success is due to Anne's insistence on systems and tying the business together in a proprietary database that measures every component,

minute and work-order to micro-detail.

Many people will be saddened by Anne's passing, none the less myself. Many of our customers have probably spoken to Anne at exhibitions and in our factory. Many of our customers will know that Anne, even as an accountant, got her hands dirty in our factory manufacturing cases. She was a hard worker and typically put in 50-60 hours a week, and I've been blessed to have had a totally honest, astute and knowledgeable business partner in Anne. I, like many people, will miss her dearly.



# BARBIZON LIGHTING AUSTRALIA CEASES TRADING

Barbizon Australia, Sydney-based distributor of leading lighting brands including ARRI, OSRAM, Matthews, LiteGear, Altman, BB&S, and Outsight (Creamsource), ceased trading in mid-November. Attempts to secure comment or explanation from Barbizon Australia before this piece was published were unsuccessful, with Accounting Manager Esther Klein stating in an email that "I have forwarded your email enquiry to the owners of the business in the USA. They have not approved for the story to be run at this time."

The circumstances that have led to this situation are unclear, as is how this relates to the operations of their American parent company.

The closure of Barbizon Australia comes during a period of remarkable consolidation in the Australasian professional lighting distribution space, with Philips (Selecon/Vari-lite) and Highlite International reducing presence, the merger of TLC with ShowTools, and major brands including Elation changing distributors. More and more brands and

products are being held by fewer companies.

Barbizon Australia had been in operation since 2009, while Barbizon Lighting has operated out of its New York headquarters since 1947, with offices based around the USA, Europe, India, and Australia.



# CX SUPPORTS

CX Magazine assists and recommends the following charities and support services for all of us who work in production:

CrewCare - [www.crewcare.org.au](http://www.crewcare.org.au) - the new association for ALL working backstage. CrewCare raises money and awareness whilst looking after the welfare of all Australian professional production workers. CrewCare directs all donations and fundraised monies through the Support Act Roadies Fund, ensuring that crew have access to ongoing vital crisis relief and mental health services.

Roady4Roadies - [www.roady4roadies.com](http://www.roady4roadies.com) - the annual fundraising event for crew across Australia and New Zealand.

Entertainment Assist - [www.entertainmentassist.org.au](http://www.entertainmentassist.org.au) - the national health promotion charity that raises

awareness about mental health and wellbeing, committed to reducing the shockingly high rates of anxiety, depression, suicide, isolation and other matters associated with working in the Australian entertainment industry.

Support Act - [supportact.org.au](http://supportact.org.au) - the long running charity who help crew, and facilitate The Wellbeing Helpline - 1800 959 500 ([supportact.org.au/wellbeinghelpline](http://supportact.org.au/wellbeinghelpline)). The Helpline is a free, confidential counselling service that is available to any crew who need to talk to someone about any aspect of their wellbeing. It is delivered in partnership with Access EAP, and is staffed by professional counsellors who offer expertise in all areas related to mental health including depression, anxiety, addiction, and suicidal feelings. You can also email them and a counsellor will call you back. Skype sessions are available if you are touring overseas.

CX believe the Wellbeing Helpline is underutilised, and stress that it is FREE to ANYONE who says they work as crew, in any

capacity. It is staffed 24/7 by a counselling firm that also handle emergency services crew, and is funded for crew the same way it is funded for the fire brigade.



## Vale Garry 'Brick' Chamberlain

by Greg Yates

9 February 1960 – 4 November 2019

It is with much sadness that I report the passing of Garry 'Brick' Chamberlain. I was informed by his long-time partner that he passed away peacefully in hospital on Monday November 4. At last he is at peace and free of the ills that controlled him.

Brick was a lighting crew chief starting at Jands Concert Productions under Eric Robinson and eventually became lighting crew chief on three U2 world tours. Not bad. He would often say "How did this happen to a boy from Corio, Victoria?" He achieved that not through ambition, but just by being Brick -

good, honest, hardworking, dedicated.

I first met him in 1992 when we did some tours together. One of them was Jesus Christ Superstar; four months around Australia. He ran a good team. We had a good time. We stayed in contact and worked together on and off over the years. He went and did the U2 tours, finishing those in 2011. He wanted to be home to see his daughters more. He was done with touring.

In the separation from his wife, Garry ended up owning a rubber stamp business located in Wynyard Arcade, Sydney. Bizarre. I would often call in there to say hi and have a coffee, as did others (myself, Brick, Ian Messner and Mitch Fenton had a great brunch one day by chance) and find Garry bent over the computer or stamp cutting machine mumbling about how a stamp wasn't being cut correctly

or some 2nd grade artwork that he was sent. He would always do his best to make the stamp as perfect as possible, and deal with the situation with graciousness. I don't think I ever saw him yell or get aggressive.

Sadly with the renovation works at Wynyard Station the business was forced to relocate. With that move his business suffered and eventually closed after many years. Garry suffered personally and financially. His health deteriorated. He was cared for by his long-time partner for a while and then moved back to his home town of Corio near Geelong. Times were looking somewhat better. Not for long.

He was a friend and an inspiration to me, and indeed to many. As I read through messages and Facebook posts I am reminded of Brick's many positive qualities – hard working, organised, putting others first. He was a true gentleman who would deal with any situation with humour and honesty. He was a mentor to many, young or old, kids just starting out in the industry, or older guys like me.

Besides the work aspect, Garry was a mad keen AFL football fan. Followed the Yellow and Blacks (whoever they are. Sorry I'm not a sporting guy!). Anyone who followed him on Facebook would water at the mouth when seeing the pics of his dinner. Masterchef quality.

Garry didn't put himself first. And he suffered to his detriment. Even when he was out of money he was still offering to pay for lunch with me! (I paid). He didn't commit suicide in the usual way, but he still managed to kill himself. Please look after yourselves and each other. Please remember Garry 'Brick' Chamberlain always. Love to all.



**Claypaky Mini-B**

Mini-B is the smallest LED beam light ever made by Claypaky for the professional market. Weighing 7 kg and measuring only 34 cm, Mini-B is fitted with 40 Watt Osram RGBW LEDs, the same ones fitted in the new Claypaky HY B-EYE. Mini-B has a zoom range of 4° to 55°, and its central LED may be controlled separately from the external ring of LEDs. It includes more than fifty pre-installed effects/colour macros, 2500K-8000K colour temperature control, a 16 bit dimmer with four curves, an electronic strobe @ 25 f/sec, and Ethernet access.

**Australia: Show Technology**  
[showtech.com.au](http://showtech.com.au) or (02) 9748 1122  
**New Zealand: Show Technology**  
[showtech.com.au](http://showtech.com.au) or (09) 869 3293

**NEW  
GEAR**



**Barco XT1.2**

The new XT series further expands Barco's indoor high-resolution LED tiles portfolio. The 27" inch tiles with a pixel-pitch ranging from 0.9mm to 1.9mm deliver seamless results. Each tile has a 16:9 aspect ratio, and are designed for wall mounting. They are fully accessible from the front, creating a shallow depth. The improved robustness and the Assisted Module Extraction make sure the tiles can be easily removed, for maintenance or replacement needs.

**Australia and New Zealand:**  
**Barco Systems** [www.barco.com](http://www.barco.com)  
 or +61 (0)3 9646 5833

**Airtame 2**

The Airtame 2 is a digital signage and wireless presentation device designed for professional environments. It includes a Kensington lock slot that can be used to physically secure the product, and is powered through a 2.3A USB power adaptor or Airtame PoE Adapter accessory. It can be mounted to the wall with a powerful magnet and permanent adhesive, or simply by sticking the magnet onto any ferrous metal frame. With solid security protocols, central cloud management and several clever signage purposes, Airtame 2 is the simplest and smartest way to present wirelessly.

**Australia and New Zealand: avt**  
[avt.tech](http://avt.tech) or +61 7 5531 3103/ +64 0800 768 558



**Belden CatSnake**

Belden CatSnake is high performance shielded Cat6A cable for use in studios and in tactical field deployable audio/data installations. The cables have been tested for repeated bending against EN 50289-3-9-5, and exceed the required 100 bends (radius 40 mm, weight 8 kg) while maintaining electrical performance. For simulating the coiling and uncoiling on a reel, CatSnake has been subjected to a Track Chain test. Even after 2 million bends (radius 100 mm, length 5 m, speed 3.5 m/s) the cable performed according to the electrical performance stated in the data sheet.

**Australia and New Zealand: Madison Technologies**  
[madisontech.com.au](http://madisontech.com.au) or 1800 00 77 80

# PLEASE RECYCLE YOUR OLD MIXER RESPONSIBLY



The third mixer based on our 96kHz XCVI FPGA engine, Avantis puts all our next-generation technology in a standalone 64 channel / 42 configurable bus console, with dual Full HD touchscreens, a super-flexible workflow with Continuity UI, extensive I/O options, add-on processing from our flagship dLive mixing system, and a rugged full metal chassis.

Step up to Avantis. Leap ahead of the curve.



avantis

**ALLEN & HEATH**  
[allen-heath.com/avantis](http://allen-heath.com/avantis)



# NEW GEAR



## Event Lighting Lite PAR12X8L

The PAR12X8L is the latest addition to the Event Lighting Lite range. This static fixture has 12 x 8W RGBW LEDs, a fixed 40° beam angle and IR remote control in a fanless die-cast aluminium housing. Not only is this unit sturdy, it is quiet, slimline and lightweight at only 1.85kg.

**Australia and New Zealand: EVENTEC**  
[www.eventec.com.au](http://www.eventec.com.au) or +61 (0)2 9897 3077



## Epson EB-1485Fi

The Epson EB-1485Fi is a 1080p 3LCD Interactive Laser Projector. Its multi-touch display is scalable up to 100 inches (16:9 standalone), 120 inches (16:6 standalone), or 155 inches using Epson's DuoLink feature, which combines two interactive displays using built-in Edge Blending. The intuitive UI, touch home screen, and interactive OSD menu make it simple to set up and navigate across functions. Featuring multi-touch pen and finger capabilities, wireless BYOD connectivity and screen mirroring (Miracast), the EB-1485Fi also has secure user collaboration tools and connectivity options including wireless and wired, HDBaseT, and HDMI out.

**Australia: Epson - [www.epson.com.au](http://www.epson.com.au) or (02) 8899 3666**  
**New Zealand: [www.epson.co.nz](http://www.epson.co.nz) or (09) 366 6855**

## Newline RS Series

Newline's RS Series of 4K UHD @60Hz interactive displays is available in four sizes: 65-inch, 75-inch, 86-inch and 98-inch. They include Interactive Ecosystem software, which allows for users to collaborate, annotate and co-edit documents through video-chat, whiteboard and document editing with students either in different locations, or through a student's own device in the classroom. The cast feature provides a platform for up to 200 students to digitally line up and wirelessly cast, sharing content to present, removing the fuss of connecting cables. Multiple Newline displays across the network can be controlled and managed centrally via the ecosystem, allowing management and deployment of apps, configuration of display settings, and licence management.

**Australia: Amber Technology**  
[www.ambertech.com.au](http://www.ambertech.com.au) or 1800 251 367  
**New Zealand: Amber Technology**  
[www.amber.co.nz](http://www.amber.co.nz) or (09) 443 0753



## Panasonic Offset Lens Range

Panasonic's new zero offset lenses for its range of 1-Chip and 3-Chip DLP projectors include the ET-DLE020 0.28–0.30:1 ultra-short throw zoom lens for all Panasonic 1-Chip DLP projectors, and the ET-D3LEW200 short-throw zoom lens and ET-D3LEU100 ultra-short throw lens suitable for 20,000 and 30,000-lumen, WUXGA and 4K+ projectors. The lenses for 3-chip DLP TM projectors feature a novel L-shaped design which eliminates the issue of screen offset, solving problems associated with image projection from short distances in limited spaces. All three lenses have full range powered lens shift to enable greater adjustment flexibility, while the two models with powered zoom simplify image size and position adjustment after installation.

**Australia: Panasonic [www.panasonic.com/au/](http://www.panasonic.com/au/) or 132 600.**  
**New Zealand: Panasonic [www.panasonic.com/nz/](http://www.panasonic.com/nz/) or (09) 272 0178**

**BOSE**

PROFESSIONAL

# MORE LOUDSPEAKERS

# MORE AMPLIFIERS

# MORE PROCESSORS



## FOR BETTER SOUND IN MORE SPACES

With the Installed Sound Expansion, we've expanded our range of loudspeakers, processors, amplifiers, and controllers. Our established products remain and we've added new product families into the mix. Now system designers and installers can deliver better sound systems in more spaces than ever.

To learn more about our new **DesignMax** loudspeakers, **PowerSpace** amplifiers, and **Bose CSP** processors, contact your local Bose dealer or visit [PRO.BOSE.COM/installedSoundExpansion](https://pro.bose.com/installedsoundexpansion)

For more details, you may reach us at +61 2 8737 9999 or email to [Bose\\_Professional\\_ANZ@bose.com](mailto:Bose_Professional_ANZ@bose.com)



**Pioneer DJ XDJ-XZ**

The XDJ-XZ is a professional all-in-one DJ system. Animate your sets with 14 professional Beat FX and 6 Sound Colour FX, and trigger software-specific features using the 16 multicoloured Performance Pads. It includes 3 USB inputs (2 top-loading for USB devices and 1 laptop connection), track playback directly from your laptop via Link Export mode supporting 2 laptops simultaneously, and 64 bit internal processing.

**Australia:** Jands [jands.com.au](http://jands.com.au) or (02) 9582 0909  
**New Zealand:** Pioneer [www.pioneernz.co.nz](http://www.pioneernz.co.nz) or (09) 415 7444



**TASCAM MZ-123BT**

The TASCAM MZ-123BT is a compact 1U multi-channel, multi-zone professional installation mixer that provides versatile routing, mixing and distribution of up to three channels of music and announcements for a wide range of commercial applications. Input Channel sources can be easily assigned to each of the individual 3 Zone Outputs, and there is a MONO/STEREO select switch on each Output Channel. The three input channels include 3 band EQ and High Pass Filter, and the two mic inputs include a ducker.



**TASCAM BD-MP1**

The TASCAM BD-MP1 is a professional-grade 1RU Blu-ray player that expands the legacy of TASCAM's popular play back devices. The BD-MP1 is the perfect choice for a wide range of commercial installations. It supports external control via LAN/RS-232C, includes a Power on Play function, and is capable of 7.1 Audio playback. Its dual USB inputs enable fixed or interchangeable usage of USB memory data, and its outputs include HDMI, XLR balanced, RCA unbalanced, and Coaxial digital.

**Australia:** CMI Audio [www.cmi.com.au](http://www.cmi.com.au) or (03) 9315 2244  
**New Zealand:** Direct Imports [directimports.co.nz](http://directimports.co.nz) or (06) 873 0129



**Universal Audio Apollo Twin X DUO and QUAD**

The Apollo Twin X Thunderbolt 3 Audio Interfaces allow musicians and producers to easily track, overdub, and mix with elite-class A/D and D/A conversion, two or four Unison-enabled preamps, and DUO or QUAD Core real-time UAD plug-in processing, for Mac or PC. The Unison-enabled preamps track with near-zero latency through preamp emulations from Helios, Neve, API, Manley, and more. Cascade up to four Apollo interfaces and 6 UAD-2 devices over Thunderbolt, adding DSP and I/O as your studio grows.

**Australia:** CMI Audio [www.cmi.com.au](http://www.cmi.com.au) or (03) 9315 2244  
**New Zealand:** MusicLink [www.musiclinknz.co.nz](http://www.musiclinknz.co.nz) or (09) 250 0068

**NEW  
GEAR**

**Sonible ml:mio**

The ml:mio converts MADI-streams between optical, coaxial BNC, and twisted pair. This greatly simplifies the planning of setups and saves you a lot of time – in particular when working at live events. The three toggle switches mounted directly on the ml:mio ensure ease of use with no need for additional devices. You don't even need a notebook to remote-control the ml:mio - smartly integrated LEDs always indicate the current status of your signals and their routing. Especially when working under low light conditions, the ml:mio makes sure you keep track of things with a single glance.

**Australia:** Loud And Clear Sales [www.loudandclearsales.com.au](http://www.loudandclearsales.com.au) or +61 (0) 2 9439 9723





# THE CHEMICAL BROTHERS

by Cat Strom

Photo Credits: Ashley Mar

## The Chemical Brothers' reputation for delivering an awe-inspiring live show precedes them and CX discovered why.

The Chemical Brothers don't speak one word between them (saves on microphones!), letting their music and visuals take centre stage with incredible animations, film, giant bouncing balloons, fake snow and even a pair of giant toy robots with laser beams shooting from their eyes. It's a flawless union of lighting and video that allows the band to remain in silhouette as Tom and Ed aren't interested in being prominent on stage. The visuals become the lead singer.

Show designers Marcus Lyall and Adam Smith have been working with the pair for 28

years, and they've got the spectacle down to a fine art.

Unusually, most of the show's visuals are film, delivering quite a different impression to other shows. Each song is an entirely different immersive experience for the audience with most of the films involving real-world action shot with performers, sometimes enhanced with computer graphics and sometimes featuring exceptionally ambitious productions.

Many of the crew have also been with the band for several years, making for a

touring family with a relaxed vibe. It's up to production manager Toby Dennis, who has worked with the act for sixteen years, to bring the wild ideas of Lyall and Smith to life, saying they are a pleasure to work with.

"It's always fun trying to decipher what they want and then make it a reality!" he added. "We call it Fantasy Land and it's our job to turn it into real life. We have to make it affordable to tour as well as practical. Helicopters, people parachuting in – these are just some of the ideas that have been talked about before! Quite often you're restricted by the venue and money, rather than the ideas and what you can accomplish."

Toby commented that the show is all about the interaction of the visuals with the lights and how to make those visuals come to life.

“Everything has to be related and that’s something we’ve definitely developed and fine-tuned over the years. There has to be a meaning for it, nothing ever flashes or swoops for no reason. There’s thought behind every cut, every edit and every interaction.”

Toby says that his biggest challenge is squeezing it all in, especially as it’s an arena show which sometimes has to be squeezed onto a festival stage.

“It’s not just put a load of lights up and stick a screen there. Everything has a relationship, so if you change just one thing there’s a ripple effect through the mapping, the stagecraft, and more,” he said. “There’s definitely a level of predicting what’s to come and making sure we have a trick up our sleeve to be able to deal with that. It’s not a simple show to production manage! We’ve always prided ourselves on delivering all elements of the show, and over the sixteen years, I can’t think of one occasion where we’ve said we just won’t do something. We always find a way to deliver each element.”

At The Dome in Sydney, Toby said that the weight loads in the roof were a hindrance as it’s a heavy show with heaps of automation, resulting in lots of dynamic loads. Toby’s solution was to add a stage to the venue, in this case a Clifton’s Apollo stage, which he describes as a fantastic stage that goes up quick, is black, has only four legs and you can pretty much hang what you want, where you want.

“It worked a treat and solved all of our problems,” Toby said. “We really are a big family who all really care and will go the extra mile to solve a problem. Nothing is too much to deliver the show for Tom and Ed.”

The massive 15.6m by 8.4m Roe Vanish 18 screen was sourced from Universal Pixels in the UK with Toby noting its’ amazing transparency.

“We were thinking of using the Roe MC18.

The difference is the framework and the different IMs on the front whereas the Vanish disappears into nothing which is what we need in order to implement all of our mapping,” he added.

Behind the large LED screen upstage were five moving truss pods, each loaded with a Robe MegaPointe moving light and some LED battens. These were automated on ten Kinesys motors being run on a K2 controller. The pods changed positions constantly throughout the set, so fans were aware of moving light sources as they flew up and down, with lights blasting through the screen. However, being masked by the screen, it wasn’t immediately apparent where they were in relation to the stage, adding another layer of optical depth and texturing to this multi-faceted picture.



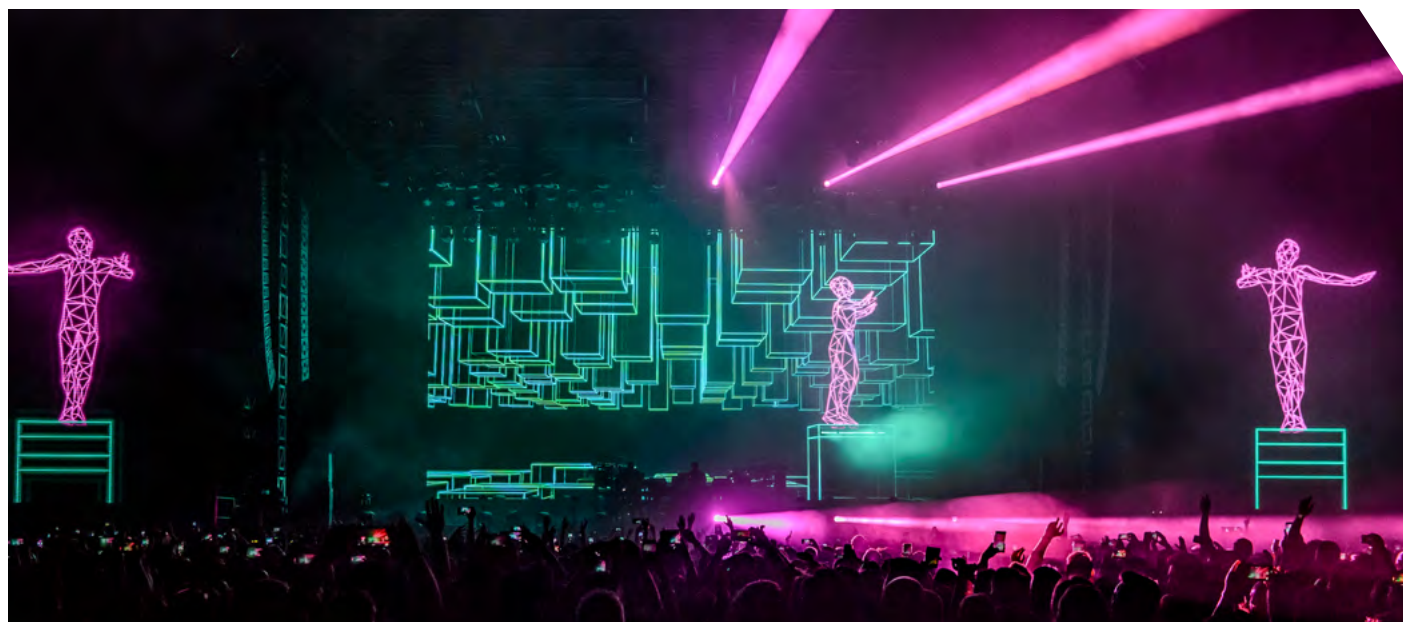
Toby Dennis

“We’ve also developed our own app that creates a relationship between Kinesys, the real world, Catalyst and the grandMA, resulting in all three different softwares talking to each other,” remarked Toby. “It means we can do some really fun stuff with mapping and physical movement of equipment. MA has their PosiStageNet that they use for tracking but we developed our own app which takes Kinesys feedback, PosiStageNet and also Catalyst, and allows us to create a 3D space that they all respond to.”

“The issue we had is that the automation system and the lighting control use different protocols, so we had to convert between the two,” concurred James Cooksey from Basic Monkey. “The whole show is so integrated with all departments really tied together and not just through the time code system. We’re



James Cooksey



**A-Series**



## Assume nothing.

It takes very little time for the A-Series to reveal its true colors: Coverage options to spare. Extra clever acoustic control. More flexibility. Fewer compromises.

Approach sound reinforcement from a different angle: [dbaudio.com/a-series](http://dbaudio.com/a-series)

**More art. Less noise.**

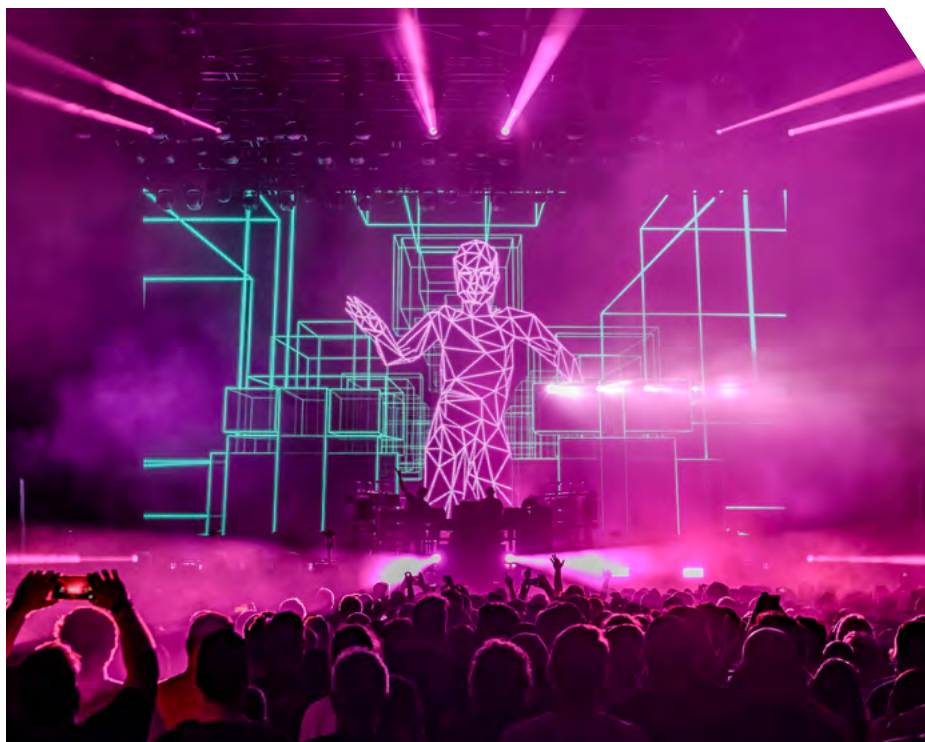
d&b  
audiotechnik 

**NAS**  
nas.solutions

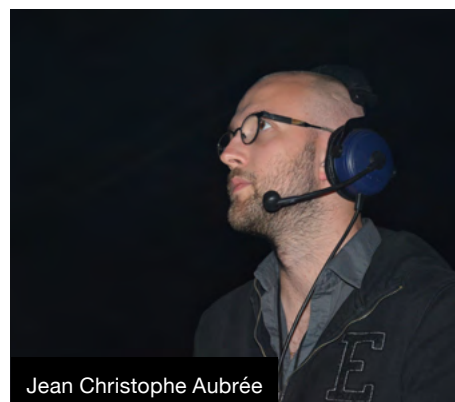
AU: 1800 441 440 | NZ: 09 414 4220 | [www.nas.solutions](http://www.nas.solutions)



**“They’ve got the spectacle down to a fine art.”**



Shan Hira



Jean Christophe Aubrée

taking automation code and integrating it with video content and all the lighting positions. Rather than being set pan and tilt, they take feedback from the motors. As the lights move down, the pods move and the lights track their static position, which is pretty cool.”

For The Chemical Brothers, what goes on the screen is the most visually important factor in the show. The show design always begins with a large screen. The lighting design is then based on how the visuals can be enlarged.

“It’s not your usual light show, as the lighting is present to help the content and the videos,” explained Jean Christophe Aubrée, lighting operator on the tour. “The lights interact through and around the screen, helping to give depth of field, and making the show more immersive.”

MPH supplied the lighting package for the tour including fifty Robe MegaPointes to create beams, wash and colours. Twelve MegaPointes each were positioned in lines

along the upstage and downstage edges of the stage, with another twelve rigged on the downstage truss. There were another ten behind the LED wall, rigged onto five moving pods together with some LED battens.

“What I like most about the MegaPointe is its’ size,” said Jean Christophe. “It’s a very compact fixture with so many features within. Normally that many features would result in a much bigger and heavier fixture. As we have twelve downstage on the floor a larger fixture would have looked ugly. They’re super quick – in movement and all the effects – and extremely easy to programme. The lens is very clear and sharp. For some songs we have lasers and MegaPointes on together and they match very well. The lasers have very saturated colours and we can do that with the MegaPointes too. They’re still very bright even with saturated colours, still very punchy alongside the lasers.”

Strobes are an integral part of Chemical

Brothers’ shows and for this tour they created a wall of them. As well as having TMB Solaris Flares downstage and on the upstage, there was a strobe wall of nine by five Solaris Flares on custom wire ladders which went up on mid-stage kinesys 500kg liftkets. The Flares delivered multi-coloured strobing at the level of intensity required, whilst their four-cell mode was used for different shapes and textures, giving endless visual options to play with.

MA Lighting grandMA3 consoles travelled over from the UK with the band, with two at FOH and two by dimmer city. The Kinesys tech is able to make sure everything is working well, as they can see the values coming in on the MA. It’s a fairly big network system with NPUs.

Jean Christophe describes his show file as very big but not complicated. However, there are many details, and the result is 7,000 cues!

It wouldn’t be a Chemical Brothers show

without a dazzling laser display and the tour was serviced by ER Productions. With careful planning and perfectly executed cues, ER's lasers created a stunning atmosphere using 18 Kinekets, (eight positioned along the downstage edge, eight upstage, and two located behind the screen on the Kinesys pods), one 30w Phaenon positioned centrally on a lifting column, a 24w Tripan centre stage, and four custom built Beambursts inside the eyes of the robots. All were controlled by ER Productions' senior laser technician, Tom Vallis, via Pangolin Beyond.

Sound engineer Shan Hira has been mixing The Chemical Brothers for 20 years and his FOH setup is unique, as it's all analogue. Consequently the control package has to tour with them, as you wouldn't easily be able to pick up this gear around the world.

**“I love the sound of the Midas XL4 and it would always be my first choice, but none of the other acts I work with let me use it!” said Shan.**

“Its footprint and truck space are an issue, but The Chemical Brothers are particularly keen to ensure they have the best sound possible. It really is the best tool for the job, especially as they use a lot of analogue gear onstage.”

Shan had a rack full of dynamics and compressors including four Smart Research C2 stereo compressors and a multiband compressor. There's also a Roland SRE-555 Chorus Echo to reproduce the smooth pre-digital echo and chorus sounds of the 1970s and '80s. Added to that were an MXR analog delay, an MXR flanger, a Mutron Biphase phaser, a Lexicon 480 reverb, a Lexicon PCM 60 reverb, a Lexicon PCM 41 delay, and a Roland RE-201 Space Echo.

As the set can change from night to night, Shan says he is basically just tracking what Tom and Ed are doing, following their mix, and enhancing it.

“There are certain things that happen at the same point every night but really it's about showing off what they're doing to the best of my ability,” added Shan. “It's an ever-morphing thing that changes every day, so it's exciting to mix. It's a big and loud show with plenty of bottom end and its quite sub-heavy.”

The PA was supplied by Eighth Day Sound who copied as closely as possible the PA the band will tour around Europe.

“It's the new d&b KSL system for main hangs, side hangs and delays,” commented Shan. “We also have some J-Subs in the air behind the main hangs plus some SL Subs and V-Fills across the front. I've used the GSL and the KSL and in my opinion they're the best sounding boxes out there right now. The reason we fly the subs is that we needed to get a bit more punch out of the system and it works well. It's what I'll ask for every time now.”

According to Shan, the Dome provided a lot of slap off the back wall, but he managed to get the back doors opened which took some of the pressure off, adding that it sounds like quite a slow room and a bit murky around 100Hz.

The audio control package came from Skan whilst Lite Alternative supplied the touring lighting control package and a few custom pieces.

“MPH filled in the gaps and have done a great job,” concluded Toby. “Big Picture did the side screens and provided some techs, and they're fantastic.”

WE HAVE YOUR EVENT  
**BACKDROP**  
SOLUTIONS

BACKDROPS  
*Fantastic.*  
AUSTRALIA



*Happy  
New Year*

**1800 737 037**  
[www.backdrops.com.au](http://www.backdrops.com.au)

OUR BRANDS:

EVENTS  
*Fantastic.*  
AUSTRALIA

BACKDROPS  
*Fantastic.*  
AUSTRALIA



PartyDrops  
Powered by Backdrops Fantastic

Modular  
BACKDROPS  
AUSTRALIA/USA

Light Up  
LETTERS

Claypaky Xtylos cut through on their stand

# LDI 2019

by Cat Strom

**Another year, another action packed few days at LDI in Las Vegas. Not so many world exclusive products and maybe less attendees than previous years, but still plenty to look at.**

Many products were 'exclusive to the US market' which usually meant they were launched at Frankfurt earlier in the year. There were, however, still a few surprises.

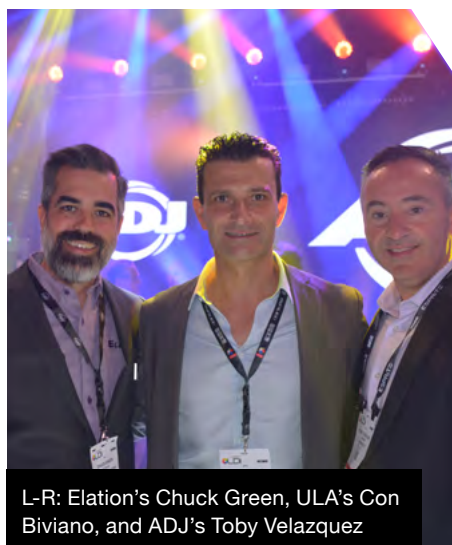
Informal chats with attendees resulted in the same few products being mentioned as 'cool', including a modern update to a true legend the VL5LED WASH, a compact, high output fixture with rich colours. The retina-blasting Super Flare from TMB was highly regarded as was the SGM G-7 BeaSt (BeamStrobe), something a little different with a design based on three major features: a bright throw with full optical control, the ability to expand the beam angle while keeping the light output, and a powerful pixel strobe blinder that boosts the punch. The result is versatile fat-beams, cool aerial scenes, excellent eye-candy effects, and impressive strobe/pixel/blinder.

MA Lighting surprised everyone with the launch of the grandMA3 onPC command wing XT; a 4,096 parameter console that can be used in nearly any location – just add a touchscreen monitor, and it's ready to go. Expect these to sell like hotcakes.

This year it seems like everyone was making their existing products IP65 rated, maybe in anticipation of climate change, with Claypaky, TMB, and most major luminaire manufacturers jumping on the band wagon.

## Around the Showfloor

**ADJ** - ULA Group used the show to announce that they will be distributing ADJ in Australia. ADJ launched a large range of products at the show including the Hydro Series IP65-rated moving head wash and a high power moving head beam fixture, as well as LED-powered follow spots and strobe fixtures.



L-R: Elation's Chuck Green, ULA's Con Biviano, and ADJ's Toby Velazquez

**Astera** previewed their new Wireless Pixel Bar available in 50 cm and 1 metre lengths as well as the two metre Hyperion Tube, similar to their highly successful 1 metre Titan Tube.

**Ayrton** carried on the tradition of launching wind-named products with the Shamal-LT designed for long-distance applications. A new type of beam/wash LED fixture, Shamal-LT is equipped with a 225 mm frontal lens, offering a zoom ratio of 12:1 and a zoom range of 3° to 36°. This entirely new, exclusive ultra-powerful luminaire will generate output of 50,000 lumens.

**ChainMaster** launched a new SK series of IP66 rated ChainHoists equipped with two brakes and easily adjustable external limit switches via a chain stop block that is mounted on the chain. If somebody needs to adjust the lifting limits, they don't have to open the hoists and adjust a gear limit switch.

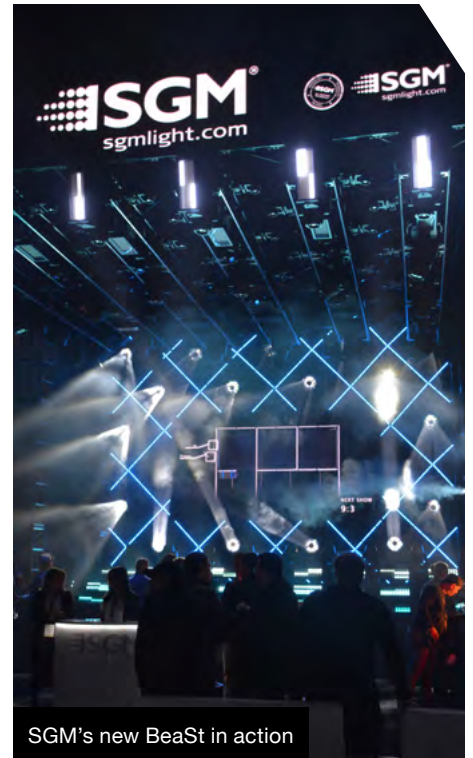
**CHAUVET Professional** won the Best Large Booth Design Award at LDI 2019 and also launched quite a few new products, including the most powerful mover ever in the Maverick series – the Maverick MK3 Profile. A fully featured 820W LED moving profile, it is powerful enough to handle the demands of the largest concert venues with a blistering output of over 51,000 source lumens. For outdoor reliability, the Maverick Storm 1 Spot is not just IP65 rated, but also has aluminium alloy housing, marine grade 316 stainless steel screws, M12 Gore valves, and a sunshield optical protection system.

The Rogue R2X Wash and Rogue R3X Wash are fully featured RGBW fixtures that bring a new level of brightness and color to the Rogue family and the COLORado Solo Batten 4 builds on the success of the widely acclaimed COLORado Solo Batten.

**Claypaky** premiered the Sharpy Plus Aqua luminaire, which is essentially a waterproof Sharpy Plus, and the ReflectXion moving mirror offering 540° pan and unique, continuous tilt movement at adjustable speeds.



Chauvet Stand



SGM's new BeaSt in action

The ReflectXion's mirror is the same on both sides giving you two highly reflective surfaces with which to direct light beams. Although not brand new, the Xtylos was their flagship product and certainly impressed many.

**Elation Professional** had five world premiere product launches in their award-winning Artiste, Proteus and Fuze product lines including the Proteus Lucius; a powerful, featured-packed yet compact IP65-rated

LED Profile fixture with framing. Elation Professional also launched a completely new brand of atmospheric effects under the name of Magmatic. The range includes haze and fog machines, atmospheric snow machines, CO2

# ALL-IN-ONE Redundant Playback Interface



## SW8-USB

The SW8-USB is the complete solution for performances that utilize redundant playback systems for backing tracks, combining two built-in high performance USB interfaces with an auto-switching feature that detects dropouts and effortlessly switches to the backup computer in an instant.



 **Amber TECHNOLOGY**  
ambertech.com.au

CONTACT THE AMBER TECHNOLOGY TEAM  
TO FIND OUT MORE  
1800 251 367  
sales@ambertech.com.au



ADJ Stand



Claypaky light show



VuePix InfiLed stand



GLP Stand was always packed



VL5LED Wash



Paul Walton and Ian Garrard

cryogenic simulation effects and a complete line of specially formulated effect fluids.

**ELC Lighting** caused a bit of a stir with their dmXLAN nodeGBx system, which they claim enables the creation of fully-redundant DMX networks, meaning a damaged DMX cable is no longer liable to be a show-stopper.

Secreted in a suite upstairs were **Martin Professional**, who launched the Martin ERA Performance Series that includes the 400, 600 and 800 fixtures, along with the first outdoor rated moving head, the ERA 500 Hybrid IP. The line caused a ripple of excitement with some saying that the ERA 800 could be the replacement for the MAC Viper, but rumour has it that Martin has something up its' sleeve

that is very exciting. Looks like they may have found their mojo again.

**GLP** entertained everyone with their new slogan 'We Give A F\*ck' and although there was no world exclusive launch, the stand was one of the busiest of the show. The recently launched FR10 bar and Highlander Wash Fixture were key attractions with the Highlander receiving an Honorable Mention at the LDI2019 Awards Ceremony for engineering and innovating the best framing shutter system in a wash fixture that the judges have ever seen.

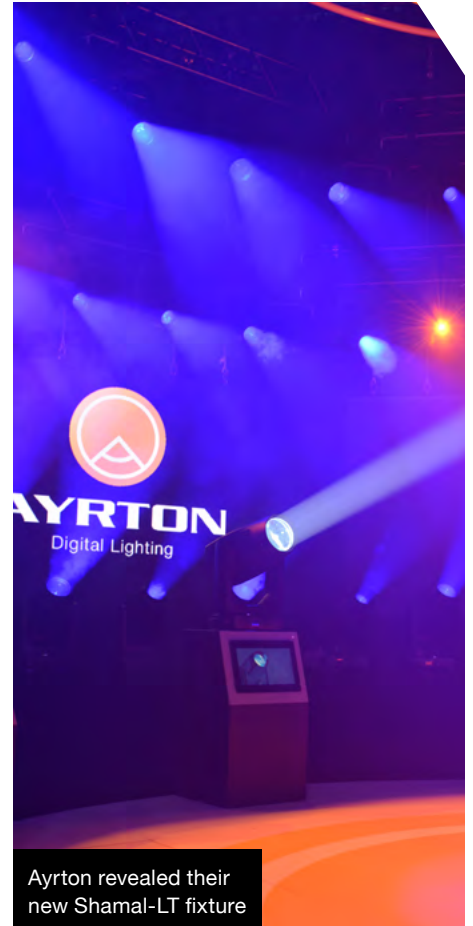
**Robe** also had no world premieres but drew large crowds to their usual over-the-top live show. The ground-breaking ESPRITE LED

profile moving light is the first in a new series of Robe luminaires that will feature fully replaceable / transferable white source LED engines. TETRA2 (from Tetragnatha) is a new linear bar fixture that builds on Robe's Spider and Tarrantula LED technology. Utilising the same LEDs, with an ultra-tight 4.5° beam from each of the 18 pixels, these can be combined to produce a bright, highly defined "sheet" of light or Svoboda-style light curtain, and the fixtures can be positioned end-to-end for longer seamless curtains of light or washing effects.

**Robert Juliat** previewed the new 800W LED followspot, Arthur 1179, which is expected to be available next year.



Robe Stand



Ayrton revealed their new Shamal-LT fixture

**VuePix Infiled** continue to produce lighter, easier to assemble and brighter screens, such as their new HR Series, but it's their innovative automatic retractable corner protection that really impressed. These protect the LEDs from damage during installation and transportation with no manual operation required. Check it out!

**Drones** are becoming a hot commodity, and this year they were flying both inside and out,

with Intel presenting a drone show outside of the Las Vegas Convention Centre after the sun set.

Finally we say a long and fond good-bye to the Hard Rock's Circle Bar, a place where no good ever happened, yet still attracted hordes of the lighting fraternity night after night. The hotel ceases to be as of February, rebranding under the Virgin moniker.



**PRODIGY SERIES**

Visit us at the ENTECH Roadshow - Australia's one day AV Expo  
 March 2020 in Perth - Adelaide - Sydney - Melbourne - Brisbane

**P** | +61 2 8011 0500  
**E** | info@tm-systems.com.au  
**W** | www.tm-systems.com.au

bringing technology together



Dante Domain Manager™

**Dan Dugan**  
 SOUND DESIGN  
 WWW.DANDUGAN.COM

**TiMax**

**dataminer**  
by aster communications

**GlenSound**

**DIO**  
DANTE INPUT/OUTPUT

**Smart pi**

**EDC**  
EDC ACOUSTICS

**digital PA**

**brähler**  
SYSTEMS



Alt-J

# IMMERSIVE LIVE SOUND - THE STORY SO FAR

by Julius Grafton

**Two years ago Immersive Audio or Spatial Live Sound rolled out into the live audio market simultaneously from L-Acoustics (France) with L-ISA, and d&b audiotechnik (Germany) with Soundscape. CX travelled to both manufacturers to hear the systems and talk to the engineers in October 2017.**

Our December 2017 edition leader shouted: 'The Revolution has arrived! Spatial audio mixing - sound for the stage'. Many were excited, some cynical, but while it is taking time, the revolution truly has arrived. Next month many audiences will start to hear the first large venue installation at Sydney's new Coliseum Theatre located at Rooty Hill.

The Coliseum installation is a basic frontal system of five hangs across the proscenium which is the minimum required for the DSP to make the magic. Put simply, where previously you had left and right stereo, or LCR, in reality you were really using a loudspeaker system as dual or triple mono since only a narrow slice of seats at the centre of the room got any separation.

With these new systems, those five (or more) front speakers, allied with the DSP and the proprietary software each supplier offers, take on an entirely new form, becoming one cohesive sound field. In that field, you can

place any of your mixer inputs into a three dimensional field.

Anyone who hasn't heard it is by about now getting confused about 3D, 5:1, surround sound and thinking of systems like Meyer's Constellation that does a different job by transforming dead venue spaces into apparent orchestral halls. Immersive Audio is different. There are many benefits, I'll break them down here.

## It Sounds Better

As The Grateful Dead proved with their epic Wall of Sound in the early 1970s, sending individual instruments and voices to individual speakers improves clarity. It made for a whole lot of expense and interference as well, so it never took off. Yet consider what we expect a concert system to do - each element (speaker box) of a line array is dealing with everything within its frequency response range.

There is a chaos of sound coming out of

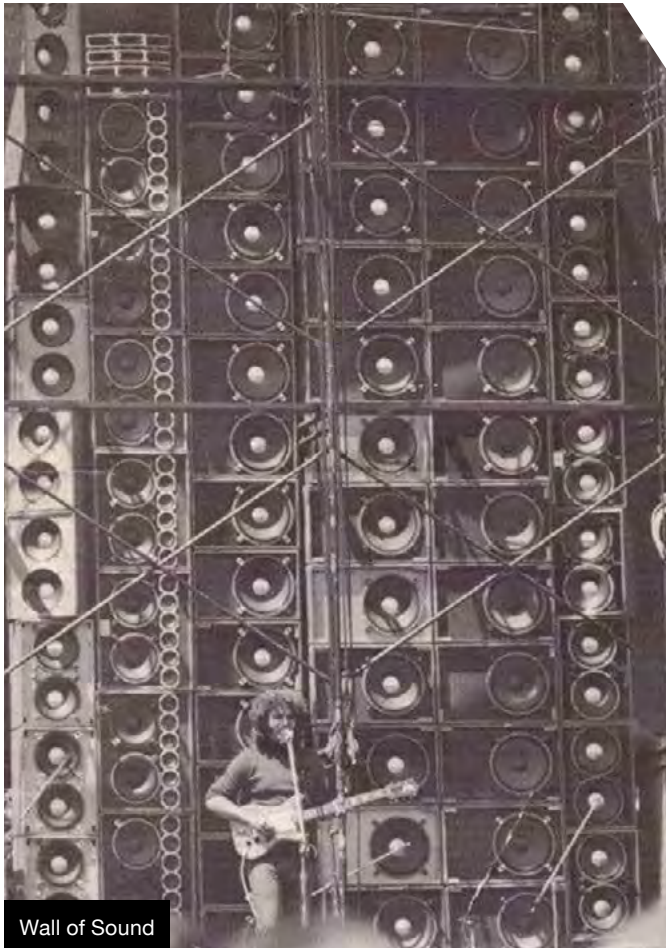
each element. But if you have five sets, each handling numerically less instruments and voices, it will and does sound clearer and perceptibly quieter, even at the same SPL as a normal system. These benefits are proven when listening to one of these systems.

In use, the live sound engineer mixes the show in the normal fashion, but each input channel is shared over to the system processor post EQ and post dynamic section (gates, limiters). The regular system output of left and right also goes off the processor. (d&b have the LS-100, while L-Acoustics call theirs the L-ISA processor.)

At the processor, a graphic user interface allows each input to be placed anywhere in the field, with the processor then deciding how much of it will go to one, some, or all of the speakers in the field.

DiGiCo, Avid, and some other console brands have or will offer a plug in for each channel that allows joystick placement, right off the console screens. With some shows there is a new and exciting audio specialist you may call a 'Spatial Engineer' doing the placements.

Some shows don't need anything to move once set, others have programmed complex cues and automations. In every case, in use the system disappears and the artists come forward. Even a straightforward concert rock band sounds larger and better when the sound field puts everything back into the stage space from where the sound starts.



Wall of Sound



Stereo coverage at left, L-ISA 'ZONE' at right. System in Krakow Arena.

We have been so conditioned to the compromise of left-right speaker placement that it takes something totally different to show change.

**But What And Why?**

Aerosmith have a residency now in Vegas, and that system follows the singer as he moves around the stage. This can be done manually, or using a tracker. Broadway and West End theatre audio designers are doing this now as well – an actor's voice moves with them.

One example is a Soundscape system for a show called Lehman Trilogy (see picture). It has three actors in a glass box on stage with a video wall behind them. Soundscape is used to ensure that everyone in the 1,000 to 1,200 capacity tiered venue believes that they are inside that box with the actors and that there is no amplification.

An orchestra is the ultimate implementation for these systems, and that was what I saw in real life this September in Krakow Poland at an L-ISA show. With that one-off production, the audio crew came in at 1 AM, and by 5 AM had hangs (five hangs of 12 Kara, and two hangs of nine Kara) done. Rehearsals started mid-morning after consoles and programming.

There are large scale touring productions using these systems, and once integrated, setup times for five to seven hangs are very close to what you'd expect with two larger, heavier, hangs of PA.



# NEXT GENERATION LED PROFILE

The new Martin ELP LED Ellipsoidal Profile with remarkably high CRI, TM30 and TLCI values.

Advanced Optics | Easy to use | Industry-standard gel and gobo compatibility | Four-blade manual framing shutters | Support for 3rd party lens tubes | Center of Gravity close to yoke | Engineered in Denmark.



Contact the team at Show Technology to arrange a demo and shoot out, email [sales@showtech.com.au](mailto:sales@showtech.com.au).

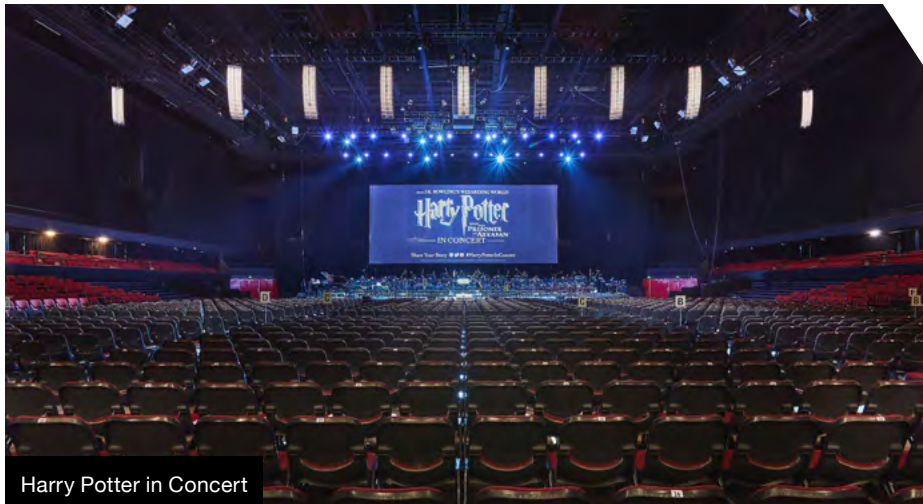


SYDNEY • MELBOURNE • PERTH • BRISBANE • AUCKLAND

[www.showtech.com.au](http://www.showtech.com.au)



Broadway show, 'Lehman Trilogy'



Harry Potter in Concert



Harry Potter in Concert

So far we've only talked about the frontal sound field, but all these systems want you to hang more speakers in a circle around the venue – because they can deliver to them, and also so you buy or rent more speakers as well. The EDM (Electronic Dance Music) producers are wild about this for massive festivals – and smaller tent venues as well.

Early adopters are using it because they see the benefits. Mark Knopfler did an arena tour with L-ISA, Kraftwerk and Bjork are among many using systems for one-off shows. Australia's NW Group's Marine AV division installed several systems on cruise liners recently.

**The End - Of The Beginning!**

L-Acoustics are now calling this 'L-ISA Immersive Hyperreal Sound' in full, while d&b keep it as 'Soundscape'. Both firms are strangely similar in size, and they have both added about 25% more staff since these systems rolled out.

The one thing the two Europeans haven't really started to do is to educate the mainstream concert and theatre reviewers on the benefits. Both firms sent me half a dozen reviews that touched on the sound in a positive light, but

none of them understand why they were enjoying 'clear, unusually good, live sound'.

My theory is the Europeans needed to roll this out at a controlled pace to avoid losing control of demand. As it is, both firms boast thousands of shows already run, to millions of people. It is 'mature technology', they say, and on that these systems come with a fail-safe possibility that reverts all the speakers back to regular mono should the processor have a moment.

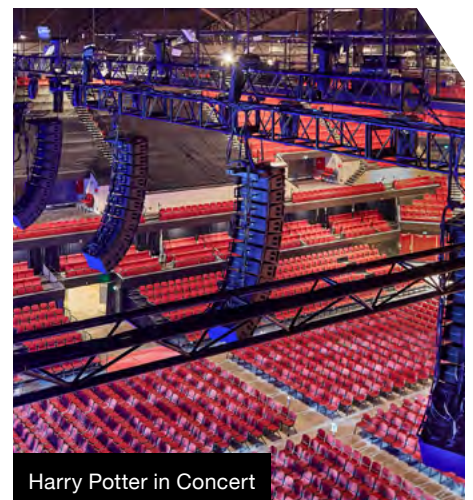
As to who is buying and who will buy? Production firms are starting to buy processors – NW Group, Novatech, and Elite in Canberra can all offer this enhancement to their systems. A rumoured demo theatre in Sydney will add momentum because it's pretty obvious that the proof is in the listening.

While NW Group work on exciting their high rolling corporate event clients, thus encouraging them to spend more and get the best, the big five-star hotels and convention centres will start to get interested.

It is not a two-horse race, but rather we look at the two market leaders battling it out, while Meyer Sound, Barco's Iosono, Astra, Meuller-BBM, and new entrants are rushing in.



Harry Potter in Concert



Harry Potter in Concert

# YAMAHA'S AFC3 from Acoustic Enhancement to Spatial Audio

by Jason Allen

DSP innovator Yamaha released their first digital acoustic enhancement system back in 1985. Over the years, they've constantly improved their technology, with AFC3 (Active Field Control) the latest in the range. Tantalisingly, at ISE in Feb 2019, they teased AFC4, which adds object tracking and spatial audio options.

I dropped in to Yamaha's Premium Piano Centre in South Melbourne, not to tinkle the ivories, but to meet with Simon Tait, Systems & Applications Engineer - Commercial Audio at Yamaha Music Australia, and hear AFC3 in action. Built into a refurbished commercial space that's all concrete and plaster, Yamaha needed to improve the acoustics to best showcase their top-of-the-line concert grand pianos. After treating the walls with acoustic

panelling, Simon and the team kitted out the space with a grand total of 44 loudspeakers, and the AFC3 processor. The results are impressive.

Having had the tour of the Piano Centre, played a few ham-fisted chords on pianos I could only afford in my wildest dreams, and caught up on what Yamaha's Commercial division are up to, Simon cunningly demonstrated AFC3's capabilities by turning



The Piano Centre's AFC3 processor racked up. Usually hidden in the cupboard, it can be wheeled out for maintenance

**THE LOOK**

DRAPÉ HIRE  
www.thelook-sydney.com

New Address: 17 Greenfield St Banksmeadow NSW 2019  
Email mail@thelook-sydney.com • Ph 02 9797 6068 • Fax 02 9798 9243

## Case Study

# Yamaha AFC3 Active Architecture System at the University of New South Wales

Designed to allow for creative works of every type, Io Myers Studio is a fully flexible performance space under the stewardship of UNSW's School of the Arts & Media. It recently underwent a complete rebuild and relocation to a brand new home on UNSW's Kensington campus, with a number of significant upgrades including a 40-channel Yamaha AFC3 Active Architecture system to control the studio's sound field.

Io Myers Studio's AFC3 system endows the space with instantly variable acoustics so that any conceivable type of performance can enjoy the correct sonic environment for the audience and performers alike, ranging from theatre and spoken word right through to orchestral, solo instrumental or chamber music. This new level of adaptability has led to a much wider range of bookings than was possible in the studio's old home next door; a typical example of how an investment in variable acoustics makes artistic and commercial sense for a truly multipurpose venue.

With increasing pressure for facilities to become more multipurpose and accommodate a wider range of applications, AFC provides a cost-effective alternative to mechanical means of modifying room acoustics. It is a truly scalable solution which can be installed in a wide range of venues including (but certainly not limited to) performing arts venues, houses of worship, theatres, auditoriums, concert halls, and opera houses. Even retail spaces have benefitted from AFC's ability to enhance the natural acoustic environment as a way to elevate the customer's experience. Yamaha AFC systems can be found in hundreds of facilities worldwide, and are built on the same hardware platform as Yamaha's sound reinforcement and installation product line-up enabling highly cost-effective and flexible systems to be adapted to any sized venue.

Working alongside Kim Jones and Tom Brickhill from ARUP's Acoustics and AV team, Yamaha designed the Io Myers Studio AFC3 system to provide fine control of early reflections, diffuse reverberance and warmth, as well as the ability to adapt to multiple seating and stage locations. This initial design required only the room's drawings and estimated acoustic profile, and differed very little from the final configuration. The empty room has a reverb time (RT) of about 0.9sec without the AFC3 system activated, ranging right up to 2.3sec depending on the selected preset. System tuning was carried out by Hideo Miyazaki and Dai Hashimoto of Yamaha Corporation's Spatial Audio Group and Simon Tait of Yamaha Music Australia.

"I don't think it is an exaggeration to suggest that this space represents a new era for Sonic Arts and music in general at UNSW, and I'm truly excited to see (and hear) what will happen as this inviting venue grows into a home for culture, community and experimentation," said Dr. Adam Hulbert, Sonic Arts Convener at the School of the Arts and Media, UNSW.

Io Myers Studio is available for commercial hire when not being used for teaching and research activities. For enquiries please contact the UNSW Creative Practice Lab:

<https://www.arts.unsw.edu.au/sam/get-involved/venues-hire>

it off. The space immediately went from a pleasantly live acoustic that my ears assumed was totally natural to almost eerily dead, and not ideal for performances on high-end pianos.

"That's my favourite way of demonstrating what AFC3 can do," said Simon. "We've had all sorts of audio professionals in for demonstrations and done exactly the same thing to them. Even with golden ears, most don't realise it is on either. The results are quite dramatic; once a vision-impaired person that was present asked to have it turned it back on because he wasn't sure how to find his way around the room anymore."

The AFC3 system in the Piano Centre consists of 30 tiny Yamaha VXS1ML surface

mount loudspeakers fitted along lighting track, six Yamaha VSC6 6" ceiling speakers, and eight VXS10S 10" subwoofers cleverly concealed in the ceiling behind repurposed air-conditioning vents. All are powered by Yamaha XMV8280-D amplifiers. A Yamaha MRX7-D processor handles system delay, EQ, limiting, and extra inputs from wall plates for presentations. All signal is distributed within the rack via Dante, and a Yamaha DCP4V4S wall panel controller provides simple preset switching and volume control.

At the heart of the system is the AFC3 processor itself, which is from the same generation of Yamaha open architecture DSP as the DME64-N, but with added AFC-specific processing and hardware modules, FIR filters, and convolution reverb processors.



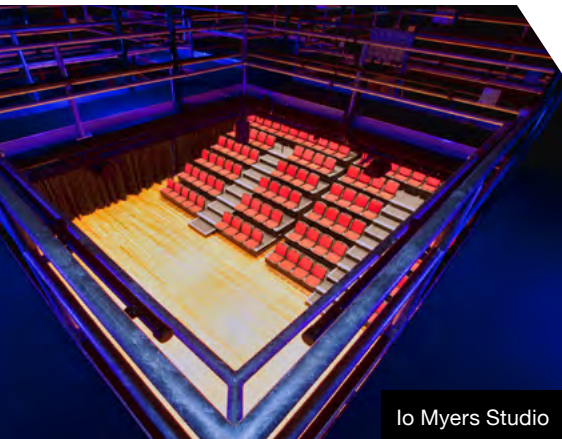
Simon Tait

The room's natural sound is picked up from four carefully hung Rode NT55 condenser mics with omni capsules at the boundary of the space. After the signals are sent to the AFC3, they are put through a processor-intensive process of adding reverbs, decay times, and filtering. Simon has set the AFC3 to reproduce a pleasant 2.1 second reverb time. The space now hosts internationally renowned concert pianists, jazz legends, and other Yamaha endorsees for regular concerts.

The ever-decreasing power-to-price ratio of DSP processing, ever-cheaper amp channels, and the cabling and labour savings represented by networked audio transport means that acoustic enhancement systems like Yamaha's AFC3 are now within the financial reach of most venues and spaces. "School halls can now consider acoustic enhancement," Simon points out. "Anyone with a multipurpose venue that is a commercial venture should consider it, as it expands the type and variety of bookings you can take." Another huge upside is AFC's potential for spatial audio.

"AFC4 was announced at ISE in February," Simon explains. "The demonstration they ran included object-based panning. They fitted a soft toy with a tracker, and threw it around and over the audience. A violinist played sound effects that mimicked the toy's path through the air, and AFC moved that violin signal through perceived acoustic space along the path the toy took. The hardware hasn't been released yet, but we're already scheduled for training on the new product. All this means that in the near future, when you've built an AFC system with distributed loudspeakers, you've also built a system that can do object-based panning. More and more venues will take up this option, as it just makes commercial sense."

Yamaha is set to have AFC4 available early 2020 and the Audio Technology Solutions team at Yamaha Music Australia already have a series of events planned in order to discuss AFC4 concepts, system design, deployment and tuning. To register your interest in attending a session, please visit [au.yamaha.com/audioversity](http://au.yamaha.com/audioversity)



Io Myers Studio



Io Myers Studio



WINNER OF THE  
**plasa 2016**  
AWARDS FOR INNOVATION



Intensity Colour Picker Colour Gels Pan & Tilt Shapes Beam Control Animate

## Mantra Lite

What you imagine, you can create

- > Ideal for schools, houses of worship, rental and smaller venues
- > Familiar app-based touchscreen operation, ideal for novices
- > Controls up to 24 lights – expandable to 36/48 with Wing/s
- > Designed for dimmers, LEDs and moving lights
- > Unique animate function for instant chases
- > Shapes for dynamic pan/tilt effects
- > Store/replay cues, chases and cue lists
- > Internal 240V power supply with mini UPS and auto save
- > IPCB filtering
- > Tap-to-the-beat live timing



[mantralite.lslighting.com.au](http://mantralite.lslighting.com.au)  
email [info@lslighting.com.au](mailto:info@lslighting.com.au)



# STEREO TYPICAL

by Andy Stewart

**In the world between our two speakers, there's a universe of sounds we can craft, and countless techniques we can deploy to trick our brains into thinking we're floating in three-dimensional space. Unfortunately, most people leave decisions about the stereo imagery in their mix 'til after the recording phase is over.**

This represents a huge missed opportunity to create unique recordings. It also demands more of the mix process, and leans more heavily on the use of artificial space. Why not just record cool stereo images instead?

Stereo pairs – when it comes to microphones, we love them! So much so that some of us revere the 'matched pair' like a two-headed deity, particularly when sequential serial numbers are involved. Two Neumann U67s with serial numbers 006 and 007... it's as if I'd died and gone to heaven.

Matched pairs can capture beautifully balanced stereo images, as everyone who records audio can attest. For some instruments, or groups of players, a matched stereo pair represents an awesome recording tool.

But something happens to our brain when we associate stereo pairs too closely with stereo images. Are they the same thing? Can you even record stereo properly without a matching pair of microphones? Well, depending on your point of view, and what you mean by stereo, abso-bloody-lutely!

## A/B Or Not A/B – That Is The Question

One of the least explored aspects of the modern-day recording process is the way a 'stereo image' is captured. Most people associate this concept directly with only one approach: two microphones, preferably of the same make, placed symmetrically in front of an audio source, recorded to two tracks of audio, and panned left and right on the console to reveal a wide, balanced, phase coherent stereo image. Ninety nine times out

of a hundred, this is exactly what's recorded. In the case of a solo instrument, this source is invariably placed dead centre in the image.

## Now the big question is simply, why?

Why put every audio source dead centre in a recording's stereo image, particularly when the arrangement is a complex one? There are a couple of obvious answers we must touch on here first, before we take a hard left turn off this conventional road into a vastly more creative and exploratory way of thinking about stereo.

Firstly and foremost, this conventional miking technique is about phase coherence. By placing the source dead centre of the image, and by using two matched microphones positioned in some version of a coincident pair, we capture a clear and stable image that's often wider than the alternative: a mono microphone positioned in virtually the same 'piece of air'. Secondly, when there are very few instruments in an arrangement, perhaps even only one or two, any extra width and space can be vital to the final mix. Indeed, the mix can often simply be the unadorned sound of this high quality stereo image.

But often, and particularly once an arrangement gets busy, this extra width is often lost, barely audible amongst the barrage of other sounds vying for your attention. The subtle soundstage captured during the recording is all but consumed by the complex nature of the final arrangement and mix. More often than not this inevitably leads mix engineers to do what some recording engineers can barely acknowledge: they pan (or worse, maliciously damage) the stereo



images to exaggerate their perspectives.

Sometimes a mix engineer will affect only one side, turning the prescribed second channel into a radically different, reverberant and distorted echo of the original recording. At other times they will simply ditch one channel altogether, to avoid the common situation where 10 stereo recordings panned left and right combine to create a giant, unfocussed lump in the phantom centre of the image.

I could go on about this for 10 pages... seriously.

But instead, let's look at ways we can be more creative in our recording adventures. The key to unlocking this more ambitious, exploratory mindset is to think ahead!

## 1: The Look-Ahead Uninhibitor

Look ahead into the production of a song, or piece of music, and ask yourself (particularly if you're reaching for a coincident pair at the time) what do I predict this sound to ultimately be, and how big is the final arrangement likely to get?

Now if it's a blockbuster rock song, with lots of instruments, vocals, and a predictably large-scale mix, you probably know this from the outset: the final stereo mix is going to be big! This is precisely the time to think differently about stereo. You are not serving the individual sounds here; you're serving the mix. To that end, 25 overdubbed instruments recorded symmetrically in X/Y will not automatically produce a large-scale final stereo mix. On the contrary, they may make it a blurry, lumpy mess, particularly if every source is in the centre! Similarly, a pair of super close guitar amp mics will only really provide you with tonal options (not a bad thing), and a pair of acoustic guitar mics in X/Y might end up doing squat in the final mix

(and maybe, upon reflection you'd be wiser to record two individual mono takes of acoustic).

Why not instead think in more exploratory terms: put a great mic on the guitar amp (if that's what you're recording), a second across the room 20 feet away, and a third (yes, a third – stereo recordings aren't, by definition, only two mics – you could use six if you like!) placed as far away from the source as you can, to capture ambience unique to that space. The more you go for unique sound capture during the recording phase, the more spectacular and individual the final mix will be.

**2: Informed Decisions**

The further into the session you get, the clearer your perspective presumably becomes on the role of a particular overdub. For instance, when you're recording a big backing vocal, and it's the 75th sound in an arrangement, it's likely being recorded for a specific purpose. Sometime it pays to put these sorts of vocals into a new space, not just yet another mono or stereo image. Here you might choose to place the artist quite asymmetrically in a stereo image. To do this, simply setup a conventional stereo pair, but do not put the artist dead centre in that image. Get them to move around in the space until it sounds cool to your adventurous ears. When panned hard left and right, you

get all the air of the recording, but the source positions itself left or right to some degree or other, depending on where they're standing. When you start exploring this technique, a whole universe of sounds opens up to you.

The trick is to consider phase here. The more identical an audio source sounds in two (or more) microphones, the more potential there is for phase issues to crop up. But that's okay, we're looking to exaggerate our stereo perspective anyway, and the best way to do this is to have our mics sound different, not virtually identical. By placing mics further apart, using different makes and models, different compression settings, and different polar patterns, we're going to end up with recorded audio that's sufficiently different in its waveform that phase applies less and less critically. By the time two mics are recorded, where one is shoved against an amp and the other is across the room in figure-eight with its null pointing back at the source, and a compression ratio of 20:1, the chances of the two affecting one another's phase is effectively zero.

**3: Space Exploration**

The bigger a production gets, the more scope there is for an engineer to think 'mono' and 'space', rather than left and right stereo. This sounds nuts in some respects, but it's true. Big, complex song arrangements and

mixes require definition and contrast, and things placed close and central in that final stereo image need all the help they can get to be heard. So there's no point insisting on recording in X/Y over and over again for every stereo overdub – particularly the more incidental ones – because at some point this approach serves virtually no purpose.

Instead, go for good mono sources occasionally, and record the space conceptually as a separate component of the tracking. This can be a mono mic, or several mics all positioned differently, all designed to serve the final mix in more creative ways.

**4: All Bets Are Off**

Finally, when it comes to stereo images there are no rules defining what's good or bad, apart from phase. If two mics are horribly out of phase, you're better off with one; otherwise your mix will change radically in mono, mostly to its detriment. Beyond that, how stereo is achieved is all about your decision-making process: do I love the sound, does it serve the production in context, and is it phase coherent? It might be the main vocal you're recording, or the 100th overdub on the session – it doesn't matter. Explore the space, ditch conventionality, and exaggerate the differences between your mics. You will never look back once you do.

**TASCAM**<sup>®</sup>

Multitrack Live Recording Consoles

Analogue warmth.  
Digital workflow.

**3 Year Warranty**  
upon registration at [cmi.com.au](http://cmi.com.au)

**New**

**Model 16**      **Model 24**

					
<b>Record</b> 16 Track Digital Mixer	<b>Mix</b> 14 Channel Analogue Mixer	<b>Connect</b> 16 Channel USB Audio	<b>Record</b> 24 Track Digital Mixer	<b>Mix</b> 22 Channel Analogue Mixer	<b>Connect</b> 24 Channel USB Audio

Find your local authorised retailer at [cmi.com.au/tascam-dealers](http://cmi.com.au/tascam-dealers)

# Live streaming gigs from Blind Chihuahua's remote studio

Audio, video, live bands, 4G, paying customers, Internet, live Internet. What could go wrong?

by Paula Jones

**Yeah - Blind Chihuahua decided to take on this daunting task. There's a lot of moving parts to all this so let's dig in shall we?**

Bit of background: I'm a long time studio engineer, working mainly in the US the last 30 years. My partner Ringo and I decided to move back to Sydney to give our daughter a taste of a kid's life in Australia. In the US, live streams of major concerts and festivals are a weekly occurrence, I'm sure most here in Oz are familiar with live streams of Coachella and other such bacchanalian extravaganzas of light and sound. We noticed if we couldn't go to a show in Oz that we couldn't stream it either, generally speaking. So when our wonderful friends at EI productions here on the Central Coast, Neale and Caroline Mace, were selling their beloved Midas H1000 - which I love and really wanted - we got an idea that perhaps there was a hole in the market here for dedicated live stream mixes that the Midas could fill, and off we went.

We got the rest of the kit, and a 40ft Hino motorcoach to put it in, and Blind Chihuahua was born.

We've had to learn a whole bunch of new stuff that we never knew existed. First, how to convert a bus into something useful - ie a great mixing environment. Then, how to stream. Live. To the internet. While mixing a band. With video. Yikes.

Here's where we're at, and this is a full-on journey (literally and figuratively) of new tech and a constantly shifting landscape, so it will likely be a completely different place this time next year.

The gear setup is deceptively simple; we have the Midas of course, which handles all the actual balance and EQ, and is the front-end pre setup if we're hooking into the stage via copper snake. In order to get signal in and out of it we bought a Ferrofish A32 Dante, after lots of research into the Focusrite RedNet series and like-minded A/D converters.

The A32 Dante is a fantastic sounding box that takes 64 by 64 channels of Dante over Cat5/6, or 64 by 64 MADI over either optical or coax (at 48k). It's also capable of four independent 8 by 8 ADAT I/O over optical. And most importantly for us, it has 32 analogue I/O by way of eight Tascam DSubs. Additionally, it adds MIDI over MADI as a feature. You can run independent mixes to the headphone output, and you can route any of the 356 simultaneous inputs to any other output in blocks of eight, so if we're coming in MADI from the stage or FOH we can route the outputs directly to our DAW via Dante Virtual Soundcard, which is what we use for I/O in our Macbook Pros.

I find the whole routing matrix a bit like playing 3D chess, because you really can route anything anywhere, but it's so flexible that we can run pretty much any analogue/digital combo the situation calls for, which is essential as we interface with completely different production setups every show. If we require a higher input count, it's just a matter of hiring in another A32 and running one more Cat6. Word clock is pretty flexible too,

Paula Jones is an Australian recording engineer/producer who has worked with Elton John, Michael Hutchence, Stevie Nicks, Rob Zombie and many others. She was nominated for the Australian Engineer Of The Year ARIA for her work engineering/mixing the Max Q album with Michael Hutchence. She engineered "Can You Feel The Love Tonight" which went on to win an Academy Award for Best Original Song. She has worked in many high-end studios worldwide such as AIR, Record Plant and The Townhouse. Paula now lives near Sydney where she runs a mobile live streaming production company and platform, Blind Chihuahua, which she founded with her husband Ringo Hanson.



Paula Jones

we can either slave to the digital stagebox/console or use the A32 internal generator as the master. Dante and MADI connections are dual redundant, as are the two power supplies. Routing in the Mac is handled by the Dante Controller app, which is really helpful for routing DAW channels to whatever Midas input we like.

It would be great for us if there weren't a bunch of proprietary AoIP systems used by various live console manufacturers. It throws a real spanner in the works when there's a stagebox using its own network protocol. I'd be pretty happy if they picked MADI or Dante and were done with it.

Our signal processing and multitracking is handled by i7 Macbook Pros using Logic. Logic is just my preferred DAW and is solid as a rock (so far) through any OS update, and is pretty CPU light. We keep it fairly simple with a template of smooth comp/limiting, over pretty much everything, to keep a bit of control over transients and dynamic performances. (We have one running live and one with an identical setup loaded for redundancy purposes, as it's just a matter of plugging in one Cat6 should the MacBook running Logic go down). There's some great flavour in the Logic native plugins; the Pultec emulation is very useful for example, and we keep the third party plugs to a minimum because our main mission above all else is to keep a great sounding mix running. The less that can mess that up the better.



Blind Chihuahua



Blind Chihuahua studio



Ferrofisch

Depending on the gig production setup, we either run all inputs via Dante into Logic and then breakout the tracks individually into the Midas, so we can EQ and mix live, or if it's an analogue stage box we run a splitter directly into the Midas preamps and then direct out every channel back into the A32, which then sends to Logic for a bit of DSP, which we monitor via returns back to the Midas. Logic's stereo bus (with master bus processing over it), the reverbs, FX and audience mics are broken out separately. We hit record for soundcheck so we can tweak the mix and of course this setup enables us to multitrack the show for safety and post. Our biz partner Kalju Tonuma and I mix together, and given

that people are listening to it on iPhone buds and TVs, we need to be all over everything really quickly. We don't have that lovely cushion of huge SPL and energy that you have inside the venue, so we are very mindful of dipping the sharp notes and translating the vibe of the room. There's a lot of riding of stuff, especially the ambient mics and verbs.

This means we actually track to Logic our live mix rides and tweaks, which you'd think would be a problem later but actually works really well. There's no Line IP on this Midas, so we handle difference in mic/line level using the 20db pad at the IP gain stage. The stereo master outputs of the Midas then sends

the stream mix to a hardware encoder for streaming, which is the last stage, regardless if we come in from the venue analogue or via AoIP.

Which opens up the rest of the discussion - the encoders, cameras and streaming platform - which I'll cover in part two. That's where it gets really interesting for us....

You can check out our shows at [blindchihuahua.com](http://blindchihuahua.com). If you buy a show of Steve Balbi's or Justin Dorin's we'll donate the proceeds to koala hospitals in fire zones, but if you don't want to do that you can catch Steve's show for free by using the voucher BALBILIVE26



## THE COMPLETE RANGE OF ADJ NOW AVAILABLE FROM ULA GROUP



**CONTACT OUR TEAM  
TODAY FOR A DEMO**

1300 ULA GROUP | [INFO@ULAGROUP.COM](mailto:INFO@ULAGROUP.COM) | [ULAGROUP.COM](http://ULAGROUP.COM)



# SAY HELLO TO S-PLAY

The smart player for light shows.



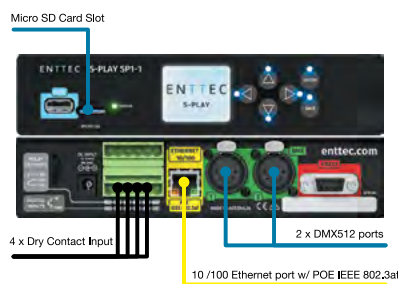
## by ENTTEC's VJ Suriya

Not every project requires an on-site lighting operator to respond in real-time to an unpredictable performance. Often, the ideal light show is a standalone one, pre-programmed and set to play back flawlessly to predetermined events, precisely when and where you want it to.

ENTTEC was founded on the DMX Playback, a unit many of you may be familiar with, and in the year of our 20th anniversary, we have been hard at work to come out with the S-Play: your go-to controller for recording and playback!

In simple terms, think of it as being a video recorder for lights – only so much more because it can trigger non-lighting events too. With intuitive, onboard controls to record, edit, schedule and play cues, you don't have to be an experienced lighting designer to conjure up amazing performances using the S-PLAY, but your audience will think you are. Plug and play light show technology has never looked so good or been this easy to master.

### Flexibility

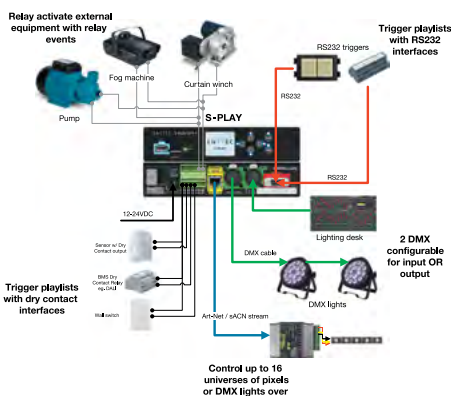


Designed with flexibility in mind.

Do you need to playback in DMX? We've got you covered with 2 DMX ports that can be set as inputs or outputs.

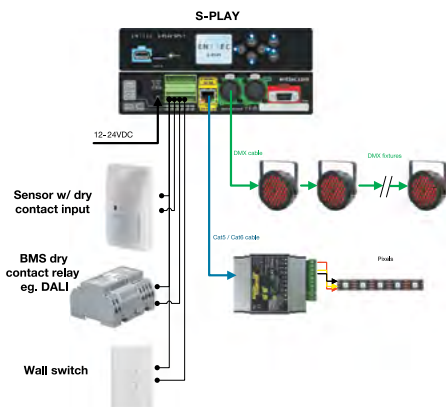
Do you need to play back more than two universes of pixels without leaving a laptop on site to run mapping software? S-PLAY can output up to 16 universes over Art-Net or sACN.

Do you need to run some long/complex shows? The removable SD card means that you can easily expand your storage to suit your needs.



### Triggering

S-PLAY comes with a ton of triggering mechanisms to help you meet the unique needs of your install. We have the standard HTTP, RS232 and DMX triggers you are familiar with from our DMX Streamer or E-Streamer, but we're most excited about the GPIO triggering system.



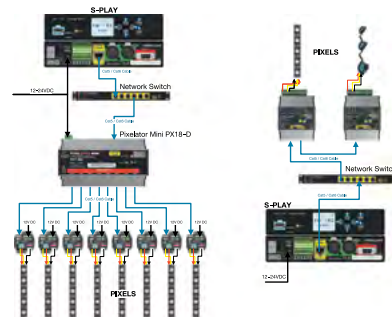
This unit comes with four dry contact inputs with which to trigger your shows. Sources here can be as varied as a switch on the wall, or even a PIR motion sensor. Have you ever wanted to walk into a room and have it automatically fade up the lighting? That's commonly done already with PIR sensors and DALI lights. But have you ever also wanted that lighting to fade up and then display pixel mapped patterns? S-PLAY is your go-to unit for this.

GPIO also opens up heaps of possibilities in integrating pixel or DMX lighting with other systems. For example, a lot of buildings are controlled with DALI systems. It's not easy to integrate DMX or pixel lights with DALI systems. A DALI universe has only 64 channels in it, and a lot of that might already be taken up by the house lights. There are DALI-DMX converters, but they can be pricey. With the S-PLAY, a simple dry contact relay can enable your DMX lighting to tie into the building's existing DALI system.

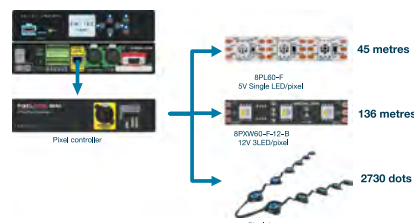
### Pixels

Your go-to unit for playback of pixel shows.

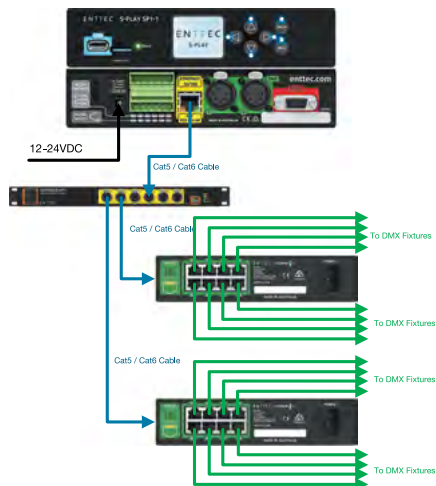
It was important for us to keep pixel lighting installations in mind when designing this unit which is why in addition to the 2 DMX ports that can be assigned as output ports for your par cans or moving heads, you also have access to up to 16 Universes of playback via sACN or Art-Net. You can easily pair this with a couple of ENTTEC Pixel Octos or a Pixelator Mini, to get 16U of pixel control!



To give you a bit of context on this, most pixel strips are 60 LEDs/m. If you use a strip that has each LED as an individual pixel, 16 universes is 45m worth of RGB Strip. If you use strip that is grouped with 3 LEDs per pixel, that is 136m of RGB strip!



Alternatively, if you just need to control a lot of DMX fixtures, just pair the S-Play with a couple of Storm 8s and you'll have 16U of DMX output:



Need more universes? Add more S-Play!

### Recording

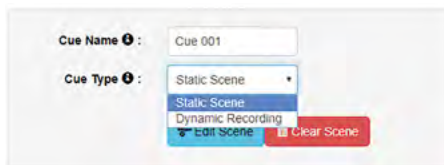
This wouldn't be The Recording Issue if we didn't show you how this worked!

The S-Play comes with a bit of terminology which helps organize how it functions. The main features you need to know are as follows:

### Cues

These are the basic building blocks of your shows. You can record Cues as two types:

1. Static Scenes, and
2. Dynamic Recordings

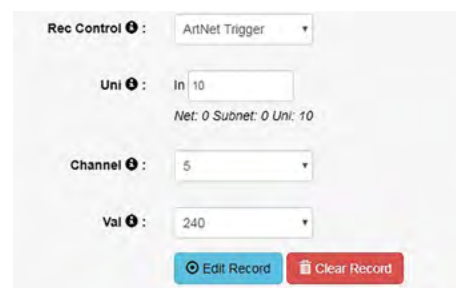


The Static Scenes can be recorded in a few ways. You can use the inbuilt tool to manually type values into DMX channels, use another inbuilt tool to bulk assign values to DMX channels, or simply record from a DMX source. The DMX source can come in from either or both of the 2 DMX ports on the unit using two male to male adaptors, or can come in as Art-Net or sACN data via the network port.

Dynamic recordings can be made in the same way, by recording input via the DMX ports, or recording Art-Net/sACN data via the network. You also have the choice of how you want to trigger the recording to start and stop. Via the web browser home page on S-Play, you can choose to record:

1. Manually, or
2. Remotely

For manual recording, you click start and stop recording on the S-Play web browser user interface. This is easy for non-looping sequences, however isn't always the easiest way to record a show designed to seamlessly loop, or if you are trying to record a complicated show exactly from when it starts, being slow to click the record button on the web browser interface might lose you some data. You can record remotely by setting up a trigger to start and stop recording. For example, you can select an Art-Net trigger. In this example we chose universe 10, channel 5, and the channel value of 240.



Now when you send a value of 240 on channel 5 over Art-Net to universe 10 by Art-Net to the S-Play, it will start the recording. This value

# GET<sup>2020</sup>show

## 10TH GUANGZHOU ENTERTAINMENT TECHNOLOGY SHOW

第十届广州（国际）演艺设备、智能声光产品技术展览会

# 2020.2.16-19

CHINA · GUANGZHOU

广州琶洲保利世贸博览馆  
POLY WORLD TRADE CENTER EXPO, GUANGZHOU CHINA

亚洲最具影响力的专业灯光音响展

THE MOST INFLUENTIAL PRO-LIGHT AND PRO-SOUND EXHIBITION IN ASIA

GETshow 10th ANNIVERSARY

GETshow 10周年

ADD: Room 803, Building B, Shidaichuangyi Park 179, Yinbin Road, Panyu District, Guangzhou

Website: <http://www.getshow.com.cn>

TEL: +86-02-8479 0060 8479 0061

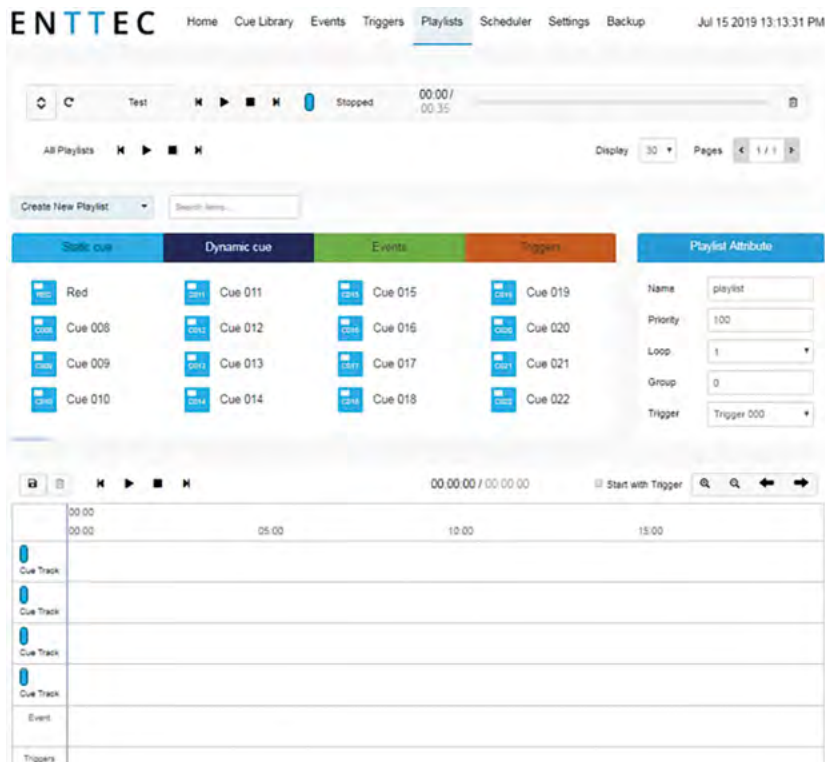
E-mail: [info@getshow.com.cn](mailto:info@getshow.com.cn)

FAX: +86-20-8479 0162

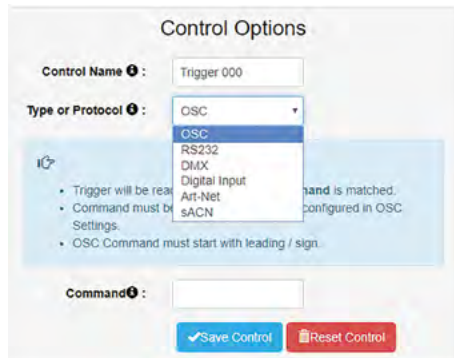
can be programmed into the first cue in the lighting software you are using to program your show.

## Playlists

The playlist is where you group multiple static and or dynamic cues together in a sequence to be stored and played back at will. Here's a snippet of the Playlists page so you can see how it comes together:



On the Playlists page, you have access to your entire Cue library, as well as a timeline feature just below that. By simply dragging and dropping your dynamic recordings or static scenes onto it, you can begin to create a Playlist. You can set the start and end times of each Static Cue to control the duration, in addition to setting fade-in and fade-out times



to tailor the transitions between each of your Cues.

## Triggers

Where the S-Play becomes a lot more interesting is when you add triggers to playlists so your shows can respond to inputs. With the S-Play, we define triggers as stimulus that comes into the unit. In the 'Triggers' tab of the web browser interface, you can create

up to 128 different triggers, and they can come in various forms:

As you can see, there are many different triggering options, so you have the flexibility to tailor your control system to your specific requirements.

Also keep in mind that once you have saved a trigger, you can of course name it, and when building your playlist, you can drag those

triggers into your sequence to do things such as:

- Triggering a new playlist
- Pause your playlist until receiving a trigger value
- Use a trigger to make sure multiple playlists are activated at precisely the same time (great for if you need to layer effects together so you need them to start at exactly the same time)

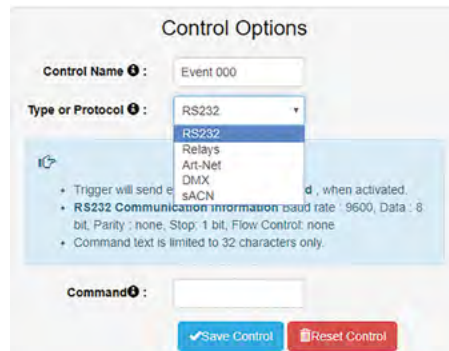
You can also override a trigger at any time, by manually pressing play, which can come in really handy if you have any hiccups with an external trigger. For example, if you had set a show to pause till a pressure plate GPIO trigger activated the next cues, but something happened to the plate and the trigger wasn't coming through, you can force the show and avoid an awkward moment by:

- Pressing play in home page in the browser interface
- pressing play in the playlist page in the browser interface
- pressing play using the buttons in the home page on the LCD screen
- pressing play in the playlist page

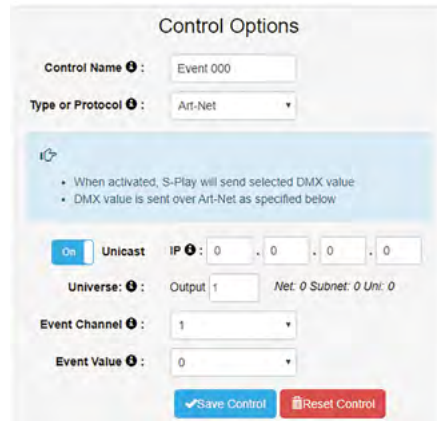
## Events

While 'triggers' are defined as stimulus coming into the S-Play, 'events' are used to transmit out of the unit. This is the feature that lets you use the S-Play to integrate so much more than just lighting control, because events let you control external factors.

As with triggers, you can create and name up to 128 events, and again you have a range of options for the events you generate:



Art-Net, DMX and sACN events let you create a packet of Art-Net, DMX, or sACN data. For example, in Art-Net triggers, you can use the control options to specify which universe you want to send data on, which IP you want to cast to, and of course, the channel and value.



If you set the parameters of this event to be the same as an existing trigger, you can use an event in one playlist to activate a trigger in another unit! Plenty of other devices like fog machines or fans can also be controlled by DMX values, so an event of this form can easily get your S-Play lighting show to tie into the greater context of your live event by activating these DMX controlled devices.

Events become really interesting when you use relays or RS232. Relays and RS232 are fairly universal when it comes to integration. In the context of a live event, your curtains may be activated by relay. You might have a movable stage with hydraulic pistons activated by relay. Or even use a relay to turn on the bar fridge under your desk so that you have a cold one ready during the performance! When it comes to the possibilities of events and triggers, your imagination is the limit.

**If you would like to know more about the S-Play, you're very welcome to contact us at [sales@enttec.com.au](mailto:sales@enttec.com.au)**

NEW ZEALAND'S ONE-DAY A/V EXPO RETURNS IN WINTER 2020

# ENTECH

ROADSHOW  GLOBAL 

*Featuring the leading providers of*

**AUDIO,  
LIGHTING,  
VIDEO & STAGING**

**DON'T MISS OUT  
Book Your Space Now!**

For more information contact [steve@juliusmedia.com](mailto:steve@juliusmedia.com)



**AUCKLAND**  
THUR 30 JULY  
GRAND MILLENNIUM HOTEL



**WELLINGTON**  
TUE 4 AUGUST  
TSB ARENA



**CHRISTCHURCH**  
THUR 6 AUGUST  
TOWN HALL

[www.entech-roadshow.com](http://www.entech-roadshow.com)

# Tips and Tricks:

## Recording with Soundcraft's Ui24R

presented by Soundcraft

**More than just a digital mixer, Soundcraft's Ui24R doubles as a recording interface that offers engineers a variety of options to choose from when it comes to capturing a performance. Here, we will take a quick look at five ways to use the recording functionality of the Ui24R.**

### 1: Direct to USB

A great option for quick and easy hassle-free recording is direct to USB. On the front panel of the Ui24R, there's a USB slot that you can plug a stick into and record all 22 input channels to USB as individual, unprocessed WAV files. This is a really great option that makes it practical to record every session you do on the mixer. You never know when you will strike gold, and when that magic happens, the ease of direct to USB recording will mean you'll be sure to have it on file ready for mix down.

### 2: 32in/32out Recording Interface

The USB-B outlet on the front panel allows you to setup the Ui24R as a 32in/32out USB recording interface. Plugged into your computer it will talk directly to whatever DAW you're already using so that you can get your recordings directly into a session. This really makes it easy to use the Ui24R as a recording interface either on the road, or set-up in the studio. The 32in/32out gives you a massive input and output count, allowing the whole band to be tracked live with monitoring and headphone send flexibility.

### 3: Dual-path redundant multi-track recording

In addition to using the direct to USB and interfacing options, the Ui24R supports dual path multi-track recording. Recording to a standard USB stick and DAW via USB at the same time gives you peace of mind knowing that should something go wrong; you will have a back-up available. This setup also allows both engineer and band to take home recordings from the gig or session quickly and easily.

### 4: Virtual Soundcheck

Because the Ui24R can function as a full interface, you can also send tracks back out to the mixer. For any artist who is going to be recording with pre-recorded tracks, this is a real godsend, because it means that they can mix those tracks in real time and achieve a really nice natural sound that suits the gig. This also means that bands can run a virtual soundcheck: you can soundcheck a band in the space and get everything dialled in before the band even shows up.

### 5: Master Mix

Finally, for quick and dirty recordings of jam sessions, rehearsals and live gigs, the Ui24R can be used to record the master left and right mix as a stereo WAV file ready for the band to take with them after the show.



# 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:



# TIMECODE - STAYING ON TIME

by Simon Byrne



**There are two fundamental ways to deliver timecode - SMPTE or MIDI. Originally developed for film production, and largely unchanged for fifty years, SMPTE timecode is added to film, video or audio material to provide a reference for keeping the material in sync. SMPTE timecode is generated and presented in hour:minute:second:frame number. Notice how it does not have a sub second number? That is taken care of by the frame number, so it is very important.**

Video is delivered in frames per second. In North America, it is thirty frames a second (30fps), in Australia we use twenty-five (25fps), and film is typically twenty-four. Therefore, the greatest synchronisation accuracy we can get is a function of how many frames per second. For example, one second divided by twenty-five frames results in forty milliseconds resolution. This is enough for most applications. As a side note, there are also a couple of strange frame rates originating out of the US being 29.976 frames per second, and 23.976 frames per second, which are a throwback to the introduction of the NTSC analogue colour television standard. Avoid them. In live events you don't have to worry about it, particularly in the Australian market where we are based on 25fps.

Where did the 25fps and 30fps thing come from anyway? It is a multiple of the mains power supply which is a convenient, and free, clock. In the US, their supply is at 60Hz, so 30fps was convenient, whereas in Australia and Europe, we have 50Hz supplies so 25fps was used.

If you have video on an event, it is the frame rate of this material that will drive the choice

of frame rate for the timecode in everything else. If your video is 25fps, so should be your timecode.

SMPTE timecode is usually delivered by way of Linear Timecode, or LTC. LTC is an audio version of the timecode which can be recorded and played back using a free track on any audio device. This might be a DAW such as Ableton Live or Reaper, or perhaps an audio channel in a video file.

MIDI Timecode, or MTC, is the other primary way of distributing timecode. Developed in 1983, the MIDI standard specified that it should cost no more than five dollars to implement on a device, which is why it uses those horrible DIN connectors, and the maximum specified cable length is 4.5 metres. However, there is a way to carry MIDI over Ethernet networks using the RTP MIDI network protocol. Apple computers have the capability built in as part of their Audio MIDI setup, and for Windows users, the capability can be added by installing Tobias Erichsen's excellent freeware network MIDI driver (link at the end).

If you are looking for a Timecode generator source, download Reaper. Reaper is a

seriously powerful and robust digital audio workstation for both Windows and OSX that has a very generous 60 day trial period, and the purchase price is seriously good value anyway at USD \$60 for personal use. It contains a built in timecode generator that can output both LTC and MTC.

Preroll - As you could imagine, the slave devices need some time to sync up to the master clock, especially if they are mechanical such as tape or optical disk. Therefore best practice is to have a minimum one second preroll of timecode before the content starts, to give everything the opportunity to be in sync by the time the media starts.

An obvious use of timecode is for multi-camera shoots. But with the prosumer DSLR cameras that everyone uses now, how do you get the timecode onto them? The answer is Tentacle Sync E devices. Tentacle Sync E devices are a low-cost way of delivering timecode to cameras and audio recorders that don't have the ability to jam timecode by themselves. They are simple devices that are configured using a phone app via bluetooth. Once configured, they output timecode as LTC which you can record on an audio track within the cameras and audio recorders. Then back in the edit, you automatically line up the video tracks with the recorded sound. This is a fantastic way to record a live show with multiple cameras.

#### Reaper DAW

[reaper.fm/](http://reaper.fm/)

**rtpMIDI - Network MIDI driver for Windows**  
[tobias-erichsen.de/software/rtpmidi.html](http://tobias-erichsen.de/software/rtpmidi.html)

**RTP Midi hardware converters by Kissbox (can output LTC as well)**  
[kiss-box.nl/product-category/music-systems/](http://kiss-box.nl/product-category/music-systems/)

**Lockstep - Convert LTC SMPTE Timecode into MTC without additional hardware**  
[figure53.com/lockstep/](http://figure53.com/lockstep/)

# GAINING INSIGHT INTO CALIBRATION

by Andy Stewart

Calibration and gain structure are two of the least appealing concepts in audio, and arguably the least understood. Yet ironically, both are inextricably linked to the recording process. Most enthusiastic engineers, however, tend to run for the exit at the very mention of either of these concepts, in part because they're dull (the topics, I mean) and also because they're confusing. But if you call yourself a recording engineer (or any variation on that theme) you simply must have some grasp of the principles underpinning both. Once you get a handle on them, your recordings will improve in myriad ways and you'll be twice the engineer you were beforehand.

I've probably chosen the most boring (and enormous) topic in pro audio as the subject of this month's Listen Here (and that's really saying something!). But the reason is simple: the calibration of a recording system, particularly a digital one, and the gain

structures you subsequently drive through it, are fundamental to the sound of your recordings. If that all sounds like bollocks, let me explain. (And if you want to turn the page now, I'll understand).

Focussing mainly on digital recording systems – because, let's face it, the vast majority of systems these days are digital – let's consider this format's limitations.

We have a lot to cover here in a short time, so let's dive straight in...

## Calibrating Digital Systems

If you haven't done it already, you need to get a grip on how your digital system reflects 0VU on an analogue meter, both on input and output. Why? Because even if your recording/mixing system is wholly digital, chances are you still have mics that record real sounds in the real world, and maybe an analogue monitor controller and speakers, in which



case you're also still squarely in the analogue domain. How these two systems function together as one in your studio is mostly about how they're calibrated.

**It's right at this early juncture that most people glaze over...**

So to clear up any confusion that might have already arisen, let me say this: in the analogue domain, all manufactured equipment has a 'sweet spot'. You've heard that term, right? What this generally means is that a pro audio

## Audio Rentals



Since the early 80's, The P.A. People have been providing quality audio rental solutions in Sydney and across Australia.

120 cabinets of Bose ShowMatch including Cardioid subs Flown, ground stacked, tower lifter and Bose Cart options  
Linea Research amplification | Yamaha consoles  
Creative Audio monitor system

'STACKS AND RACKS' or COMPLETE SYSTEMS

Contact us to discuss audio for your next event!

Radios | CCTV | Wired Comms | Wireless Comms | SPL Net | Audio

papeople.com.au

unit's analogue circuitry – whether it's a compressor or a preamp or a reverb unit – is optimised to pass an electrical signal through it at 0VU (+4dBu), with the least amount of distortion and the least amount of noise. Drive your audio signal too high above this and you'll drive the analogue circuit into distortion; go too low and your sound will be dropping into its noise floor. Pretty simple.

Now right here, as an engineer, you might say: "Well, yeah, but analogue distortion is cool... it's actually exactly what I'm after!"

Yep, most of us would agree with that, depending on what we're recording.

So now this is where calibration and gain structure marry together conceptually. If the digital converters of your recording system aren't calibrated correctly (if they ever were) with your analogue equipment, they may 'clip' before you get the desired analogue distortion you're after, and that's not good. Conversely, you might be an engineer who prefers pristine, distortion-free audio recordings, but still find yourself driving all your analogue chains into severe distortion in a vain attempt to record healthy (read 'hot') and clean digital signals. That's not good either. So what do you do, and how do we accommodate these two disparate recording preferences in one digital setup? Well, let's back this conversation up a bit and try to clear up a few persistent myths.

## Headroom vs Head Injury

As many of you know, analogue circuits have a thing called 'headroom' – some more than others. What this term means, simply put, is this: above their 0VU (+4dBu) 'sweet spot' there's some leeway in the analogue circuitry to accommodate signals that push higher than this ideal value. And because most audio signals are dynamic (varying in level to some degree) we need this headroom to function, particularly when we're recording. If the sweet spot of an analogue circuit is too small it becomes almost impossible to work with, so good gear generally has plenty of it (often between +20 and +30dBu). Equipment such as analogue consoles, in particular, which have the difficult task of mixing lots of signals together, also have facilities onboard like EQ that can potentially boost levels dramatically. (If you didn't have headroom in a console, the moment you boosted a signal it would distort!)

So if you're recording an analogue chain into a digital system – like most of us are – you need to know what level your digital converter is receiving at this magical 0VU (+4dBu) analogue value.

Now conceptually, things can get very messy here very quickly, so I'll try to keep it simple. In a nutshell, digital signal paths have no 'headroom' as such. None. Not because they're sub-par, mind you, but because the concept simply doesn't apply to them.

Instead, digital recorders have a dynamic range directly related to the size of the bit rate

at which you're recording, and a so-called 'ceiling' of 0dBFS (the FS stands for 'Full Scale'). Above this value, there's nothing, simply because there's actually no such thing as 'above' in a digital signal! That's why I hate the term 'ceiling', because it infers that there's something above it, but in this case that's dead wrong... a myth.

Exceeding 0dBFS is like exiting the Earth's atmosphere without a space suit. Unlike the analogue domain where there's space above (and below) the so-called 'sweet spot', digitally, there's nothing because the concept of 'above' is meaningless. That's why the moment you go 'over' (another misnomer) 0dBFS, you clip the digital input (or output) and get brutal, wholly unpleasant distortion.

It's all very confusing, I know, so let's persist with our explanation.

To avoid this clipping – and we really want to avoid it – we need to create some headroom in our digital recording system artificially, which we can do quite easily, albeit, arbitrarily. This will give us a sense of 'above-ness' and 'below-ness' to satisfy our tiny minds, even though the concept doesn't really exist.

## A Line In The Digital Sand

We simply pick an arbitrary value – typically between -16 and -20dBFS – and nominate this as our new 0VU level in our DAW. For the purposes of this exercise, let's call our 0VU analogue input level our new -20dBFS calibrated input level (an accepted international standard across the Film Industry). So now, when the final output VU meter of any of our recording chains measures 0VU, at our digital converter (and DAW metering) it will measure a calibrated value of -20dBFS. By inference, all our cleanest, quietest and least noise-affected analogue RMS signals will now be recorded at around this level, giving us 20dB of newly created 'headroom', as if by magic.

Now, if we want heaps of distortion in our analogue front end, we can push all that gear harder in various ways without threatening to 'clip' our digital converter's inputs. We'll still need analogue compressors and limiters in the signal chains, of course, to protect us from the horrors of our edge-of-atmosphere 0dBFS value, but if you want distortion chances are you're already using these dynamics controls anyway to some degree to create that sound in the first place.

If, on the other hand, your recording preference is for clean, quiet and distortion-free digital recordings, you must first ensure that you optimise your analogue chains to measure an RMS value of around 0VU (+4dBu) throughout, which will then give you (at 24-bit, in your newly-calibrated digital system) a very healthy recording level of -20dBFS.

This calibrated recording chain has a two-fold benefit: it gives you a healthy signal with plenty of artificially prescribed so-called 'headroom', and also a decent amount of

'above-ness' for applying plug-ins during mixing, without it overloading the digital stereo output later.

## Above-Ness? What The?

Now I know some of these terms aren't exactly scientific, but hopefully they elucidate my point. In the analogue domain there's a clean mid-point (if you like) that puts your sounds in focus like a clear lens. Above and below this focal point things get fuzzy. But unfortunately the digital domain doesn't work like this, so to accommodate the needs of the analogue domain, we must draw this digital line in the sand.

There's far more to this topic than I can tackle in such a small space, unfortunately, and I've barely talked about gain structure at all, so next issue I may pursue this topic further (to bore you anew). Meanwhile, if this article has raised more questions in your mind than I have managed to resolve, feel free to email me. The important first step is to face calibration and gain structure head on, even if you make a meal of it at first. Once things clear up in your head, you'll pop out the other side in far more control of the recording process than you were before.

Good luck!



**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](mailto:andy@themill.net.au)**

Australia's One-day AV Expo

# ENTECH

ROADSHOW

NEW

- ALL DAY DEMO AND TRAINING SESSIONS ON THE FLOOR
- 10AM: THE AV HOUR OF POWER! FAST TECH SESSIONS & COFFEE
- LIGHTING SHOWCASE WITH ALEX HUGHES
- PA SHOWCASE WITH JULIUS GRAFTON

AND ALL THE THINGS YOU LOVE,  
ONE FULL DAY - IN YOUR CITY!

ARRIVE FROM 9.30 FOR COFFEE  
AND HOUR OF POWER

SHOW OPENS AT 11AM



## ENTECH 2020 EXHIBITORS

HAPPY HOUR SPONSORED BY CHAMELEON TOURING SYSTEMS

## ENTECH 2020 DATES

<p><b>PERTH</b> THURS 5 MARCH PCEC</p>	<p><b>ADELAIDE</b> TUES 10 MARCH ADELAIDE SHOWGROUND</p>	<p><b>SYDNEY</b> THURS 12 MARCH HORDERN PAVILLION</p>	<p><b>MELBOURNE</b> TUES 17 MARCH MCEC</p>	<p><b>BRISBANE</b> THURS 19 MARCH RICC RNA</p>
------------------------------------------------	------------------------------------------------------------------	---------------------------------------------------------------	----------------------------------------------------	--------------------------------------------------------

DON'T MISS OUT - BOOK YOUR SPACE NOW! EMAIL [STEVE@JULIUSMEDIA.COM](mailto:STEVE@JULIUSMEDIA.COM)

by Jenny Barrett



# Set to conquer the US - Fiasco Opens Service Centre in LA

**Six years since quitting their jobs to work fulltime on their dream of making the life of a roddie sweeter, Matt Waterhouse and Joe Bradford, founders of New Zealand road case manufacturer Fiasco have opened the first service centre in the USA. Fiasco's take on how to pack a truck is going global.**

### Truck Packology

Matt and Joe, themselves having spent years on the road were, in the words of Brett Wallace, Sales Manager, "Sick of the random cases that make pack down at the end of a hard day a nightmare." Whilst others just put up with it as a necessary evil, Matt and Joe became fixated on finding a better way and devised a system to standardise truck packing. Fiasco cases come in many different sizes but they are all made to fully compatible dimensions, creating an interlocking system.

It's an approach Fiasco likes to call "Truck Packology." Three road cases packed end-to-end fit snugly in shipping containers and 90-inch box-trucks, while four packed side-by-side fit in semi-trailers and 96-inch box-trucks—and that's just the beginning. Fiasco's other mantra is "Buy the Truckload". The off-the-shelf design means Fiasco can produce more road cases in less time, allowing buyers to purchase a truck-sized quantity of road cases and have them shipped to any major port in the world, all without

the headaches of custom design processes. Head of Operations, Joe Bradford, believes their model ultimately leads to a healthier bottom-line. "We deliver your cases faster and at a lower cost than custom designers can," says Joe. "And we ship them right to your doorstep."

The New Zealand base is in Cambridge, a small town a two hour drive south of Auckland, surrounded by thoroughbred studs and dairy farms. In the midst of this rural idyll, Fiascos' design team works with the dimensions of the object to be transported or housed in the road case and designs and manufactures customised inserts. The inserts slide into grooves that have already been pre-cut into the case lining.

This approach to customisation has paid dividends explains Brett, "In 2017 we bought our own CNC Machine for prototyping but very quickly the manufacturing of custom inserts for our standard truck pack cases took off." Brett describes being approached to design a solution to transport an aircraft

spare part that is swapped out to get serviced; and by a deep sea mining company sending dredges to oil rigs and oil fields in Texas.

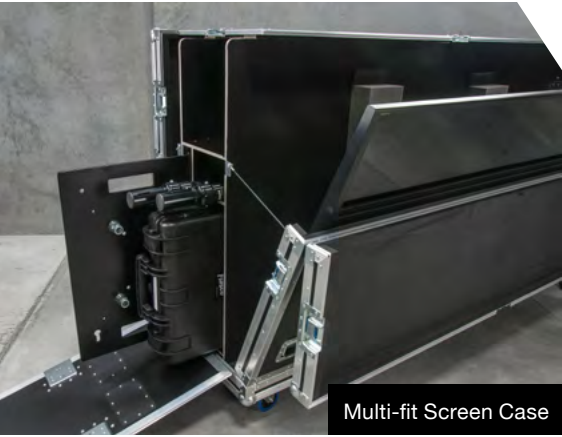
"And we are also beginning to see the versatility the customised inserts offer our original production clients who four, five, years on are buying new fixtures or motors and we can simply redesign and replace the inserts to suit the dimensions of the newer models."

### The Word on the Street (or Outside the Truck)

A familiar name to the production and entertainment industry in New Zealand and with an increasing number of requests for quotes from Australia, it is hard to believe that Fiasco was only founded in 2011. According to Brett, he hears stories of people opening up a truck, seeing Fiasco road cases and celebrating that it will be a quick load in and load out.

This is backed up by his clients. Streamliner's Warehouse Manager Reese McGuinness agrees entirely, "We line everything up before it goes in the truck. It is just like a quick game of Tetris in the middle of the night. You see a lot of other production companies now using Fiasco for the same reason."

Streamliner, the Wellington-based production house, have been regular customers, initially for standard cases to house cables and their regular data projectors. They then contacted Fiasco to develop customised cases for four Barco 22K projectors and six 22K laser projectors, "They are a great bunch of people



Multi-fit Screen Case



Brett Wallace



to work with. You go to them with a problem and they come up with a plan. It's also really hard to beat them on price. We get a lot more for our money with Fiasco."

The technical services and production arm of H3 who manage Hamilton's Claudelands event centre, rugby stadium and the cricket ground have been customers from day one. Kyle Evelyn, Lead Events Technician laughs, "We have so much Fiasco product. We started with the basic 1200 packers but now we get them to do customised stuff for us. Most recently they did a speaker case that holds the stand, the hanging brackets, even a mixing desk so we can just roll it into a venue." Like Reese, he rates their customer service highly. "They are nice guys to deal with, good communication. I know they are always only a phone call away."

**A Business with a Strategy**

What stands out when you talk to Brett and learn about Fiasco is not only the passion for the product and their clients but also the commitment to growing the business.

Key to their growth to date has been an emphasis on research and development, "We constantly work alongside our customers to solve their problems so that they can concentrate on their business. These relationships help us to keep improving our product range." The Fiasco team have recently redesigned their slam rack, "The lids now hinge and slide inside the rack when the rack is deployed."

The new service centre in LA exactly replicates the services offered in Cambridge, New Zealand. It supports a full time

production team who will design and manufacture the inserts and the racks and uses the same quality control processes. Two salespeople are tasked with getting the show on the road, one out of LA and the other out of Nashville, "With our first shop up and running in Torrence, California to service the US with our standardised truck pack cases and inserts, we plan to open more shops in the future and even have Australia in our sights."

Fiasco has never really been just a simple manufacturing company. Founders Matt and Joe were problem solvers from the start, and it would appear their next mission is to sort out the USA.

**STARTING, BUYING, SELLING OR RE-STRUCTURING A BUSINESS?**

Julius Partners provide expert analysis, strategy, risk assessment and advice to new or experienced business owners.

Most businesses operate on less than 5% net profit, often with inbuilt risk that is hard to see from the coalface. Some re-structuring is difficult and needs careful management of teams and owner mindsets.

If selling, our fees are less than most business brokers. We can negotiate and refer to expert lawyers and accountants.

Operating a diverse variety of businesses since the 1970's, we offer complete confidentiality secured by a deed, and transparency in our dealings with you.



Call Julius on 0408 498 180 or email [julius@juliusmedia.com](mailto:julius@juliusmedia.com) [juliuspartners.com](http://juliuspartners.com)



# Diversity and Inclusion in AV - it's our responsibility.

by Toni McAllister

**“It’s not that we don’t want to employ women, it’s just that none are applying.”**

**“If you know of any women, send them our way.”**

**“We love having women on our crew, it really balances things out.”**

I’ve spent a long time wondering why there are so few women working in AV. Those of us in the industry know why we love AV. We have a passion for it that drives us to work the sometimes crazy hours and respond to the often weird and wonderful requests of our clients. But why do so few women appear to share this passion?

Employers in AV will tell you that women are just not applying for the jobs. And if they do, they’re often not sticking around. So what gives?

Many employment sectors, like STEM, have been encouraging more diversity for decades. If we know we’re not attracting the female population, then what are we doing about it?

Rebekha Naim, Program Coordinator and Teacher of Certificate IV & Diploma of Live Production and Technical Services at RMIT University sees barriers to entry for young

people in general. “Young people don’t know a lot about our industry. They don’t see AV as a career option. It’s often seen as something you might do while you’re studying to be something else. It’s not necessarily seen as a ‘real job’. And that’s on us as an industry to reposition ourselves.”

Naim reports an increase in female students studying Live Production from 10% to 35% (on average) in the last couple of years. “I can’t say that we’ve actively done anything differently. We’ve always encouraged girls to apply. I think it’s just that now society is starting to catch up with us. And the more that AV involves IT the more traction we get with women. The work that STEM has done in this area has certainly had a carry-over effect into our industry.”

Brian Nash, Director of Audio Visual Services at ICC Sydney, has built a diverse team in his AV crew. He says “It’s about creating the right

environment for women to feel comfortable, to work to their best ability, to ask questions and be able to grow”.

When asked if he sees a boys’ club culture in his team he says “Not here. It’s not something that stands on its own, it’s part of an entire culture that the company is building. It’s inclusive, collaborative, it’s a team effort. Creating an environment where people can come in and thrive.”

But with so few women in the industry overall, is there something we are missing? Does the boys’ club culture fly under the radar so well that it is being missed by those who have the power to act?

Paula Jones, freelance AV technician of 25+ years, believes we’re seeing a shift with the younger generation. She says “Gender is not the issue it maybe once was for the older generations. Having said that, we need to address any negative attitudes that may exist within the old boys’ club, before they have a chance to be passed down to the new generations.”

Naim adds that the attitude isn’t always coming from within the industry, that at times it’s the client that brings the unconscious bias with them. She relays stories of female techs that have had clients ask when the ‘AV guy’ is going to arrive.

What can we do, as an industry, to influence any negative behaviour and encourage gender

diversity? To stem the unconscious bias and promote a more balanced view?

We know from research that diverse workplaces enjoy increased creativity, increased productivity and a broader variety of perspectives, not to mention increased profitability, employee retention and engagement.

The Women in AV group was setup to help address the gender imbalance in the industry - to attract more women to join the industry and to support those already there. One of the key strategies of the group is to promote role models for other women. After all, 'you can't be what you can't see'. As founder, I have great aspirations for the future growth of the group. Using social media, networking events, training and career exposure we aim to create significant positive change.

The Tech Sisters is another fabulous promoter of diversity in the industry. Using social media, it's a community designed to encourage, equip and empower all women in events, globally. Jessica McCloughan, the founder of the group and her team maintain that "you can't hire more women if there aren't any available to hire". By providing practical assistance they are equipping more women with the skills they need.

And that's where we should all be contributing. We must ensure there are plenty of training

opportunities available to upskill and support women, and men, to advance and excel in this industry.

There are so few institutions offering qualifications in live production and technical services. Naim says "It's a resource-heavy course that can be expensive to deliver. Unfortunately, demand isn't high because you don't need formal qualifications to be employed in AV. While this is the case it's a quandary our industry will sit in." Which means we need to ensure we are offering other opportunities for newcomers to learn the skills we want to see. Traineeships and graduate programs are one solution to fill this gap.

Nash says "It's about creating the pathways, like our graduate program, for the young to come in and learn. And when they come they'll tell the next generation and their friends and so on."

Jones agrees "all we can do is create the gateway, and then it is up to them to enter through it".

But as an industry, we are responsible for opening this gateway. We must work together to create positive and significant change. The AV industry should be a diverse and inclusive environment, just like any other. This is our responsibility. It's not just the right thing to do, it also makes good business sense.



Toni McAllister

## Get involved and support these initiatives...

### Women in AV Australia

Instagram @womeninav\_australia

Facebook womeninav.australia

Email hello@womeninavaustralia.com.au

### The Tech Sisters

Instagram @thetechsisters

Facebook thetechsisters

Email admin@thetechsisters.com

# 7 | MASTER REFERENCE MONITORS

SERIES

## Unparalleled Sound & Versatility

**Next-generation driver technology.** Greater output, dynamic range and superior frequency response.

**Patent-pending Image Control Waveguide.** Exceptional imaging, detail, a wide sweet spot and neutral response in any room.

**Integrated 250W + 250W dual-amplification.** Provides exceptional output and greater listening distances (powered models).

**Comprehensive room EQ controls** compensate for the adverse effects of any room acoustics (powered models).

**5 YEAR WARRANTY**  
Upon registration at [cmi.com.au](http://cmi.com.au)

PROUDLY DISTRIBUTED IN AUSTRALIA  
BY CMI MUSIC & AUDIO | [cmi.com.au](http://cmi.com.au)

PROFESSIONAL  
by HARMAN



# THE LOOK

by John O'Brien

**Performance events are about more than just gadgets. Setting the scene before the tech is even turned on is a large part of the arcane art of stagecraft. This requires staging, rigging, props and drapes. For nearly 25 years, Sydney's The Look has provided drapes and rigging for all manner of functions.**

Founded by Geoff and Cath Newey in 1996, they have a huge range of drapes, skirts, starcloths and borders in all sorts of finishes and sizes. The Look also provide all the associated apparatus to keep these dressings in place and looking good, including tab tracks and kabuki drop systems. This is complemented with a range of tassels, bollards, masks and assorted props to round out your stage or event decoration.

**Some Background**

Coming from exhibition work in the early 80s, Geoff got involved with bands - much like many of us - and got the bug for live shows. Doing lights, staging and whatever else was required,

the lifelong learning curve was well under way. A stab at promotion, some theatre and ballet, and then a wide mix of crewing, circuses and floristry kept up the practice for a while.

A chance meeting with Meri and Leanne Took led to several years with the newly formed Staging Rentals. The juncture was great and they went from two to 22 employees in a very short time. The business of covering the walls went through the roof and everyone learnt a great deal on how to modularise event decorations and keep them all presentable and in one piece from gig to gig.

Offered a job in prop buying, Geoff moved on but it didn't quite gel so he went back to

crewing. On the side, he started gathering some materials and got The Look started. It was a slow, steady beginning and took many years to generate a decent turnover.

**The Company**

The big break for Geoff and his company came with the Sydney Olympics in 2000. Apart from hanging out with everyone he'd worked with for nearly two decades, he met international artist Nicolas Bouf and the two formed a strong bond, still robust after another two decades of The Look. Both of them love sound, lighting, screens and the entertainment business in general. Both enjoy their work but more so because they get to be creative and artistic while doing it.

For many in our industry, the Olympics were a boon and it was just that for The Look. Initially tasked with dressing one venue, organisers asked if they could get 700 metres of wall covered early next week. "No problems," says Geoff. An hour after finishing that, they asked if he could do another 700 metres the following day. "Sure." No time to stress - just make it happen. This process continued throughout the five ringed affair, with some staff racking up 120 hours a week. Geoff still considers it one of his finest moments, a proud roadie and proud Australian, showcasing our best for the world.



Advertising opportunity - CX March 2020

# 'THE ENTECH ISSUE'

If you're touring with ENTECH Roadshow 2020, this issue will be current and in people's hands at the show. Contact us now via [jason@juliusmedia.com](mailto:jason@juliusmedia.com) to advertise your product or service and get your editorial material published.

**This is the perfect issue to run:**

- 'How To' tutorials • Application stories and case studies • White papers
- 'Road Test' reviews • All featuring equipment you'll be showcasing at ENTECH.

**ENTECH**  
ROADSHOW



**Urgent**

**February 2020 'The Collaboration Issue'**

Email us urgently via [jason@juliusmedia.com](mailto:jason@juliusmedia.com) to secure your editorial and advertising space.



**Soon**

**April 2020 'The Support Issue'**

**May 2020 'The Wireless Issue'**

Book your space via [jason@juliusmedia.com](mailto:jason@juliusmedia.com).



## Live Work

Like many, experience with live events has given The Look team a unique perspective on problem solving in the world around us. Far from jaded, their wealth of wisdom confers the ability to be able to think ahead and anticipate problems before they occur. For Geoff and Nicolas, this means preparing for the worst but expecting the best. By identifying and rectifying failure points in advance, they can then spend their best attentions on getting everything looking just right come show time. Naturally, they remain flexible enough to accommodate any design revisions or changes as they arise.

Sometimes, the anticipation is in jest. There had been banter around the office that Geoff wanted a gig with the Pope. As a joke, he'd taken to asking every time he got back to the office - "Did the Pope call?" - until one day he arrived back to all the staff lined up like soldiers and he knew something was up. Well, it wasn't the Pope but "his mate Giovanni" who had indeed called, asking for a five story high platform and all manner of adornments for the pending Papal visit. Be careful what you wish for!

## Typical Customers - Fun Jobs

Hire drapes get hung in a wide variety of situations. From film studios to fancy champagne launches, from ballet scenery to

enhancing weddings, circuses, corporate and fantasy theme events, The Look does it all. More than once they've been asked to set up cave-like environments, including one for the Children's Hospital and a gem in a residence in Pt Piper.

Here they had to emulate a watery cave and beach inside. With camouflage mesh everywhere, a digitally printed floor overlay and vines and flowers galore, the guests were a little overwhelmed. Apparently the first few parties who entered from the lift thought that they'd ended up in some grotto basement and headed straight back upstairs. Obviously, a job well done.

Weddings are a regular event for swathing and most clients want their big day absolutely perfect so they'll go the extra mile with budget. When one client had created a room within a room with draping, it took six florists two days to hang a garden from the entire ceiling. The same client kept asking for more spaces to be decorated, so The Look kept delivering more. Many of their jobs evolve as they go, working closely with designers and end clients to get the right outcome.

Materials have moved on from just wool and velvet to myriad fabric types and finishes. A recent addition to the extensive inventory is some quarantine mesh, embedded with fine wire, which allows 3D sculptural elements to be created.





The other notable evolutionary development for the team (and industry in general) is rigging and attachment. Some of this ornamentation can get pretty heavy and needs to stay safely in place. It also needs to pack up cleanly and be ready for the next job. Incorporating Velcro loops and attachments was an early improvement and easy ties, stouter hemming and enhanced rigging techniques have matured over the years.

Getting customers to return everything in good nick is an ongoing challenge but also a process in constant flux!

**Art of Drapery**

The Look may be a business putting food on the table but art is still the main driver for Geoff and Nicolas. Making a living turning the drab into the spectacular is a lot of fun for these guys. According to Geoff's kids, he is "the only dad at school who has a job that he likes." That alone is worth keeping in mind the next time that you need some trimmings around your stage.

**Contact The Look:**

**Geoff Newey**  
[thelook-sydney.com](http://thelook-sydney.com)  
 (02) 9797 6068  
[mail@thelook-sydney.com](mailto:mail@thelook-sydney.com)



# BRAVE THE ELEMENTS

*Experience the outdoors  
 in a new light with the  
 IP Rated Proteus Series  
 from Elation Professional*



**PROTEUS  
 SMARTY HYBRID**

**PROTEUS  
 MAXIMUS**

**PROTEUS  
 RAYZOR 760**

**CONTACT OUR TEAM  
 TODAY FOR A DEMO**

1300 ULA GROUP

INFO@ULAGROUP.COM

ULAGROUP.COM



# STICKY FINGERS

by Cat Strom

Photo Credit: Brayden Smith



## The lighting for Sticky Fingers' recent tour was big, bold, obnoxious and threatened to cut power to the host city!

In a big step up from previous tours Sticky Fingers, the Sydney band that are a 'melting pot of psych, rock, and reggae', completed an arena run around the country.

'Big, bold, and rock'n'roll' was the brief they gave their production designer, Mike MacDonald of Twenty20 Creative, who then set about designing an in-your-face rig and obnoxious production well suited to the band! The fixture count was quite high but the choice of fixture was deliberately limited by Mike, who prefers to make broad strokes with his fixture types.

The modest list of lighting fixtures included 57 Martin Mac Viper Performance, 34 Vari Lite 3500W FX, 55 PRG BestBoy (pods and backlight), 35 Martin Atomic 3000, 52 4-Lite Strips and 144 Par64 (24 bars of six).

"It was in my best interest to keep fixture types to a minimum, as I was very conscious of the limited programming time I would have," explained Mike. "I'm not keen to have ten different fixture types as it makes our workflow more difficult, especially when you've got to take that show from an arena to a festival or a smaller venue. I knew we would



have to clone this show later on so I was forward-thinking!"

There were no rehearsals whatsoever, with Mike seeing his show just before the first. Mike programmed the show in Wysiwyg R43 which allowed him to visualise the show creatively beforehand.

"But of course it doesn't translate 100%," added Mike. "You still need time with the rig to translate intensities with the rig trim height."

The band were keen to have two large V-shaped trusses extending into the room, to which Mike added an additional truss to create more depth, creating an inverted pyramid. These were loaded with Martin MAC Viper Performances, Vari-Lite VL3500 Wash FX, Atomics and an array of 4-Lite Strips to shape the rigging of the show.



“The VL3500 Wash FX are my front key light and we have two fixtures per band member,” said Mike. “We also have two short side trusses per side and each of them holds three VL3500 Wash FX which allows the band to walk around onstage, I can pick them up with sidelight. There are also three each side on the floor, and as old as the VL3500 Wash FX is, they still serve a very good purpose and are very punchy.”

Martin MAC Viper Performances are predominantly the workhouse spot of the rig with Mike explaining that it was a conscious decision to choose a fixture in large quantities that can create large brush strokes. This fixture type was going to outline and shape the stage design. He only used a couple of the Viper’s gobos, preferring to utilise them as an open spot fixture.

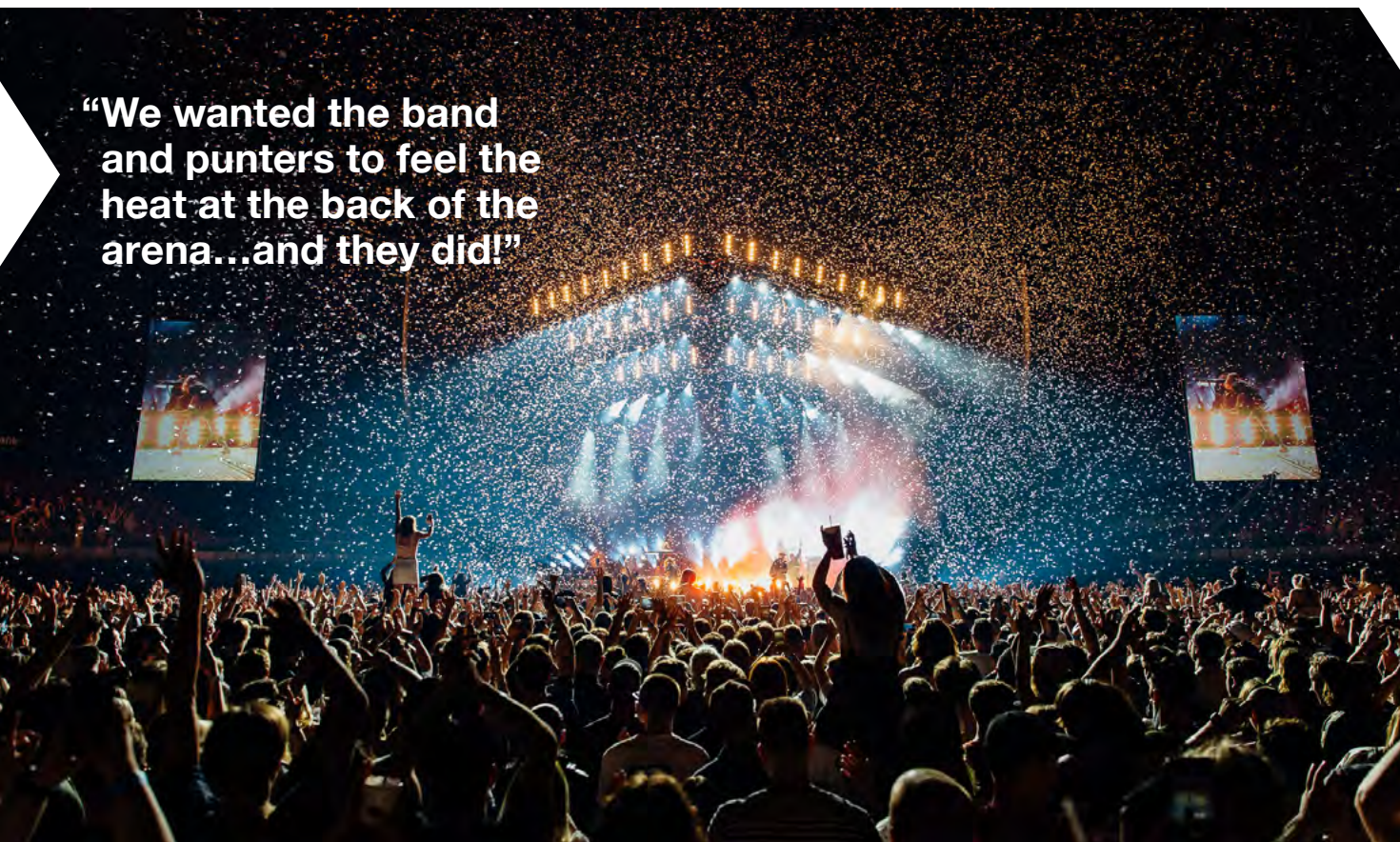
An obnoxious quantity of 52 4-Lite Strips blasted the arena with 42 positioned in the air and ten of them positioned on the riser fascia. They are one of Mike’s favourite fixtures, through which he runs some MA effects achieving some strong looks. It’s a classic fixture; he only needs to glow the 4-Lite Strips at 10% for a strong and bold look. For call and response moments, Mike says they’re an ideal fixture that become an extension of the band themselves.

As they’re a big, thrashy rock band, the guys wanted to ‘feel the light’ onstage so Mike designed five moving pods, each loaded with nine PRG BestBoys, that blast through from upstage. Using Kinesys, the pods have seven positions and are used to shape the rear of the stage.

“They’re very versatile and offer us a lot of looks,” said Mike. “I try to ensure the pods move in a theatrical manner and never during a song. It’s a lot of back light and I’ve had to be extremely careful not to blow out the cameras as we’re doing a lot of IMAG. I try to use beam reduction like a gobo and I also zoom the fixtures in to get some big, strong beam looks. We’ll also use them as a wash fixture as it’s supposed to be blocky and bold.”

Mike’s first choice for the pods was 150 Chauvet Nexus panels, but as no-one in Australia could provide this amount, he had to go with a fixture he could get in quantity from supplier PRG. “They did have 50 BestBoys, which have been great and I’m really enjoying using them.”

**“We wanted the band and punters to feel the heat at the back of the arena...and they did!”**



With the Kinesys taking up a large footprint in the rig it was tricky for Mike to add a rear truss for back light but he managed to squeeze in a rear truss of eight MAC Viper Performances for shaping the stage and five BestBoys doing back light for the band.

Mike decided early on in the design process not to use followspots, saying he wanted to be able to control all the elements of the show. Relying on a traditional followspot operator would have meant he wouldn't be able to achieve the snap blackouts he required. As the band are fairly static in their positions onstage, it worked well.

“I wanted to keep to the linear look that was hidden from the audience's perspective during the show,” remarked Mike. “So we also added 144 Par64 cans (24 bars of six) that matched the height of the videowall. This was the Rock n' Roll element of the show - BIG, BOLD and OBNOXIOUS. We wanted the band and punters to feel the heat at the back of the arena .... and they did!

“We only used Par cans for two songs. It's a trick up our sleeve to create a point-of-difference moment during the set. It's really nice to get matrix Par can wall looks, but when combined with the 35 Atomic strobes they threatened to black out the city! This rig is very heavy on power consumption. We are two by 400A and one 250A, and during the peak of the show with strobes, par cans and molefays, we are sitting at 395A per phase. Sitting on a total of 900, we had to be very conscious of our programming not to hit everything at once!”

At the rear of the stage was a 14m by 4.8m, 18mm pitch LED wall through which Mike textured content from the PRG MBox whilst never taking attention away from the light show.

“I own MBox Studio, which is very versatile, and the band spend money on content creation. I was quite happy about that as it meant I could drive the creative direction, allowing lighting to drive colour palettes, rather than the video,” commented Mike.

For control Mike ran an MA Lighting grandMA2 full size, with another for backup, saying it was good to have lots of playback to run a show like this one.

“It is a Rock'n'Roll show, so it's important to adapt to the show as the show evolves,” he commented. “It's a nicely programmed cue list show, but there's no timecode, as the band changes the song orders, extend songs, and pause songs. They play 27 songs during their set which change every night, then they'll add five new songs they've never played before! It makes for a difficult show for production, but enjoyable for the punter as they're witnessing something new.”

Atmosphere was provided by two MDG ATMe Hazers and two Look Solutions Unique Viper 2.0, with four Confetti Blowers letting rip at the end of the show.

# TRENDING IN PRODUCTION LIGHTING – WEATHERPROOF FIXTURES

by ULA Group's Simon Pentz

While IP65 rated fixtures are nothing new, they have usually only been used in Architectural lighting applications. But over the last few years, the live production industry has started to adopt the use of IP65 fixtures as the technology has allowed for the design of fixtures more suited to the rigors of life on the road.



Before LED became the preferred light source, IP rated lamp fixtures were bulky and heavy - they needed to be in order to have enough metal to dissipate the heat from the lamp source. In warmer climates such as Australia this was not sufficient, so they often needed high-powered fans to provide airflow. This meant they were extremely noisy and unsuited to quieter stage environments.

The LED Par can was the first fixture to widely adopt the IP rating, due to the demand for outdoor theming at weddings, corporate events, and local festivals, driving the market over the last 10 years. Some companies, such



AUSTRALIA'S No1 SPECIALIST LIGHTING COMPANY

[chameleon-touring.com.au](http://chameleon-touring.com.au)



as Astera, have taken this to the next level by providing reliable battery operated IP65 LED lights that are easy to operate by the non-technical crew who normally staff these types of events.

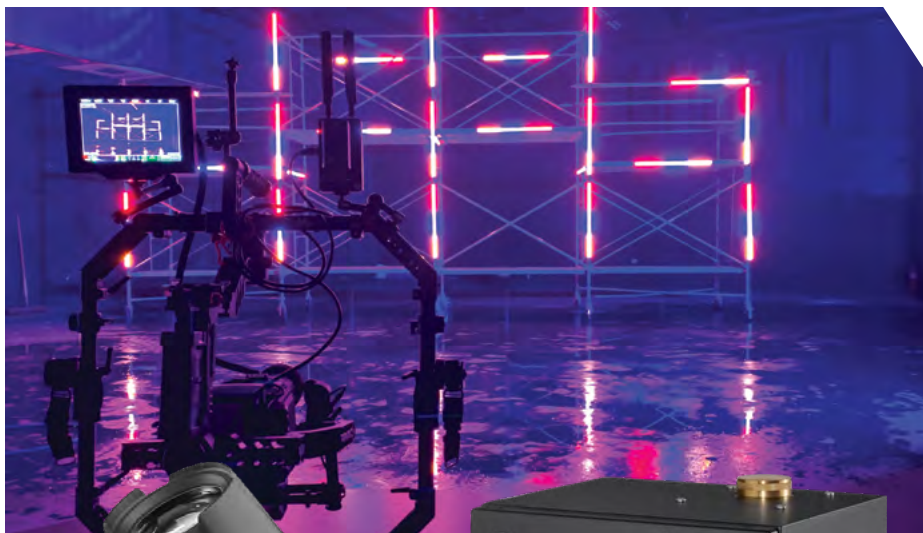
With the rise in popularity of outdoor festivals and the growing unpredictability of the weather, the industry has increasingly turned to IP rated fixtures to allow them to continue to provide quality outdoor lighting rigs while minimising the risk to their equipment.

On large outdoor stages, the front lighting truss is probably the most exposed to the elements, and the trend for large framing profiles and multi element LED wash lights on these trusses has led to the development of IP65 versions of these fixtures. Elation's Proteus Maximus and SGM's G-Profile can both handle the framing profile tasks with ease, with Elation's Proteus Razor 760 taking care of wash and pixel FX duties.

While not as exposed to the elements as much as the front truss, the rest of the rig is still susceptible to moisture. The majority of Australian festivals happen a stone's throw from the beach and/or in very humid conditions, meaning everything is getting exposed to moisture. For this reason, it makes sense for the whole rig to be IP rated. Even smoke and haze machines are getting the IP treatment, with MDG now offering IP versions of its rider spec ATMe Haze and Me series Fog machines.

But I only do indoor gigs, so I have no use for IP rated fixtures, right? Well, let's not forget the '6' in IP65 which stands for the dust ingress protection. This means that the fixtures are not ingesting all the dust and haze, allowing for longer periods between maintenance. SGM have taken this low maintenance one step further by having a patented dehumidifier in fixtures like the G7-Spot, making them almost maintenance free. With rising labour costs and faster turn-arounds between gigs, having fixtures that only require a wipe down of the lens between gigs rather than a full service is a huge cost benefit to any company.

The move to LED as a light source has created compact silent fixtures suitable for the theatre and film/TV market, allowing for LDs and DOPs to incorporate these into set designs that are exposed to moisture, or to film in extreme environments. Companies like Astera have catered well to this market by providing extremely high CRI fixtures that are IP65 and battery operated.





## › JOIN THE CX NETWORK

Join the biggest network of like minded people across Australia at [juliusmedia.com](http://juliusmedia.com) and enter your details for FREE access to almost 3 decades of our magazines including CX, Connections and Channels Magazines going back to 1990!

## › GET INTO PRINT

We are committed to print, and each month our paid subscribers get access to our glossy Magazine the old fashioned way - In the mail.

You can subscribe online at [juliusmedia.com](http://juliusmedia.com) OR - fill in the form below and email to [office@juliusmedia.com](mailto:office@juliusmedia.com) or mail to Locked Bag 30, Epping NSW 1710.

## PRINT SUBSCRIPTION ORDER FORM

Name \_\_\_\_\_

Email \_\_\_\_\_

Address 1 \_\_\_\_\_

Address 2 \_\_\_\_\_

Suburb \_\_\_\_\_

State \_\_\_\_\_

Postcode \_\_\_\_\_

Trading name \_\_\_\_\_

Phone \_\_\_\_\_

Our direct debit details: **BSB: 633 000 Account number: 167384981**

VISA  MASTERCARD

Card number \_\_\_\_\_

Expiry date \_\_\_\_\_

CSV \_\_\_\_\_

Name on card \_\_\_\_\_

Card holder phone number \_\_\_\_\_

Card holder address \_\_\_\_\_

Tax invoice required? YES  NO

### PLEASE TICK ONE OPTION BELOW

Prices are in AUD.  
Magazine's mailed to Australia only.

1 Year \$59     2 years \$99     3 years \$129

You are doing business with JULIUSMEDIA GROUP PTY LTD, an Australian family owned company. Publishing since 1990.



# ACME STAGE PAR BL-100 WW AND BL-100 RGBW



by Ashley Salta and Wesley Bluff

## Ashley Salta

**Ashley Salta is a Supervisor of Production and Technical Services at Rockhampton Regional Council, a position that encompasses technical management of Rockhampton's Pilbeam Theatre, a 1,000 seat proscenium arch theatre that is a major stop on the Queensland touring circuit.**

We recently chose to replace our PAR38 house light system at The Pilbeam Theatre entirely with Acme BL-100 WWs, the tungsten emulation model. We looked at other systems, including DALI and phase dimming options, but we struggled to find something that would retro fit to the existing PAR38 infrastructure and that also had a beam angle that was soft and wide enough to give us the coverage we needed. It was our preferred solution to have the house lights under DMX control, giving us the flexibility to run them in zones and incorporate them into our plots via the desk.

After evaluating the options, the Acme BL-100 was literally the best fit – we could pull out the PAR38s and slot the BL-100s into the same cylinders mounted in the ceiling. It wasn't a prerequisite, but the IP65 rating means that the BL-100 is dust and water resistant, which in our ceiling space, in the North Queensland climate, is good to have. The price point was a

huge advantage, as other options were much more expensive and required more labour and cabling. Taking out the old hardwired fittings, changing the power distribution to GPOs and running DMX means we can now swap out house light fixtures without needing an electrician to deal with the hardwiring.

When we configured the BL-100s to produce comparable brightness to the old PAR38s, we found we only needed to run them at 40% to get the same results as the PAR38s at 100%. We now run at 50% as our full house lights state, which is brighter than the PAR38s could manage, and with much more even coverage. Their output is not just flat, it's a controlled, soft, evenly spread light, which we find extremely useful.

We're obviously using much less power with the new system, and it will be very interesting to look at our usage comparisons after the first 12 months. We're sure to find that power usage has dropped significantly; we're already noticing how much cooler it feels when we're focusing on FOH bridge. The air con doesn't have to work as hard, so it feels good to be doing our bit to help save the planet! We've also noticed that we're not replacing PAR38s bulbs every week; we'd usually have to replace two or three, so that labour and parts cost is now gone.

## Wesley Bluff

**Wesley Bluff is the Co-founder, Lighting Designer and Operator of the Gold Coast's Krank'd Audio Visual Productions, a full service production company with a theatre lighting speciality. Krank'd design, build, and operate theatre, concerts, and events nationally and internationally.**

Krank'd invested in BL-100 RGBWs when we were contracted to light part of the Blerach Festival in 2018. Being primarily an outdoor festival, a weatherproof RGB LED fixture was ideal. We looked at a number of product options, but the Acme BL-100 RGBWs stood out from the rest of the pack. Being a COB fixture with wide beam angle, they are ideal for us, as we light a lot of independent theatre productions in venues with low ceilings.

While we initially purchased the BL-100 RGBWs for outdoor use, we now deploy them more often in theatre, fitted with their barn doors, as a Fresnel replacement. They have proven to be an extremely versatile fixture; we have 32 in hire and they're out all the time. We regularly supply Brisbane-based theatre LDs that specifically request BL-100s, and one theatre company liked them so much that they bought a rig of them after hiring from us. At the time of writing this review, we have one show out that's using 24 of them – they're



## BL-100 RGBW The Specs

Light Source: 1 x 150W RGBW LED module  
 LED life expectancy: 10,000 hours  
 Beam Angle: 37°  
 IP65 protection rating  
 DMX Protocol modes: 3  
 Control channels: 6/7/HSIC channels  
 Power consumption: 115 W  
 HxWxD 307 mm x 234 mm x 247 mm  
 Weight: 3.5 kg  
 BL-100 RGBW

## BL-100 WW The Specs

Light Source: 1 x 125W LED module  
 LED life expectancy: 10,000 hours  
 Colour Temperature: 2700K  
 Beam Angle: 50°  
 IP65 protection rating  
 DMX Protocol modes: 3  
 Control channels: 1, 2, 4  
 Power consumption: 115 W  
 HxWxD: 307 mm x 234 mm x 247 mm  
 Weight: 3.5 kg  
 BL-100 WW Tungsten

basically the whole rig.

What I really like about them is the softness of the beam. It's not hard-edged like a traditional Par. The single COB source makes the beam a lot cleaner; some fixtures that run multiple arrayed LED chips tend to cause fringing between the colours. The included barn doors work really well, and the internal smooth dimmer curve is very controlled. The

colour rendering is great, particularly when we need to mix pastel colours when using the BL-100 as a face light or boom fixture.

Practically speaking, the hook clamp is attached by an omega bracket, so you can simply clip them on and off when you need to change from hanging in a rig to sitting on the floor using the two yokes as legs. I find this fantastic because there's nothing worse than

the previous show's crew having removed the hook clamps, then promptly lost all of the fasteners!

**Brand: Acme Lighting**

**Model: BL-100 WW, BL-100 RGBW**

**Product Info: [acmelighting.com.au](http://acmelighting.com.au)**

**Australia and New Zealand: [ulagroup.com](http://ulagroup.com)**

# VUEPIX INFILED

**Maximise exposure and take your message to the crowds with our custom built Mobile LED Solutions.**

- ▶ Fully enclosed trailer containing an all-inclusive digital LED display system
- ▶ Deployable in under 20min with a single operator
- ▶ Hydraulic mast can be controlled wirelessly
- ▶ Mast and LED display able to rotate 360°
- ▶ Patented self-unfurling hydraulic wing system
- ▶ European design built for Australian & NZ roads
- ▶ Internal control room with optional expansion wall
- ▶ Select an LED Screen from our award winning range

**SCREEN SIZE  
UP TO 27m<sup>2</sup>**

**MOBILELED**  
*Anywhere, anytime.*

**VIEW OUR MOBILE LED RANGE AT [VUEPIX.TV](http://VUEPIX.TV)**

# ACOUSTIC TECHNOLOGIES CLA700A AND CLA LF3200A

by Shane Seccombe



Shane Seccombe is the director of Offbeat Operations Entertainment and Offbeat Production and Events, a production hire and artist management company based in Coffs Harbour, NSW. In addition to providing gear and expertise, Offbeat also service multiple venues with artists booking and production management, and provide site management for outdoor events.

At Offbeat, we've invested in an Acoustic Technologies system with three CLA700A top boxes and four CLA LF3200A subwoofers per side. I'd been looking for a new PA system for a while that had the flexibility to cover the range of venues and gigs we do at Offbeat, and a friend whom I have a tremendous amount of respect for recommended AT's CLA. He was running a system with eight tops and 10 subs and couldn't speak highly enough of them.

At the time of writing this review, we'd owned the system for just under eight weeks, and used it in-house at Hoey Moey pub in Coffs Harbour to crowds of 1,000, on outdoor festivals including Blues and Berries to 2,500 pax and Curryfest to 15,000 pax. Artists we've had use the system include Daryl Braithwaite and Jon Stevens, Hands Like Houses, and heaps of local acts.

The system has performed well in some testing conditions – Blues and Berries enjoyed 70 kmh winds, which was interesting! Most systems go pretty wishy-washy in wind like that, but the CLAs stayed clear right to the very back of the event site. Curryfest's main stage was built high on a hill, and despite 15,000 being in attendance, the coverage was amazing; the CLAs fired down the hill and covered the whole area.

## Operational and Tuning

We run the CLA rig from our Allen & Heath Qu-24 and its digital stage box. FOH EQ we handle in the Qu-24, and we find we don't

need any other processing. The CLAs are powered and processed with Powersoft amps and their Armonia DSP and software. We haven't actually connected up Armonia and changed any of the factory defaults; the way the CLAs are tuned and processed out-of-the-box is amazing. It's a smooth, flat response that's easy to use, with plenty of headroom.

## Coverage

The CLA700As give us wide coverage; they're 150 degrees in the horizontal and 20 degrees in the vertical. This lets us cover some pretty wide areas, where I've found most other systems to be much more directional. The advantage is, in wide venues, the CLAs sound exactly the same no matter where you stand. This has saved us time and labour, as we don't need to run any fills.

## Subwoofers

The CLA LF3200A subwoofers are amazing. They are extremely powerful, and you can feel the air they're pushing moving your shirt from 40 metres away, while they're barely metering. The last two touring engineers who used them, mixing for Daryl Braithwaite and Jon Stevens, actually backed them off a bit. They were still pushed hard, and didn't even meter in the yellow.

## Practicalities

One of the big things for us is how easy it is to bring in a CLA rig. There's no amp racks, for starters. The patching is really fast with the PowerCON daisy chaining. Signal is the same, with the LR daisy chaining out of the subs. EQing is really simple, with maybe a couple of frequencies notched depending on the room. Channel vocal EQs are usually almost flat; an HPF and that's it. The CLAs make it quick and easy to get a good sound, and that's essential. The CLA rig has reduced our labour time. We can get FOH up and running in 30 minutes, and the rest of the stage and any other requirements up within an hour.

## Manual Handling

We have been ground stacking the CLAs, as we don't have flying capability in most of the stages and venues we service. It's not necessary to strap the stacks, either, as the locking mechanisms built in to the boxes takes care of that. The CLA700As sit in between the CLA LF3200As and are locked-in through a groove at the back, and a clip at the front.

It's a one-person lift to stack up to two CLA700As on the subs, with a second person required to stack a third CLA700A on top of that. One person can easily set-up four subs and two tops. All the CLAs travel on their wheels, in padded canvas covers, and they stack easily in the Pantech trailer.

## Suggested Improvements

I'd like to see the handles on the CLA700As set a bit further forward, as they can feel a little unbalanced and have a tendency to swing down when you pick them up. I also wouldn't mind a hanging point and a clip for the power and signal leads built-in to the back of the cabinets, to take strain off and make it look a bit tidier.

## Service and Support

Acoustic Technologies are great to deal with. All the questions asked prior to purchase were answered, and they're always available for anything we need followed up. We've had an overwhelmingly positive response to our CLAs from all of the sound techs, bands, and venues who've used them, and from the punters who've heard them.

## Brand: Acoustic Technologies

Model: CLA700A, CLA LF3200A

Product Info: [www.atprofessional.com.au](http://www.atprofessional.com.au)

Australia and New Zealand :  
[www.atprofessional.com.au](http://www.atprofessional.com.au)

## **CLA700A** **The Specs**

### **Acoustic Performance**

Frequency Response: 50Hz – 20kHz ± 3dB

Sensitivity: 102dB @ 1 Watt, 1 metre

Maximum SPL (Calculated):134dB@1metre

High Frequency Dispersion: 50°(H) x 20° (V)

### **System Components**

Transducer Compliment: 4x 8" Bass-Mid Transducer. 2x 1.5" H.F. Transducer on ISOPHASIC Aperture

### **Amplifier Specifications:**

Amplifier Module Output Power: 1600 + 1600 Watts RMS

Amplifier Module Type: Dual Channel Class D with on-board DSP. Switch Mode Power Supply

Amplifier Protection: Over Current / Short Circuit. Over Temperature. DC or High Frequency on Outputs

Connectors & Controls: Signal Input & Signal Link XLR Connectors. USB Type B Powersoft Programming Connector. PowerCon® AC Mains Inlet and AC Mains Link. Input Level Control

### **Enclosure Specifications**

Physical Size: Height 452mm, Width 560mm. Depth 484mm (excluding castors), 614mm (including castors)

Weight: 39 Kgs (excluding castors), 42 Kgs (including castors)

Enclosure Finish: AcoustiCoate Black. Elastomer Finish

Grille Finish: Black Powder Coat Paint Finish

Hardware: 2x Handgrips. Cabinet Flying Hardware. Cabinet Locating and Safety Attach Points for safe cabinet ground stacking



## **CLA LF3200A** **The Specs**

### **Acoustic Performance**

Frequency Response: 32Hz – 200Hz ± 3dB

Sensitivity: 98dB @ 1 Watt, 1 metre

Maximum SPL (Calculated) 133dB@1metre

### **System Components**

Transducer Compliment: 1x 18" Sub Bass Transducer

### **Amplifier Specifications:**

Amplifier Module Output Power: 3200 Watts RMS

Amplifier Module Type: Bridge Mode Class D with on-board DSP. Switch Mode Power Supply

Amplifier Protection: Over Current / Short Circuit.

Over Temperature. DC or High Frequency on Outputs

Connectors & Controls: Signal Input & Signal Link XLR Connectors. USB Type B Powersoft Programming Connector. PowerCon® AC Mains Inlet and AC Mains Link. Input Level Control

### **Enclosure Specifications**

Physical Size: Height 626mm, Width 560mm. Depth 640mm (excluding castors), 770mm (including castors)

Weight: 55 Kgs (excluding castors), 58 Kgs (including castors)

Enclosure Finish: AcoustiCoate Black Elastomer Finish

Grille Finish: Black Powder Coat Paint Finish

Hardware: 4x Handgrips. 4x Castors. Cabinet Locating and Safety Attach Points for safe cabinet ground stacking

# **Are you concerned about your mate's mental health?**

**FACT: Most Australian tech crew and roadies have attempted or considered suicide<sup>1</sup>!**

**Support those around you and register for free mental health training**



[www.entertainmentassist.org.au](http://www.entertainmentassist.org.au)

Supporting the mental health of Australian entertainment industry workers

<sup>1</sup>Passion, Pride, Pitfalls Dec 2014

# DYNACORD TGX20

by Tony Hystek and Peter Meredith



**Tony Hystek is the Managing Director of Action Sound, a full service production company with 25 years' experience based in Homebush, Sydney. Peter Meredith is a sound technician and project manager with Action Sound.**

#### Tony Hystek

Action Sound have invested in three TGX20s, and we're about to double that. We bought them primarily to power our Electro-Voice X2 line array and X2 X12-128 subwoofers. Each TGX20 is designed to power a quarter of an X2 system running six top boxes and two subs a side, and are the manufacturer recommended amps for the system. The X12-128 subs in particular are very high powered, and there's only a few amps on the market that can provide the power they can consume. While the TGX20s are perfectly capable of running at 2 ohms, we're running at 4.

Previously, we ran our X2 on Dynacord H5000 amps, which they've since discontinued. While the price difference between the TGX20 and the H5000 is not that great, the TGX20's power output and feature set is far superior. The new SONICUE control and monitoring software is another step up – it's very simple to use compared to EV's IRIS-Net, which came with the H5000s, and much more user-friendly.

I'd say the other major improvement besides sonic quality is ability to run a totally digital signal chain from desk to amp, while implementing remote control, steering, processing, and monitoring through the same network. We're using Dante with Yamaha desks and I/O boxes, and SONICUE runs through the same network without having to set-up a VLAN. The noise floor of the X2 has dropped dramatically, to the point where we're sometimes not sure if it's turned on if we're not passing signal!

#### Peter Meredith

##### Set-up

I found setting up the TGX20s out of the box to be essentially plug-and-play. We assign Dante to manage the system word clock, and use Dante Controller to patch everything in. I really appreciate that we don't have to segregate SONICUE on its own VLAN.

##### Redundancy

We set up the redundant Dante port, analogue, and AES failovers for testing in our warehouse before deployment, and they all work perfectly. I like the fact you can select failover priority, and define how long the system waits before it switches over. In practice, the switchover in case of failure is seamless. Our torture testing determined a gap of maybe half a millisecond that you could only just hear if you were listening for it.

##### Software

I have found the new SONICUE software much more user friendly than IRIS-Net. Where I used to take an hour to build a show file in IRIS-Net, I find SONICUE has reduced that to around 15 minutes. Its skin, layout, and GUI just makes more sense. It's also got the flexibility to build files offline then transfer to the devices, or download the current settings from the amps and open it in the software.

##### Interface

While the full functionality is available in SONICUE, we still use the TGX20's front panel touch screen a fair bit. We typically do this to quickly load speaker presets for the different rigs we send out, so it's handy not to have to use a laptop. I also use it when we run the X2 with different components, such as elements with 90 degree horizontal dispersion instead of 120 degrees, or switching between cardioid and super cardioid subwoofer presets.

##### Sound and Build Quality

The TGX20s are sonically impressive. It's an open sound; clean, but with lots of grunt. There's a real sense of space and headroom. Compared to the H5000s, the TGX20s push out way more power while taking up the same 2RU of rack space. They're robust, only slightly heavier than their predecessors, and one person can still pick them up. Despite being so high powered, they handle their heat perfectly. We have never seen a temperature overload warning appear in SONICUE, and that's running three in one rack with just a little bit of spacing. They run extremely efficiently, with a decent built-in fan that pushes air effectively.

##### Support

In terms of support, distributor Bosch have been great. We had all of our questions answered promptly by both phone and email, and they were both patient and understanding of our 'user issues' as we were learning the TGX and SONICUE platform!

##### Brand: Dynacord

##### Model: TGX20

##### Product Info: [www.dynacord.com](http://www.dynacord.com)

##### Australia and New Zealand: [www.boschcommunications.com.au](http://www.boschcommunications.com.au)



# Dynacord TGX20

## The Specs

**OUTPUT POWER**

Load impedance: 2 Ω | 2.7 Ω | 4 Ω | 8 Ω

IMD-SMPTE, 60 Hz, 7 kHz: < 0.15 %

Maximum Output Power per Channel:  
5200 W | 6000 W | 5000 W | 2500 W

All channels driven

**CONNECTIVITY**

Analog Audio Input/Thru: 4 x 3-pin XLR female/male

Digital Audio Input/Thru: AES3 (AES/EBU) 2 x 3-pin XLR (alternative use of Analog In/Thru)

Input Sample Rates: 32 to 192 kHz, internal Sample-Rate-Converter

Thru Connector: active buffered, direct bypass if device is unpowered

Network: 2 x Neutrik etherCON/RJ45, redundant PRIMARY/SECONDARY

Format: 1000base-T/100base-TX, integrated switch

Network Audio Inputs: 8 channels, 48/96 kHz, OMNEO/Dante format

Network Audio Outputs(Monitor): 2 channels, 48/96 kHz, OMNEO/Dante format

Front side ServicePort: 1 x USB Type A

Mains Input: 1 x Neutrik powerCON-HC

Speaker Output: 4 x NL4

**DIGITAL SIGNAL PROCESSING**

User EQ: 12 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Lo-ShelvQ, Hi-ShelvQ, Hi-Pass, Lo-Pass & Notch; 2 filters of them with additional asymmetric filter type

User Delay: 0 to 2000 ms per channel (units: μs, ms, s, cm, m, inches, feet)

Array EQ: 5 filters per channel, selectable as PEQ,

Lo-Shelv, Hi-Shelv, Lo-ShelvQ, Hi-ShelvQ, Hi-Pass, Lo-Pass, & All-Pass

Array Delay: 0 to 500 ms per channel (units: μs, ms, s, cm,m, inches, feet)

Speaker EQ: 10 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Hi-Pass, Lo-Pass, & All-Pass

Speaker X-Over: Hi-Pass & Lo-Pass per channel, 6/12/18/24/30/36/42/48 dB Bessel/ Butterworth, 12/24/48 dB Linkwitz-Riley; Alignment Delay, 0 to 20 ms per channel

Speaker FIR: up to 1025 taps, Linear Phase Filter, Linear Phase Brickwall X-Over

Speaker Limiters: Peak Anticipation Limiter & RMS/TEMP Limiter per channel

Other functions: Source Selection & Mix, Level, Mute, Polarity, Sine & Noise Generator, Level Meters, Impedance Measurement, & Load Monitoring

**(( bssound ))**

**BAND PA SYSTEMS, VOCAL PA SYSTEMS, LIGHTS**

Pick up and do it yourself, or Delivered, Set up and Operated by experienced Crew.

**Mark Barry; (03) 9889 1999 or 0419 993 966**

[www.bssound.com.au](http://www.bssound.com.au)  
[mark@bssound.com.au](mailto:mark@bssound.com.au)

Instead of spending hours and days, opening cases and bar code scanning, before you know what is missing

**Spend minutes! - Reclaim missing assets - Save money!**

Properly configured **RFID**, the right **software**, the right **tags**, the right **team!**

**RentalPoint** SOFTWARE **has the expertise!**

**Watch our video now!**

[www.rentp.com/RFID](http://www.rentp.com/RFID) | [Sales@rentp.com](mailto:Sales@rentp.com)

**CX NEWS**

Get the latest industry news, views, and jobs direct to your email every Wednesday.

Register at [juliusmedia.com](http://juliusmedia.com)

# LIVE RECORDINGS - THE HARD WAY

by Duncan Fry

**Since this is the CX recording issue, I thought it might be interesting to discuss the trouble that my friends and I used to go to getting early live concert recordings - for our own listening pleasure of course, not to sell!**

The first concert I recorded was the Beach Boys at Festival Hall in the 60s. I still have the cassette tape of the show, carefully bootlegged on my mono Phillips cassette recorder with the microphone hung on a string around my neck!

This method of recording worked really well. The Beachies weren't too loud; in fact in some parts they were whisper quiet. The PA consisted of a couple of McLeans' columns each side of the stage and some horns on the stage roof. Since we were about half way down the hall the cassette's mix sounds pretty good, even after all these years.

My friend LL was an audio purist, though, who frowned on cassettes as not really being Hi Fi enough for 'serious' recording, and he was determined to smuggle a reel-to-reel machine and a battery pack into the concert! I don't mean a tiny little Nagra, either - it was a Sony with five inch reels, and it was the size of a small suitcase. We used to call it the Watergate model since all the reporters at the Nixon Watergate hearings seemed to have one.

"You'll never get that past the guys on the door," I said.

"Sure I will, no problems," he replied.

And he did, too.

He tied a microphone around his neck like I had done, strapped the machine onto his back, wrapping it in a couple of sweaters, then put his jacket on over the top. He lurched through the entrance doors of Festival Hall with us, smiling and dribbling at the security staff, looking like Quasimodo in a Harris Tweed sports jacket.

"Is he alright?" one of the attendants asked me. "Does he need a wheelchair?"

I took him aside. "No, don't worry, he'll be OK once he hears the music," I said. "He's really quite normal, you know - apart from being a hunchback!"

LL played the part for all it was worth, rolling his eyes and drooling, gurgling "Music

...music!" Any minute now, I thought, he won't be able to stop himself from saying "The bells...the bells!"

The attendant led us down to our seats. There were a couple of tense moments when he patted LL on the back and said "Enjoy the show, mate." I was sure he must be able to feel the tape recorder, but I guess he didn't feel a hunchback every day and really had no idea what they felt like!

So how did his tape sound, I hear you ask, compared to my cassette? Was this hi-tech (for the 60s) worth it? Well, the recording was certainly sparkingly clean and clear. The Beach Boys would have sounded good, too, but unfortunately all you could hear on the tape was LL's tuneless humming and singing drowning out the music! Hi-tech or low-tech, obviously sometimes it pays to keep your mouth shut!

In 1970 the same gang of us were ecstatic when we heard the news that the Stones were coming to play at the Kooyong Tennis Centre, an open-air stadium that was the traditional home of the Australian Open for many years. We had all seen the band on the previous tours in '64 and '65, where they played the Palais Theatre in St Kilda, and despite the forecast 40+ degree heat for this show we were determined to see them this time too, and hopefully record the concert for posterity.

This was a risky gig to tape - as we sat watching the show, at least three people were hauled out by the bouncers, with mics and recorders trailing along behind them. But LL, leading his usual charmed recording life, had disguised the Sony by putting it at the bottom of an Esky, covered it with a plastic bag full of beer and ice, thereby managing to neatly combine recording and drinking in the one action. In fact the recording nearly stops before it starts, since the first thing you hear on the tape is "Lookout - shit, you've just poured a beer over the tape deck!"

Nowadays thanks to nanny state OHS and promoter greed you can't even bring your own water into a concert, let alone a slab of beer!

Oh happy days (Fry drifts off reminiscing. Ed)

And then, with an "Aye aye, 'ere we go," Mick and the boys launch into Brown Sugar, followed by the single's flip side Bitch, both tracks featuring Bobby Keyes on Sax. Ragged, rough, but everyone's mostly in tune and they rock along.

The whole of the stage was covered in a white cloth, hiding all the amps, with a canopy over the top to (unsuccessfully) protect the band from the heat. At one stage on the tape Mick says "God it's 'ot," and later on "It's not just 'ot...it's f\*\*kin' 'ot!" as he throws a large basin of water over the front rows of the audience.

People tend to reminisce about this concert as if it was a major 'tour de force' show for the band but the reality of the tape recording tells a very different story. The mix, if there was one, was really bad. Mick Taylor the new guitarist was way too loud, and apart from Mick Jagger, were the only things you can really hear - the rest of the band might as well have stayed home!

My recollection of the PA system is of a whole lot of smallish grey boxes and not much bottom end grunt. This is borne out by the sound on tape - a lot of midrange honk and grating top end.

The songs grind on, some good, some plodding, and some sounding extremely unrehearsed. Gimme Shelter is followed by Keep Me Happy, then Tumbling Dice, Sweet Virginia, Honky Tonk Women which kick along pretty well, then All Down The Line, Midnite Rambler, and Jumpin' Jack Flash. I imagine that somewhere in there must have been Satisfaction, but it doesn't seem to have been preserved on tape. The concert finishes off with a very ragged version of Street Fightin' Man that's so sloppy and out of time that Mick stops everyone half way through the intro, and they start it again!

In retrospect, it wasn't the best concert we'd ever seen - it dragged on a bit, plus the boys didn't play particularly well, probably because of the heat or jetlag or too much Courage Export lager or too much Bob Hope. But listening to old tapes like this is rather like looking through an old photo album. We all look like badly dressed fools with too much hair in old pictures - well I do!

I like to think of these tapes as living acoustic souvenirs of the era, warts and all, rather than compare it to a pristine studio recording. Not that you could ever complain about Rolling Stones albums as being over-produced!



Those ACETA interviews for the Archive of Excellence are terrific...

I wonder who the next inductee will be?

Visit [aceta.org.au](http://aceta.org.au)  
and all will be revealed.

Your industry, working for you.

**aceta**   
Australian Commercial & Entertainment  
Technologies Association



# THANK YOU FOR A GREAT YEAR!

*A huge thank you to all our valued customers and brand partners for all your support and loyalty throughout 2019.*

