

CX

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Ambition Ignites

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Building An Opera House With Air

MCEC Goes Fibre Optic
Digital Everything, Everywhere

Crew Wage Survey
What You Are Paid

Roadskills
Kylie Minogue
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GEARBOX REVIEWS: Symetrix Jupiter 8 • ETC Color Source PAR • Audio-Technica System10
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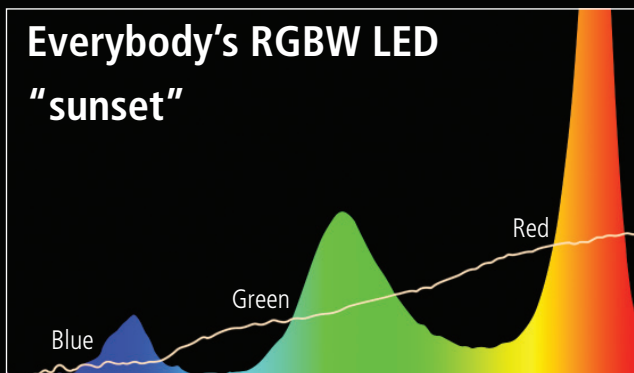
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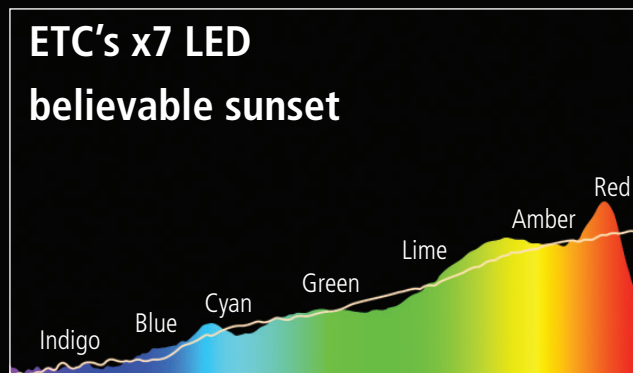
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lighting design by Neil Austin, photo © Max Narula

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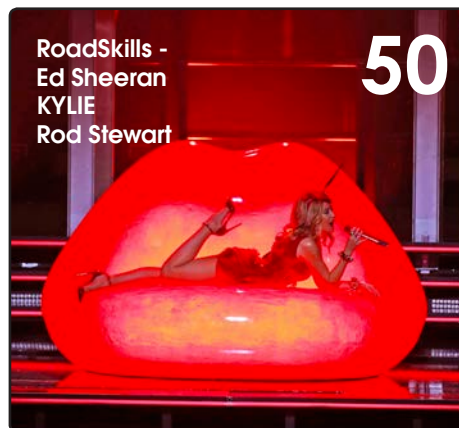
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CX103 2015. PRINT EDITION

EDITORIAL BY JULIUS GRAFTON

FRANKFURT DAYS

The CX team (Steve, Jason, Cat and Julius) hit Frankfurt on Monday ahead of the enormous Pro Light and Sound show in April. Opening on Wednesday and running four long days, we needed all that time to try to make sense of the place.

The exhibition complex in Frankfurt spans half a million square metres. Not all of it is in use for the Music Messe and Pro Light and Sound show, but the six main and auxiliary halls still required a shuttle bus to get around.

Outside were various events and demo's, which were excellent on day 1 and 2 since the weather went into unseasonal spring mode. With clear sky and low 20's it was great, day 3 and 4 were back to cold, such is a European spring.

STAYING IN FRANKFURT

It is a major trade show city, yet the population is less than a million. Hotel prices and many other prices go UP when there is a big convention in town. We paid about 245 Euro per night for a serviced apartment at the Adina, which is about A\$330.

Meals ranged from 13 to 30 Euro, beer from 4 to 7. Uber transport was cheap, at around 6 Euro to the show (15 minute drive) and 26 Euro to the airport (half an hour on the motorway).

STAYING SANE

Flying on Singapore Airlines our guys split the trip staying a night in Singapore. That way they could take the day flight, leaving Singapore at lunchtime and arriving at 8pm in Europe.

Despite this, jetlag is a devil; every arrival day in every new continent I am foggy and more confused than normal.

Cat went on Cathay Pacific and spent time in an airport hotel there. I flew from New York, but had a weekend in Zurich to decompress. Whatever the route, flying in to a tradeshow in Europe or the USA, us Australians need time to get sorted!

LITTLE THINGS

A serviced apartment is a godsend, as they have things like a kitchen and a washing machine! Last year in Vegas, Cat found Hilton Grand Vacations Suites on the Las Vegas Strip, which cost between US \$150 and \$200 a night.

Staying in Vegas in a non-casino is mandatory for us, since entering and leaving your accommodation via a gaming floor is very nasty. The other massive bonus with an American apartment hotel is that it will have two things that a regular American hotel does not. A fridge and a kettle. I kid you not!

Luckily CX has a good travel policy, we meet Australian's at various overseas shows who fly tight and share rooms. I can't think of anything worse.

- Julius

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NEWS

CX INDUSTRY NEWS



Behringer on the move again Australis appointed



Uli Behringer has fired his Australian and New Zealand distributor Galactic, and appointed Australis Music.

Galactic lost the brand after a dispute about sales statistics for the first quarter. Galactic say they exceeded their ordering budget in Q1 but under fulfilment and an accounting error at Behringer led the brand to appoint the new distributor.

Galactic director Paul Goldsmith is disappointed, but says they did a very good job in the years they handled the brand. He wishes Australis all the best.

Australis will also handle the TurboSound brand from The Music Group, which is the corporate parent for brands such as Midas, Klark Teknik, Eurocom, Behringer and Bugera. TurboSound was most recently distributed in Australia by Hills.

Australis General Manager Kirk Schramm told CX the new brand offerings sit very well along with their other recent addition Line 6 – the inventors of the POD multi-effect. Line 6 have recently rolled out StageScape live sound workstation and StageSource loudspeakers.

Behringer have had a series of distributors in Australia, including a period where the brand had its own distribution infrastructure. In 2010 they appointed several regional distributors, and hired the largest of these, Galactic, exclusively at the end of 2012.

The Music Group occupies a new 70-acre high-tech campus in Zhongshan, China [pictured]. They have over 100 automated manufacturing lines, fully automated transducer production lines, injection molding and hydro-forming facilities plus a total "clean-air" wood products and painting pavilion.

As many as 5,000 staff live on-site and enjoy a variety of dining options, on-premises childcare, medical services and recreational facilities.

Midas distribution remains with National Audio Systems.

FROM OUR ARCHIVE: [HTTP://CXMAGBLOG.COM/2012/09/13/BEHRINGER-ANGRY-AT-CX-REVIEW-OF-X32](http://cxmagblog.com/2012/09/13/behringer-angry-at-cx-review-of-x32)



Frankfurt Show Changes 2016 Pro Light and Sound Show Reorganised



What was once just Music Messe is now two distinct shows, with the Pro Light and Sound section set to dominate the music product show that started it all. Back in 2002 the Pro Light and Sound brand was applied to the growing component of professional equipment exhibitors.

Now the two shows are set to overlap, with Pro Light and Sound assuming the premium halls nearer to the city centre, and Music Messe moving to the back end of the enormous site in Frankfurt.

CX attended the 2015 event last month in Frankfurt, which hosted over 2,100 exhibitors and as many as 100,000 visitors – all of whom paid 20 Euro in advance or 30 Euro on the day.



With Pro Light and Sound assuming the primary position, that show will run Tuesday through Friday (April 5 – 8) while Music Messe will start later, running Thursday to Sunday (April 7 – 10). The timing includes a later start – 10am, but a later finish time of 7pm.

The times are controversial, with exhibitors CX spoke to not happy at the late finish. The consensus view was that 9am was always too early, and sparsely populated. A reduction of an hour a day would be acceptable, indeed welcomed.

Comparisons between the two shows are difficult, since the music show is popular with public while the pro show is generally trade only. Now the music show will host public every day instead of two of the four days.

With continual growth of the Pro Light and Sound show, the Music Messe show appears to be shrinking – in line with a long downturn in music equipment sales revenues.



Osram Expands the Love

New lamps & exclusive deals



ABOVE | ROBE CEO
JOSEF VALCHAR

ACROSS | CLAY PAKY'S
SPHEREISCAN

Having recently purchased Clay Paky, German light source maker Osram have produced a custom 1,400 watt lamp for the Italian firm. Powering the new Scenius moving light and the Sphereiscan moving mirror, the lamp offers true 6,000 degree colour temperature.

Clay Paky CEO Pio Nathum told CX that they were free to use light sources from any manufacturer. He also revealed that launch sales for the Mythos 'all purpose' moving light were steeper than sales of the Sharpy – itself the fastest moving new product in the firm's recent history.

Clay Paky say the 1,400 watt lamp will be exclusive to them for at least six months. Rival builder Robe also have an exclusive deal with the 1,700 watt lamp used in their new BMFL.

Robe CEO Josef Valchar told CX at Pro Light and Sound in Frankfurt that his exclusive lamp deal was subject to a confidentiality agreement, but the duration was 'longer than that', referring to the six month deal Clay Paky struck with Osram.

He added that the market was in good shape overall, and that Robe sales were up 10% over last year.



Doing The Numbers

Music Gear vs Pro Light & Sound

Having spent some long days amongst the 2,200 exhibitors and 108,000 visitors at the Frankfurt show in April, a trend emerged. It was confirmed later when the organisers announced next year they will flip the show. (See Page 9).

Visitor numbers at the giant event had slid slightly from a peak of 113,576 in 2013, while exhibitor numbers have remained almost exactly the same over the past three years. So why 'flip' the show?

"Moving creates a potential for growth", in Pro Light and Sound, they say. So how do Music (M) and Pro (Light and Sound) compare? The Frankfurt Messe people have stopped breaking out the results for Pro Light and Sound against Music, but our floor gossip says that music is at best static and at worst shrinking; while pro is on the rise.

Looking for hard data is difficult, since very few manufacturers release reliable results. The Harman International Group are a public company, with a Pro division that now includes Martin Professional – their first lighting company. It joins AMX, JBL, Soundcraft, dbx, Lexicon, AKG, Crown, Digitech and Studer in the group.

For 2014 they reported sales of around US\$1 billion, up 22% from 2013. Better still, the first half of 2015 showed sales up by 30%, probably in part due to adding in Martin and AMX which are recent additions.

The National Association of Music Merchants (NAMM) in the USA report sales across what they describe as the "music products industry" are tepid, running around the same level for the past decade. Accounting for low inflation, sales are headed backwards in today's dollar terms.

Apology for Omission

PARITY TECHNOLOGY CONSULTING

In last month's issue of CX, we ran an installation case study on the Carlton Connect Initiative in Melbourne. Our apologies to Parity Technology Consulting, who we omitted from the final edit of the article by error. Parity developed the AV Return Brief and produced a detailed AV tender specification including all product selection, the AV schematics, floor plans, power and data coordination. Parity also ran the tender on behalf of the University of Melbourne and appointed Soundcorp as the successful respondent. Through the rest of the project, Parity managed Soundcorp's activities and responded to their RFIs, and provided final QA inspections and reports, assisting in handover.

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- YAMAHA



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XLED 3007

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www.jands.com.au
or (02) 9582 0909

Christie Boxer 4K30



The Christie Boxer 4K30 sets a new industry benchmark for rental staging and fixed installation applications including concerts, themed entertainment, projection mapping projects, museums, planetariums and more. Not only does this latest Christie innovation deliver the best size to lumen output ratio in the industry, weighing in at less than 68kg and a brightness of 30,000 lumens, the Boxer 4K30 also ships with six 450W mercury lamps installed to simplify lamp management both in the projector and on the shelf. Additionally, it is equipped with 4K (4096 by 2160) native resolution and built-in Christie TruLife image processing to provide the highest bit depth and fastest frame rate for an exceptional performance.

Australian Distributor:
Christie Digital Systems
www.christiedigital.com or (07) 3624 4888

Extron DTP CrossPoint 84



Extron Electronics is pleased to announce the immediate availability of the DTP CrossPoint 84, a new model without an integrated control processor or amplifier. The versatile, compact 2U DTP CrossPoint 84 delivers all of the technologically advanced capabilities necessary to design and integrate a complete AV system, including an 8x4 matrix switcher with 4K inputs and outputs, two built-in independent scalers, integrated DTP and XTP transmitters and receivers, and comprehensive audio DSP capabilities.

Australian Distributor: Extron Australia
www.extron.com.au or (08) 8351 2188

The latest addition to **PR Lighting's** extensive LED moving light range is the XLED 3007 Beam. Weighing in at just 8kg, this tiny fixture has seven 20W quad chip (RGBW) LED sources and a six-to-one zoom range of 7 – 42 degrees. The seven cells of the 3007 are controllable in a 2-2-2-1 matrix allowing for a range of visual effects, and like its fixed angle predecessor (the PR 2007), the fixture includes linear colour temperature correction (2700K-10,000K) and endless rotation of both Pan and Tilt. Additional features of the XLED 3007 include its ability to operate to sound (sound to light), optional wireless control, touch keys on the panel and over-temperature protection.



**Robe
BMFL Blade**

The new **BMFL Blade** fixture offers four fast shutter blades with smooth and precise movement. The shutter blades are individually angled and positioned within a frame which itself can rotate through 90 degrees, providing a sharp or soft, precisely repeatable frame for the projected image. This produces a new series of fast-moving in-air effects through pre-programmed shape and movement sequences of the blades, gobo images can be trimmed or framed in a regular, triangular or trapezoid shape. Each pair of opposing blades can close for a complete blackout. Two gobo wheels – one rotating with six slot&lock gobo positions plus another with 8 static gobos can be combined with the Animation wheel to create numerous dynamic projected effects.

**Radial
J48 Stereo
active direct
box**



The **Radial J48 Stereo** features rugged 14 gauge steel construction and a book-end design that protects sensitive switches and connectors from damage. The internal I-beam ensures the fragile internal PC board will not torque which could lead to premature 'cold solder joints' developing, causing joint failure. All connectors are made from glass-filled nylon and are insulated from each other. Inside, a unique power supply converts the 48 volt phantom, increasing the headroom for improved signal handling and lower distortion. This results in a linear frequency response that spans from 10Hz to 40kHz while being able to handle high output instruments such as a digital piano or active bass without choking.

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



**Robe
DL7S Profile**

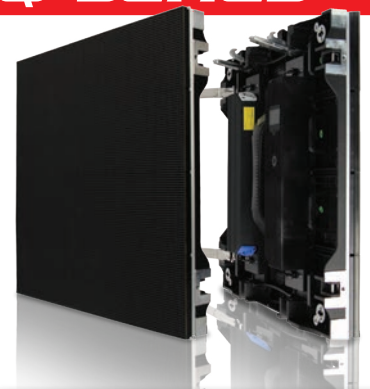
The **DL7S Profile** is the first DL range fixture to receive a powerful new 800W version of the LED engine with seven colours for unprecedented smooth, stable, and even colour mixing and a very high CRI of 92. From the deepest to the lightest colours the DL7S provides a rich full colour spectrum experience, and features custom colour mixing and dimming and seamless operation especially at the minimum brightness levels. Four fast framing shutters within the optical path are individually controllable for position and angle and the entire framing module can be rotated. Crisp and soft frames can be used on projections, and a new series of effects is possible using a selection of pre-programmed shutter blade shape and movement sequences. One rotating gobo wheel with six slot&lock gobo positions plus a static gobo wheel with 8 static gobos can be combined with the Animation wheel. Other effects and features include variable frost, rotating prism and super-fast iris.

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**AViary
maggi solo**

For installation professionals requiring the power and high definition resolution of a maggi on just a single output, the **AViary maggi solo** is the ideal solution. Packed with all the features of its bigger sibling, maggi not only provides realtime playback control, but delivers control for parameters such as speed, in and out points, and geometry along with colour and contrast correction in realtime. All changes can be stored within the timeline controller with the option to trigger playback and adjust parameters via external protocols such as SMPTE timecode, MIDI and more.



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**Clear-Com
LQ**

The **LQ Series** is Clear-Com's latest innovation for extending intercom system to remote locations and for connecting multiple systems together across distances. Have an intercom system installed in one location but simply need to give remote users access to one or two channels from beltpacks? Need to tie two or more different intercom or audio systems together across some distance? LQ Series is the fast and simple solution to extend or link communication or audio anywhere over secure IP network (LAN, WAN, Internet).



LQ Series is available in a 2-wire (LQ-2W2) or 4-wire (LQ-4W2) option. The LQ-2W2 can connect partylines together for an intercom circuit over IP and is Clear-Com and RTS compatible. The LQ-4W2 connects and routes audio between analogue ports of any matrix intercom system, analogue telephone circuits, two-way radio gateways and audio consoles. A maximum of six LQ Series devices can be linked together in any 2- or 4-wire combination.

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The **PG ALTA family** delivers rock-solid performance and reliability that sets the bar for accessible, professional gear for the aspiring musician. PG ALTA features a range of affordable microphones, including vocal, instrument and a selection of drum microphones; together with three new condenser microphones – the PGA181 side address microphone, PGA98D miniature drum microphone and the PGA98H miniature woodwind and brass microphone. Featuring a sleek black metallic industrial design, PG ALTA represents a whole new level of versatility on the stage or in the studio and continues Shure's 90 year tradition of manufacturing audio products of the highest quality and construction.



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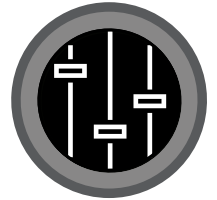
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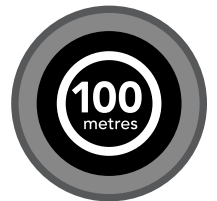
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Yamaha
StageMix V5 & R-Remote V2



Australian Distributor: Yamaha Music Australia
au.yamaha.com or (03) 9693 5111

StageMix, the popular remote control application for CL-, QL-, M7- and LS9-series digital mixing consoles has now been updated to version 5 and is available for immediate download. Features common to all mixer series StageMix apps include a new realtime analyzer, Mix-to-Matrix Sends plus support for dB displays in the mixer window. But it is CL StageMix and QL StageMix that receive a vastly expanded feature-set when used with CL/QL firmware V3, including Support for multiple iPad connections (up to 5), 8-band Parametric EQ control, USB Recorder control, Surround Panning control and support for Output Channel Linking.

R-Remote offers remote control of the head-amp of R-series i/o racks in cases where on-console head-amp control is not available. Some common uses for the R Remote application include live recording with only an R series I/O rack and a computer running Nuendo Live or a similar DAW, connecting an R series I/O rack to a console such as the 02R96VCM or 01V96i that does not support remote HA control (a Dante-MY16-AUD card must be installed in the console), operating Dante network installation infrastructure independently from a console, and more.

Mackie
My Fader V3

Mackie has announced the availability of My Fader v3 for DL806, DL1608 and DL32R. The Mackie My Fader app gives you pocketable control over your Mackie DL Series Digital Live Sound Mixer and version 3 is now compatible with Mackie Master Fader v3. My Fader v3 provides the perfect set of features for on-stage performers controlling their own monitor mix and is also great for the FOH engineer who needs quick wireless control from anywhere in the venue.



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Electro-Voice
EKX Portable Loudspeakers

The EKX is the latest member of EV's portable loudspeaker family. Positioned above the ZLX and Live X families and below EV's premium ETX series, the EKX provides the perfect balance of pro-grade performance and affordability. The series is available in both passive and powered models and consists of 12" and 15" two-way loudspeakers, plus 15" and 18" subwoofers. Cardioid Control Technology, Signal Synchronized Transducers™ (SST) waveguide design, and Class-D power amplifiers (1500 W in powered models) coupled with QuickSmartDSP all work together to create precise coverage and superior sound quality. Powered and passive EKX models can deliver up to 132 - 134 dB peak SPL. The range is suitable for portable applications such as musicians/DJs, and the eight M10 threaded mounting points also make the EKX ideal for installed sound applications.



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Eve works with MAC Quantum Profile as System Tech for Resolution X



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www.showtech.com.au | www.martin.com

RØDE

Claims Wireless Burning Ambition Ignites



In January RØDE unveiled their new RØDELink digital wireless range at a dealer function in a beachside resort in San Diego. The dealers went nuts; standing, cheering and stomping. It was a moment, a room packed full of true believers from around the world.

BY JULIUS GRAFTON

"I've been trying to do wireless for 25 years. I started a project 16 years ago and stopped when I realised I didn't have the money," RØDE CEO Peter Freedman (pictured left) said. "It was a dream. I kicked this off three years ago. The world has changed with the TV channels taking over the available bandwidth."

RØDELink operates in the 2.4-gigahertz environment, and offers up to 100-metre range. RØDE says it offers the best signal-to-noise and longest range of anything in its class.

It has a massive head start; a decade ago RØDE started in the video microphone category with the advent of cheaper, mass-market digital video cameras.

"I know I am known as an arrogant bastard", Peter Freedman offers, "but this really is the best in its category; the volumes we are going to do will be amazing. We're number one in video mics, I invented that category. There are hundreds of thousands sold each year now, and they will all plug into one of these" he says offering a RØDELink TX unit with a flourish.

"I have huge targets. The Free Trade Agreement with China and Korea is phenomenal; we opened our own office with a serious team just for marketing in China last year. We are opening in Korea and soon in India. We think globally, and act locally."



Classic II Limited Edition Vintage-Voiced Valve Microphone



Procaster Broadcast Quality Microphone



NTR Active Ribbon Microphone



NTR 11" diaphragm condenser microphone



MICROPHONES FRØM SYDNEY

"I consider myself an enthusiastic amateur with all the high technology RØDE now owns. I like machinery, guns, cars. We could now make anything, but my heart lies in audio," Peter says.

When Peter was young, the family emigrated from Sweden. His mum, Astrid, and dad Henry, set up Freedman Electronics in 1967. They had the exclusive rights to import the German brand Dynacord at that time. 'Freedmans' was the market leader in Sydney back then. They built and designed speakers, sold mics under the Freedman brand and installed literally hundreds of PA systems into the clubs around NSW. Freedman Electronics was also the first retail PA shop in Australia, and was located in Ashfield.

After Henry died, Peter borrowed a lot of money to expand. This was at the wrong time, late 80's, and with the wrong gear and the wrong people involved.

It trashed his family business. "I lost everything, including the house", he says. "We had two little kids and it was six years of hell before we had any let up. It was really hard. I didn't have a car, I walked to work. We had no money. The banks were on my back every day.

"I knew Colin Hill from years back when we met in the UK. He came to Sydney on a sales trip for another company. I offered him a job. I needed a salesman so I could concentrate on the technology and strategy. Colin moved over, and started working for me as my main sales guy. 'Sand to the Arabs' was Colin. The best in the business.

"Colin was out there selling sound systems to clubs, pubs and in one case he sold a system to a funeral parlour. He even sold them disco lights and a smoke machine for the chapel!"

Looking for anything else they could make a dollar from, Peter pulled out a Chinese studio mic sample he had bought in China way back in 1981.

"Colin took it out and showed some local dealers. He came back and said, 'there's a lot of interest in this'. It was the beginning of the new wave of home studios with the ADAT making good quality possible in small studios at low cost. Everyone now wanted studio mics. We had a reasonable mic at less than a quarter of the price of anything around.

"We needed a name. After showing the mics around Colin said to me, 'I think these will sell as fast as a rat runs up a drain pipe'. We both laughed and thought about calling them 'Rat' mics or 'RØDENTS'. That's where RØDE NT came from.

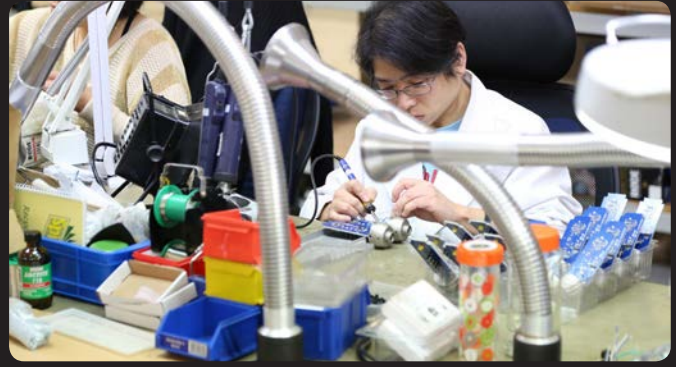
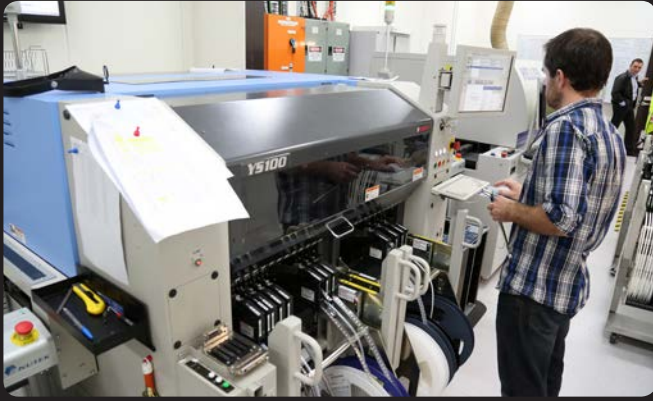
I added the slash through the 'O' as well to make it look a bit European."

Things started okay, but they were selling very little in reality, and only in Australia, to a few dealers. Peter dreamt of the possibility of selling 500 mics a year. Last year they sold 600,000 mics.

"Things were still bleak, and our big break came with a last roll of the dice, a ticket to Los Angeles on the credit card, some flea infested motel rooms and a large bottle of Jack Daniels.

"I walked around the NAMM tradeshow, literally asking everyone I met if they wanted to buy a mic. I was like some sleazy guy with watches running up his arms.

"After the show I went to the top studios doing demos to engineers at Capitol, A&M, Ocean Way, Westlake, Record Plant etc. They all gave me a few minutes, but none of them were interested. I used the names I met from these major studios as a way to get appointments at the next studio and then at the stores."



"About three weeks into my crusade, I went over to West LA Music. After six hours of tap dancing, they bought 100 mics. I teared up; I knew I must have something. We were off. We were just modifying the electronics in a Chinese mic, at that time too.

"As time went on, we sold more and more. A few years later, I could see my Chinese suppliers wanted a bigger slice of the pie. They were shocked at how many we were selling. I also started to realise that we could make better quality, and at a lower price with much lower lead times right here, if I had the equipment. That was when I decided to invest in manufacturing gear, and to make RØDE in Australia.

"Today we make microphones and other technology way better and cheaper than China. In fact we have better technology than any other microphone manufacturer in the world. You have seen some of this yourself today."

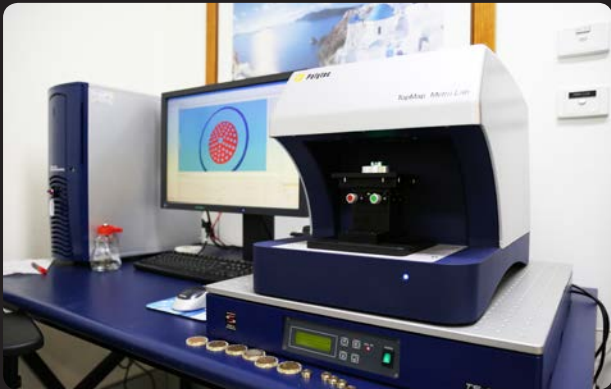
HØW THEY DØ IT

We are inside Factory 2 at RØDE Microphones in Sydney. 150 staff make the entire RØDE range here, and, as we tour, the sprawling complex machinery is being moved into the newly purchased Factory 3.

RØDE has \$26 million worth of machines and robotics, with more coming. Raw ingredients enter the facility. Brass, copper, wires, plastics, paint and electronic components come in, and then completed microphones leave for all corners of the earth. Aside from the finished product there is 'swarf' - all the metal milling and turning produces waste, which is recycled back to source. "They pay me for it, and then they sell it back to me!" Peter says.

"An example of our pursuit of the best possible technology in all areas can be seen in our main painting line. I wanted to offer black, non-reflective mic bodies. I needed a super hard paint that was just a few microns thick, so that it did not affect ultra fine threads. I found a military ceramic paint, and then bought the auto painting line to do it. After being assured it was not a problem it didn't work. It cost me 600 grand to get it right and





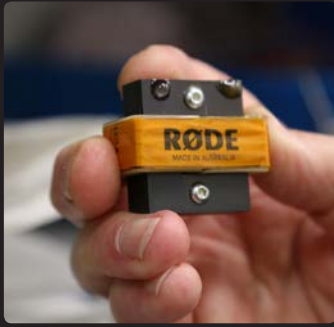
we had to rebuild it. I called Smith and Wesson, the gun makers - they have the only other auto spray line we could find - to see if they'd help me. They told me to bugga off!" RØDE boss Peter Freedman is in an ebullient mood.

"This is really cool. If you tell anyone I'm gonna kill you!", he continues as we walk into the machining room. "This is spectacular, no other mic company in the world has one of these, nor the metrology to design parts this accurate. We are machining microphone backplates to a tolerance of less than a micron. Fully auto with a custom-machining cell operated by robotics. We start with a piece of brass, machine it flat, add micron features and then it produces the acoustic labyrinth of through holes and blind holes that make up a back plate in our transducers. This is insane technology. It puts RØDE so far ahead of any other mic company in quality and consistency, and we developed it here and had it built in Japan by one of the world's biggest CNC machine companies. This cell cost us over three million dollars, has taken well over three years and is unique. The manufacturer told us it was the most complex project they had ever worked on."

"I'm still a wanker. I did luck it, there's a lot of people in the Australian audio industry who are way more intelligent than I am. I found something hot at the right time, and I ran with it. I am not letting it go though."

"I don't need the money anymore. I am safe. If RØDE gets too big for me to manage, I will get out and maybe become a VC, or a 'business angel' - do a bit more





NT3 3/4" Cardioid Condenser Microphone



NT1000 1" Studio Condenser Microphone



NT5 Compact 1/2" Cardioid Condenser Microphone



NT2000 Seamlessly Variable Dual 1" Condenser Microphone



S1 Live Condenser Vocal Microphone



NT55 Multi-Pattern 1/2" Condenser Microphone



NT4 X/Y Stereo Condenser Microphone



Podcaster USB Broadcast Microphone



mentoring and maybe help people with some dough. But I love audio; I've been working in audio for 40 years, and around it for 53 years, so I suppose I do know a little bit about this game now."

"I don't want to be arrogant, but the worst thing now for RØDE with the products we release is they may not sell as well as we predicted; we don't lose money.

"There are also literally millions of people in the world who've bought a RØDE and that is an amazing feeling."

HITS AND MISSES

"I am very competitive. That is obvious. Where does this come from? Maybe I need to prove something. Usually competitive people are insecure. That is probably true of me too.

"Of course, not everything I touch turns to gold, and stupidly I went and bought the studio monitor company Event a few years ago.

"Event was started by Russell Palmer, the CEO of Alesis, after he split from the owner, Keith Barr. They started with RØDE as the first product they sold and continued to be our importer in the US for quite a few years – they got us in. Without that lucky break, you could stand at a US trade show for ten years and everyone would just walk past.

"Eventually Event got into financial trouble, so I decided to buy the company. We set up an office and design lab in Seattle, and I spent six million on it in total. I always joke and say if I had of put six million dollars in a pile and lit it, at least there would have been some heat from it for me! Still, I learned a lot, and I do have the world's best studio monitor to show for it. The sad thing is people don't give a stuff!

"I had unbelievable problems sourcing components,

and building them. Each one cost us money to sell. You don't know what you don't know. It is sad, I learned the hard way. Event is still going, and the Opal is still in production. I may still have another 'play' with the technology.

"With RØDE I predict that within five years, we'll do more biz in China than the USA. Big call I know, but it's going nuts for us right now.

"We now sell more studio mics in Germany than Neumann and Sennheiser, and that is something I am beyond proud of. They make great mics, but I am kicking their butts in so many categories. Business is war, and I like a good fight.

"We have worldwide distribution, and leading technology and equipment.

"We also have more than enough money to do anything we want. RØDE will be the biggest mic company in the world before I am done. Anyone who gets in my way will be cut down."

Then we walk up some stairs, to experience the 'El Dorado' moment, the ultimate audio tool. Peter has just installed a full-sized anechoic chamber. This oversized room is a non-reflective, non-echoing space where you can measure audio without atmospheric or architectural interference. There is a modern myth that if locked inside for a long duration, you start to go crazy as you hear your heart beating.

So that's RØDE 2015. As we go to press Factory 3 is being fitted out with more machines, and Factory 2 is being rearranged, with a machine or a tool for every occasion. We ride back to reception on one of Peter's new golf carts that are now needed to get around the RØDE Campus – he has another being custom made in the US for his use that will have a petrol engine and a Ferrari front end!

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THE MILL REPORT

Andy Stewart owns and operates the mill in victoria; a world class production and mastering facility. He's happy to respond to any pleas for recording, mixing or mastering help...
 contact him at: andy@themillstudio.com.au
 or visit www.themillstudio.com.au

SWIMMING IN THE STREAM



Imagine if the car industry were the music industry. Vehicles could be downloaded for free, copied, test driven and replaced at the click of a button. Fewer and fewer people would own cars yet more and more would be driving brand new ones.
DOESN'T MAKE MUCH SENSE DOES IT?
 welcome to the music industry in the early 21st century.

One difficult aspect of music production in the here and now, whether you're an artist or producer, is understanding how to make money from the products you've poured your heart and soul into.

Music has always been a highly speculative venture of course, a bit like investing in a pan and shovel and heading for the hills to find gold. But things are changing quickly in terms of how consumers access music. It won't be particularly for the better or worse... but I suspect the effects will be tangible industry-wide. How we react to these changes will be the real test of our adaptability in months and years to come.

THE PROSPECTS OF PROSPECTING

Bands and artist have always been 'gold prospectors'. The main difference now, however, is that they're heading for the hills in greater numbers than ever before, hoping against hope to strike it rich. The competition has become immensely fierce.

But now this rivalry is bringing with it wholesale changes to the way consumers access their preferred music. People are becoming exponentially less interested in owning music, and more interested in streaming it at will. The days of CD collections on shelves and immense iTunes libraries on hard-drives seem to be receding fast.

So where does this all lead us? How the hell can anyone make money out of music production if no-one is buying it?

In short, by making fantastic music, embracing the imminent changes and learning how to take advantage of the global marketplace that internet-based companies are opening up.

ALBUMS, SINGLES & DIGITAL SHOPFRONTS

Depending on how ambitious you are for your music to pay you a decent financial reward, the music you make needs to be produced in a way that is attractive to listeners who are then willing to pay for it.

This doesn't mean you have to become a total sell-out, or preoccupied with stylising your music to suit a specific market. You don't have to become a Woolworths executive. You just have to understand a bit more about how the audience you're appealing to seeks out and purchases their music.

The way I see it, there are far too many bands, solo artists, publicists and managers in this industry with little or no experience of how to promote their wares, and not nearly enough customers willing to pay for the products they offer. It would seem there's a disconnect between buyers and sellers right now, and it's not solely about musical taste.

Take, for instance, the traditional album concept. Nowhere is this disconnect more stark than in the way the two parties view this format. Personally I love albums, but without a doubt I'm in the minority these days. If

statistics count for anything, current global sales figures highlight one irrefutable fact: that singles are what the vast majority of music consumers purchase. Albums, it seems, mean almost nothing to them.

Meanwhile, most recording artists still view the album as the ultimate pursuit, and for them, success in this form of the game is what matters most. But running in parallel (yet seemingly contrary) with this ambition is their equally important desire to be recognised for the good work they've done, and for the music to sell and earn them an income.

But of the literally billions of iTunes downloads and YouTube views, the vast majority are of one song off an album. In many cases, a successful single will be downloaded or viewed hundreds of times more often than every other song on its album release. From a consumer's point of view, singles reign supreme, and albums are old hat.

So why then are artists so resolutely immune, in the main, to this statistical reality? Launching costly albums into the marketplace at painfully long intervals, and never with enough money to promote more than one or two singles anyway, seems to be a bad plan, at least from a marketing perspective. If consumers want to buy their music one ice-cream at a time, why do musicians – who presumably want to be commercially successful – insist on trying to sell them a whole box?

I fear the ground is shifting out from under these artists without them even realising it. I'd like to think albums still have a strong place in the world of music – as I do test cricket – but the writing seems to be on the wall for large, costly to make, expensive to buy 12 song long-players.

When digital downloads took over from CD sales, and consumers could hand pick one song from here and another from there, the idea of 12 songs being inexorably glued together as a larger entity went bye bye. It's perhaps time we understood this fairly obvious fact.

For now at least, regular single releases seem to have far greater impact than albums, as they cause a splash

more frequently and keep the interest in your band percolating. They cost less to make, and arguably allow artists to focus their efforts more efficiently. Right now, singles rule and show no sign of relinquishing their crown.

IS OWNERSHIP DEAD?

The other stark reality in 2015 is that the tide is inexorably pulling us into a future where nothing in the world of multimedia entertainment will be owned or valued in the traditional sense.

The idea of 'ownership' – where you buy a movie or album, and sit it on a shelf when it's not being used – is changing rapidly, though not quite uniformly...

From my own perspective, the recent arrival here at The Mill of the NBN and Netflix has transformed, quite literally overnight, the way we view films and TV.

We've gone from being regular purchasers of physical copies of movies and TV shows to video streaming junkies. Whilst we do pay a modest amount for it, we most certainly don't pay anything like what we would have if we'd purchased these films physically at JB Hi-fi.

We probably won't buy another physical copy again now. Our preference for ownership has flipped on a dime and we're now firm streaming converts.

The same thing is happening in the music industry. More consumers are streaming stuff, and fewer people are paying for physical copies, particularly digital copies. CD album launches that once saw good numbers of CDs sold, now sell far fewer copies unless the artist makes a concerted effort to spruik their sale during the gig, and signs copies at the end of the show. Even then, most people walk out empty handed, or perhaps with a vinyl copy, which indicates to me that if people are going to buy music in 2015, they want it to be cool, novel and/or signed by the artist.

The concept of an album isn't necessarily dead, but perhaps the writing is on the wall for the CD format. This point was thrown in my face quite starkly the other day when I took a brand new Jeep Cherokee for a test drive, only to discover that, when I tried to put a CD on, there was no CD player!

The advertisement features a large blue circular logo with a stylized 'NW' in the center, set against a background of a large stadium filled with spectators. Below the logo, the text 'NW GROUP' is written in large, bold, blue and grey letters. Underneath that, it says 'TECHNICAL SOLUTIONS FOR LIVE EVENTS ACROSS AUSTRALASIA'. At the bottom, there are logos for partner companies: Norwest, Cairellie, Oceanio, spyglass, and Phase1 Audio. The footer includes the locations 'Sydney, Melbourne, Brisbane, Auckland, Wellington, Perth' and the websites 'nwgroup.co.nz' and 'nwgroup.com.au'.

APPLE STREAMING, THE DEATH OF ITUNES?

In the very near future I'll wager a huge battle for streaming supremacy will take place in the music industry – if it's not happening already. Apple may win this game, who knows. Perhaps it will be a company that no-one's heard of yet. Either way, it will happen, and soon. When it does it will have the potential to turn the very notion of music 'ownership' into a tangibly antiquated one.

Artists and producers will earn the bulk of their income through streaming, and less from people owning music outright. Digital companies like Bandcamp and YouTube – or their equivalent – will go from strength to strength, and artists will use these convenient digital 'shopfronts' to sell their wares globally – music, merchandise, tickets to shows, the lot.

There has never been a more competitive time in the music biz, but nor has global access ever been so convenient.

perforated metal grille, the element rides atop a hefty base that contains the step-up transformer and active electronics.

The overall impact of the physical design is impressive. The mic on the one hand looks almost old-fashioned – art deco even – while at the same time feeling modern and refined in its fit and finish. The NTR weighs just over a kilo, and comes with a decent screw mount that holds it firmly in place. I was particularly impressed by the large tightening wingnut that makes locking the NTR into position easy as pie.

Sonically, the RØDE NTR, like all good ribbons, is a mellow microphone that captures a full tone with a bias towards thumping bottom end. It's smooth in the tops but reluctant to express it, the benefit of this being that simple shelving EQ, when required, reveals a gentle, far less aggressive tone.

The problem with ribbons in the past – apart from their unreliability and fragility – was that they were typically both dull and noisy... a dubious combination. This meant that any attempt to liven up the top-end commonly brought with it a snowstorm of noise, making the design difficult to work with.

The NTR has none of these issues. It has great noise specs (equivalent noise level – A-weighted – is 15dB-A), is quiet as a mouse, and being an active ribbon, has far more output than passive designs. This takes the load off preamps being required to crank huge levels of gain into the signal path, which typically added even more noise to recording chains.

The NTR offers classic ribbon tone without the noise problems, making it a far more versatile workhorse. I'm glad there's not been too much emphasis placed on trying to make it sound more like a modern-day condenser.

Two of these mics work brilliantly as overheads on drums, are superb on brittle sounding percussive instruments like tambourines and shakers (which, through a condenser, can often sound hyper-metallic) and horns likewise sound full and true, rather than harsh and emphysemic. On some vocals the NTR sounds mellow and smooth, reducing sibilance to a minimum. On others it inevitably requires some high-end shelving EQ to lift the highs, and when you do the results are typically clear, quiet and un-hyped. In a nutshell, the NTR does all the things you want a ribbon mic to do, and none of the things you don't.

This mic looks intriguing, sounds smooth and balanced, is built like a tank (in Sydney), and importantly, has a 10 year warranty, which includes a free replacement ribbon in that time period.

If you like ribbons I would urge you to check out the NTR.

RØDE NTR

I MUST TAKE MY HAT OFF TO RØDE; IT REALLY IS A COMPANY OF DOERS, ITS LATEST RELEASE THE LONG AWAITED ACTIVE RIBBON MICROPHONE, THE NTR.

Looking like its design inspiration came from Sydney's Anzac Bridge, the RØDE NTR is a sturdily constructed mic that makes a bold feature of its key component: the 1.8 micron, bi-directional ribbon element. Clearly visible through a semi-transparent



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Mixing Verdi's Aida

HOW TO BUILD AN OPERA HOUSE WITH AIR

Verdi's tale of a love triangle set against the backdrop of war between Egypt and Ethiopia has always inspired lavish productions with epic backdrops, including the 1987 production at the Luxor Temple where much of it is set, and the fairly regular productions at the Pyramids of Giza. Not to be outdone, Opera Australia's 2015's Opera on the Sydney Harbour puts Aida on the water, with the Opera House and The Coathanger behind her, bringing both the city and the show to life. Jason Allen checked in with the crew to find out how they make it all work...

OPERA ON THE HARBOUR AIDA

EDITORIAL | JASON ALLEN | PHOTOGRAPHY | HAMILTON LUND & PRUDENCE UPTON



Mixing an opera, some would argue, is a contradiction in terms. After all, this is music written to be performed and experienced acoustically, preferably in a European concert hall that was built for the purpose. Staging it outside, without so much as a wall or ceiling to assist with acoustics, is difficult. Exacerbating this by putting it on a floating structure in over Sydney Harbour is wilfully masochistic. But what a result! The view of the Opera House and The Bridge as the sun sets, the massive 18 metre tall head of Nefertiti on stage, the city lights and the massive fireworks display at the end of the Triumphant scene. Try doing that inside.

But there's no getting round the fact that opera singers and an orchestra mic'ed up and amplified through a huge Adamson line array to bleachers in a park is not going to sound as Verdi intended, and certainly isn't going to sound like what regular opera goers are used to. This is why Sound Designer and FOH mixer Tony David Cray has gone to extraordinary, obsessive lengths to create not only the most detailed, finessed mix I've ever seen executed live, but also try and reclaim a sense of acoustic space outdoors by skilfully deploying 188 Quest MS801 loudspeakers that do nothing less than make the entire show sound like it's in a concert hall. So how did Tony and the audio production team from Norwest accomplish this feat?

"Amplification in the opera world never happens, and it's arguably impure compared to the natural voice and natural orchestra, but out here it's a necessity," said Tony David Cray, on-site at Opera on the Sydney Harbour. "Opera Australia talked to me about what we could do. I had been mixing the films of their productions, and I was interested in the idea of taking the film mixing process and doing it live, trying to get that level of fit, finish

HAMILTON L. AND

PHOTO CREDIT

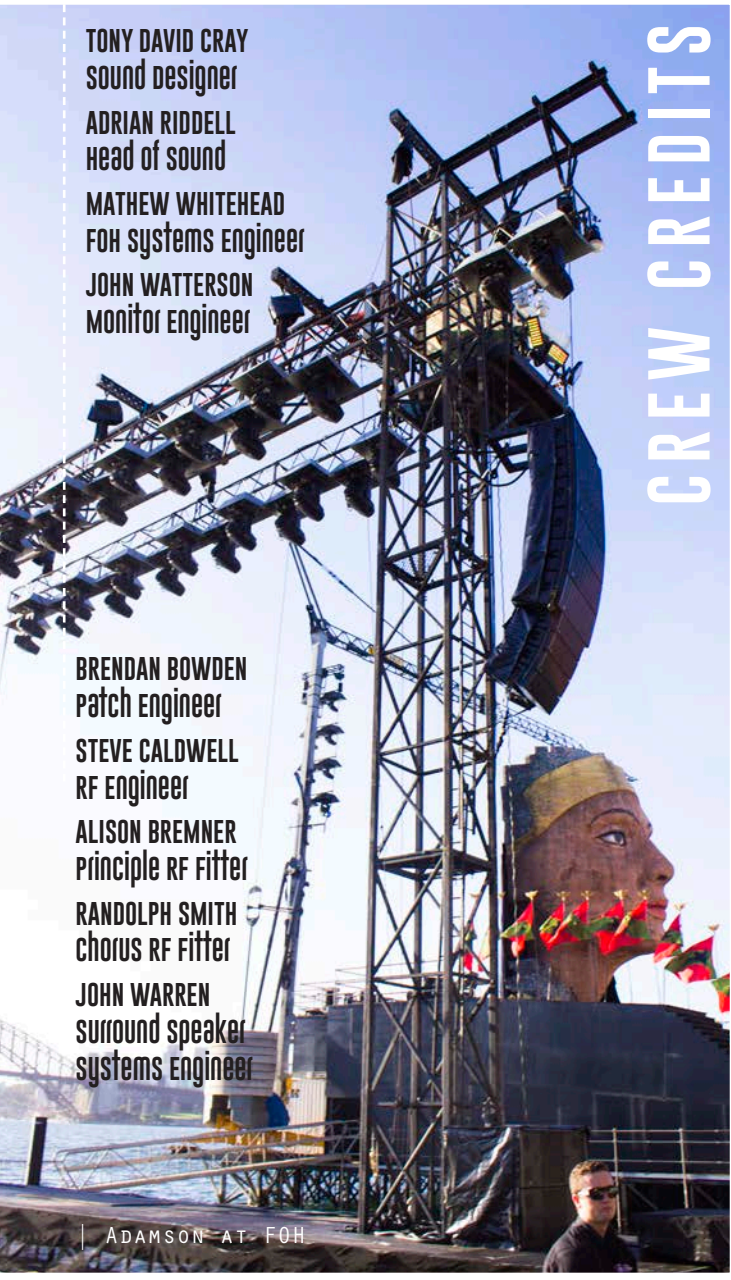
and production to opera outside. A lot of the technical decisions and approach we've taken have been to facilitate the goal of doing a film mix live."

The first technical decision has been to use a DiGiCo SD7 at FOH to handle the extraordinary routing and automation Tony uses. "We're using almost every input and output on the console," Tony continued. "We have 824 cues that are cleaning up the movements and traffic in the score. There's loud, huge moments where there are 100 people on stage and 55 in the orchestra that transition to a single person standing lonely on stage. That's a very different acoustic space and you can't leave mics open. So there's a lot of work I do in rehearsals and offline with multitrack to go through and programme the console."

TONY DAVID CRAY
Sound Designer
ADRIAN RIDDELL
Head of sound
MATHEW WHITEHEAD
FOH systems Engineer
JOHN WATTERSON
Monitor Engineer

CREW CREDITS

BRENDAN BOWDEN
Patch engineer
STEVE CALDWELL
RF Engineer
ALISON BREMNER
Principle RF Fitter
RANDOLPH SMITH
Chorus RF Fitter
JOHN WARREN
Surround speaker systems engineer



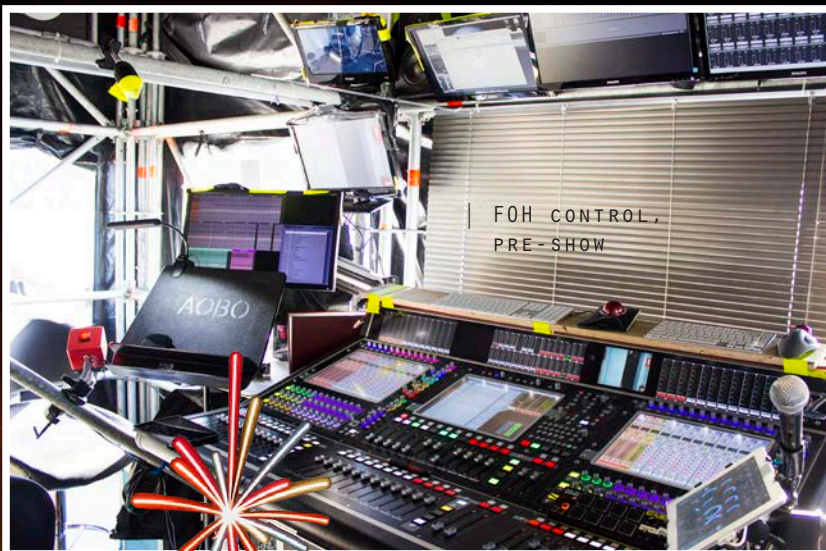
ADAMSON AT FOH

To this end, pre-production is incredibly important. "We do a week of rehearsals at Homebush with the FOH and monitor consoles," explained Adrian Riddell, Head of Sound and FOH Systems Engineer for Norwest. "We mic up all the performers and the orchestra. On this production, we're running 56 channels of RF, 16 on the principals including back-up. Everyone's on in-ear monitors. Some of the performers are used to IEMs, but some are new, and they take a



THE 'BIG RED BUTTON'

THE SECRET WEAPON - ONE OF 188 8" SPEAKERS HIDDEN UNDER THE SEATING



while to get used to how they sound with ears. Opera singers tend to take the buds off the ears and let them sit without complete isolation so it's more like a live acoustic. While Tony's programming in rehearsal week, myself and the rest of the team come on-site and put the PA in. After rehearsals finish, desks and control comes in and we're rehearsing again in a day and a half."



TONY'S LEMUR CONTROL WITH DIGICO SD7

In translating the post-production mixing style to a live show, Tony has used the console routing to get the best of both worlds. "I've come up with a technique that I use in my film mixing where faders feed faders," he elaborated. "A source comes into a channel, perhaps has some sort of processing, and is automated quite dramatically; like a mute, but with fades. That will feed another channel that sits at unity gain and has an extra level of processing. It's kind of a mastering approach. I can programme one of those sets of faders severely, and have another set I can control live."

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The show's 824 cues are all in aid of keeping anything out of the PA that detracts from the music. All significant rests in the score mark where microphones must be muted. The smallest break in phrasing is a new mute cue. Tony has an assistant conductor sit next to him reading the score and firing off a 'big red button' at every point a new cue is marked. "This way, I'm able to clean and nip and tuck all of the mess out of the mix. We've learnt that the moment the woodwind section finish a phrase and are getting ready for the next one, they'll clean their instruments, so we've taken a lot of time to clean that out, as you would do in post. There are huge sections in the score that are cue after cue after cue of just pulling things in and out."

Even with all the processing an SD7 packs on board, Tony was still looking at ways to expand his palette. "I was feeling restricted by the console interface and the desire to use other EQ and compression," he mused. "In previous years, we ran ProTools for external processing, but working with a mouse isn't nice. I like the tactile; it uses a different part of your brain. So I came up with the idea of Ableton Live being controlled by (Liine's OSC and MIDI control software) Lemur on an iPad, from which I'm primarily controlling the FabFilter Pro-Q plug-in. With the FabFilter, I've got 20 bands of parametric EQ. I looked at how to best create an interface and realised the Euphonix System 5 I'm used to using only has four bands, plus HPF and LPF, so I recreated that on Lemur. Now I have control pages with each character, their name and the four bands of EQ I've chosen."

Tony's approach to using compression is equally creative. "I don't use compression per se," he clarified, "I use parallel compression. I don't cut the tops off, I lift the bottoms up. I'm just lifting the lower end of the dynamics above the noise floor. You can't compress opera; it makes it sound awful and distorted. I'm using one of the inbuilt dynamics processors in Ableton Live partially because it sounds nice, but also because it's got a wet/dry mix so I can do parallel compression per channel, which saves me channels on the console."

Tony's custom touch interface on the iPad running Lemur also controls what he considers the most important parameter in the mix – the threshold of the high pass filter he has inserted over the entire orchestra. "There's a strange effect of low end on the harbour with the orchestra," observed Tony. "At different dynamic levels, certain frequencies excite different nodes. Generally, the quieter the dynamic the higher I'll run the threshold. I use it as a sculpting tool, which I also do when I'm mixing modern music. By restricting the low end, you can then use it for the huge moments. Even though I'm not going any louder than we already are, by expanding the spectral picture, you get impact. In some sections scored for just double bass, I'm rolling it off at 110 Hz. It's an emotional thing, depending on what's going on stage, what the feeling of the show is on the day, even what the weather's like."

The crowning glory of the audio production is the astonishing effect of the loudspeakers deployed under the seating. 188



MILIJANA NIKOLIC AS AMNERIS & LATONIA MOORE AS AIDA

PHOTO CREDIT | PRUDENCE UPTON



WALTER FRACCARO AS RADAMES

PHOTO CREDIT | PRUDENCE UPTON

loudspeakers on a delay matrix 14 sends wide and 10 sends deep, the system manages to do with minimal processing and no obscure equipment what specialised products have tried to do for years – make one acoustic sound like a completely different acoustic. Tony and Norwest have managed to make the PA sound like it's interacting with a room, even though it's firing into almost completely unlimited space. "It came out of a discussion I had with Adrian Riddell last year," Tony stated. "How do we build a false roof to envelop people? We were saying how the seating can be annoying because you can hear the performers underneath warming up, which we then realised was because they were acoustically transparent. So we came up with

some concepts and models, and Adrian and Norwest said it was possible. We got on site and early on I decided to try and see what it was like. I pushed it up and could not believe how it changed everything, even though you couldn't really hear it. The most gratifying thing was there were singers sitting in the auditorium during the rehearsal, and when I pushed it up, they all looked up. It was the exact psychoacoustic effect that we wanted."



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MCEC GOES DIGITAL

WITH AMX AND RUTLEDGE AV

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| MCEC'S MICHAEL WALKER



| AMX AUSTRALIA'S GRAHAM BARRETT



| RUTLEDGE AV'S GRAEME HOWLETT

TECHNOLOGY MOVES FAST. DESPITE OPENING IN 2009, THE MCEC'S VIDEO DISTRIBUTION AND SWITCHING INFRASTRUCTURE WAS ALREADY STARTING TO SHOW SIGNS THAT IT MIGHT BE SUPERSEDED IN 2011. AS ELECTRONICS MANUFACTURERS STARTED TO MOVE AWAY FROM ANALOGUE OUTPUT PORTS ON THEIR DEVICES AND TOWARDS HDMI AND WIRELESS CONNECTIVITY, CORPORATE AV GOT HARDER, WITH MORE GEAR NEEDED IN THE SIGNAL CHAIN TO GET EVERYONE'S CONTENT DISPLAYED. FAST FORWARD TO 2015, AND THE ONLY PHYSICAL PORTS THE NEW MACBOOK AIR HAS ARE USB AND THUNDERBOLT.

Michael Walker, Infrastructure and Equipment Manager at the MCEC, saw the writing on the wall. "Our customers bring their own devices, and laptops started turning into iPads and smartphones," he recalled. "On the existing analogue infrastructure, every time someone came in with a digital device, we would have to put adapters and scalars in-line. A technician would then have to spend

time with the customer lining up a converted image. Our customer base is not particularly AV savvy – they're presenters. They might be a doctor or lawyer presenting at a conference. Their nervousness started to become apparent when it took a technician 10 or 15 minutes to get a picture looking good on a screen."

TANGLING WITH CABLE

With simple day-to-day tasks getting more difficult, and getting AV working now looking harder than it was for the presenters at home, Michael needed a solution "I started researching where digital signal was going and how the industry was dealing with it," he continued. "We started looking at HDBaseT seriously. But we found out that our UTP infrastructure was susceptible to interference from our two-way radios. We made the decision at that point to explore fibre optics and partnered with AMX on a project scope and design. Our expectations and signal paths were generated by the systems engineering team on-site, so we had a very clear specification to put out to market. We found that Rutledge AV had the best understanding of the infrastructure



| AMX ENOVA DGX 6400 ENCLOSURE

| AMX ENOVA DGX 16 ENCLOSURE



| MCEC MEETING ROOM, PREPPED AND READY FOR BUSINESS



| MCEC TECHNICIAN LORA THOMPSON IN THE MASTER CONTROL ROOM

they were putting in, our customer base, and what their needs were going to be."

Graham Barrett, Technology Director at AMX, got involved with the project in the early stages. "The MCEC has legacy Cat6 cabling. The complexities of getting signal from point A to point B were exacerbated by the

fact the system was analogue. Their first thoughts were to reuse the existing Cat6 cabling and replace the matrix switching and end points. We were confident that would have been fraught with danger with anyone's technology, and they quickly realised that replacing the current infrastructure

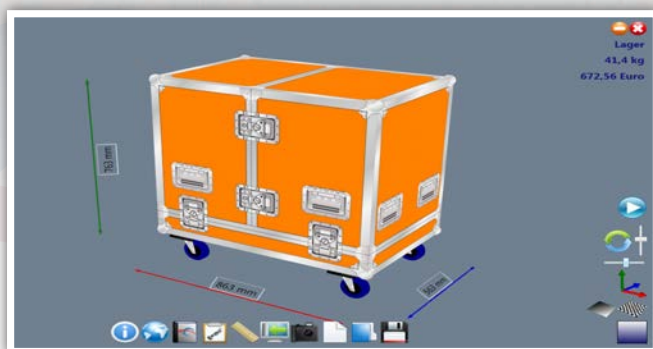
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with fibre was the best option. It added some cost and complexity, but in terms of the solution it was a no-brainer when they realised the challenges of running digital over old UTP and STP cabling."

FACTORY FRESH

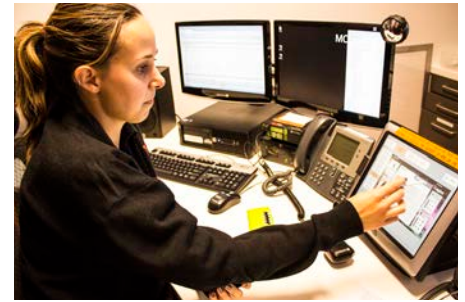
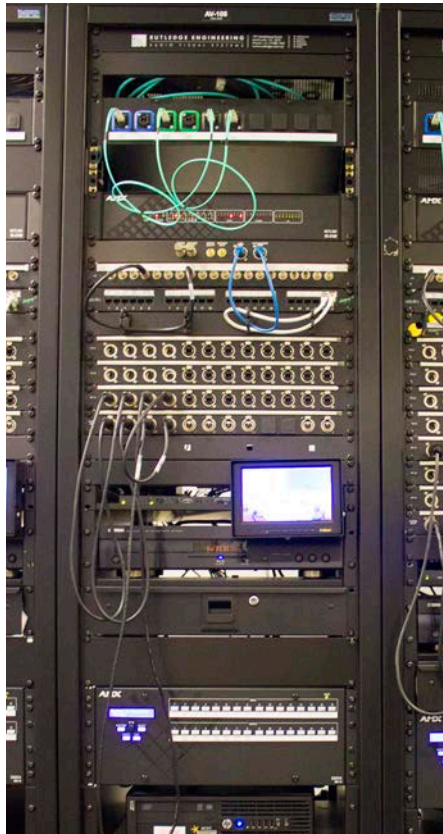
"We'd announced and were launching the new AMX Enova range of fibre solutions," Graham continued. "From a timing perspective it worked out well, as it was about six months before the project went live. MCEC got the very first Enova DGX fibre transmitter receiver and first Enova DGX matrix switcher in Australia. They ran an extensive evaluation in pre-release, before it was available to the market. To date, the results I've seen are stunning. The picture quality they're getting compared to the old system is chalk and cheese."

With new technology being deployed on the project, Graeme Howlett, Senior Project Manager at Rutledge AV, got his team to run it through its paces before installation. "Our field engineers built a mock-up using the gear here at Rutledge AV," Graeme explained. "We set up the typical equipment for a meeting room and put it through its paces, connected via fibre, with extra joins to simulate what it would go through in an everyday situation. There was feedback between us and AMX about card configuration, what worked and didn't, what needed changing and some firmware updates."

OPEN ALL HOURS

Being a working convention centre, access was the key issue through the upgrade. "We can't just shut down to allow for infrastructure upgrades," explained Michael Walker. "We sectioned off the building in pieces to maximise efficiency and worked with our service departments to reduce to capacity and keep the project moving." In the end, 45 active spaces were upgraded, with all meeting and conference rooms, plus the Melbourne Room and the Plenary all now interconnected via fibre optics, which carry video, audio and control from anywhere to anywhere else.

AMX Modero ViewPoint Touch Panels run the entire facility, including from in the master control room. The system allows remote access into every service in the building; audio, vision and lighting. From the master control room, the main EnovaDGX 64x64 video router can be patched to take



| MCEC TECHNICIAN LORA THOMPSON CONTROLLING THE AMX SYSTEM FROM THE CONTROL ROOM'S MODERO VIEWPOINT TOUCH PANEL



| LEFT: FRONT VIEW OF TWO OF THE MEETING ROOM RACKS ON LEVEL 1

signal from one space's Enova DGX16x16 router and make it available on another room's Enova DGX16x16 router. Each of the 43 Enova DGX16x16 routers has an input from and an output to the 64x64 router. Within each meeting space, local or remote signals are selectable to view on the room's screen. Five of the 64x64's outputs run into IPTV boxes, which send out signal to the MCEC's IPTV service. This enables the MCEC techs to send signal into any remote or extra locations not serviced by fibre.

HIGHEST COMMON DENOMINATOR

AMX's EDID management and SmartScale technology have eliminated that long-standing bug-bear of AV integrators – lowest common denominator screen resolution. "It's infinitely more manageable," agreed Graham Barrett of AMX. "Because Enova DGX gives you full EDID management from point-to-point, our Smart Scale solution takes whatever is coming into the system and scales it to the native resolution of the display. Customers simply plug in a source and it's displayed perfectly, unlike the old days when you had to bring everything down to the lowest quality that needs to be displayed and reduce quality to the higher resolution displays. With SmartScale, everything is always delivered at optimal quality for each display."

Even as the system was going live, the relentless march of progress saw AMX upgrade its control technology. Luckily for the MCEC, AMX looks after its partners. "About three months after the system went in, we announced the upgrade of the DGX system to the new NetLinx NX Master platform," Graham Barrett confirmed. "Because the project was brand new and was a flagship project for AMX globally, we upgraded all of the switches to the new platform at no charge. They're now capable of utilising the new security and simple configuration support within the NX platform. All in all, it was a fantastic project. We worked very closely to identify the MCEC's requirements and helped them make the appropriate decisions for the transport mechanism. There's some very astute people in the MCEC engineering team. Every switching system in the control room is fully digital and standard across the whole site. They can swap parts and maintain just a small fleet of spares to support a large deployment."

Michael Walker concurs. "We're getting a lot of positive feedback from our regular customers, but mostly we don't hear anything because it's totally plug and play. With a lot of our newer customers, what's really gratifying is that they don't even experience it as an issue. The customer expectation is that it should be that simple and I feel we've gotten the building to the point where it meets that expectation."

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Symetrix Jupiter 8

Faster DSP design



BY JIMMY DEN-OUDEM

Open architecture audio DSP has become pretty popular in the past few years, not only because it's more affordable than it once was, but the programming interfaces we use to design the signal path are much better than they once were. That said, designing signal structure within an open architecture DSP still takes time. Then once you install the thing you need to adjust signal level and other parameters throughout the device, which takes more time.

Symetrix designed the Jupiter range of processors to make the process faster, and they do this with a range of pre-designed DSP configurations they call "apps". Over 70 apps are

available for download, with applications ranging from gain sharing automixers, to retail SPL computers, home theatre speaker processing, and BGM zone mixers.

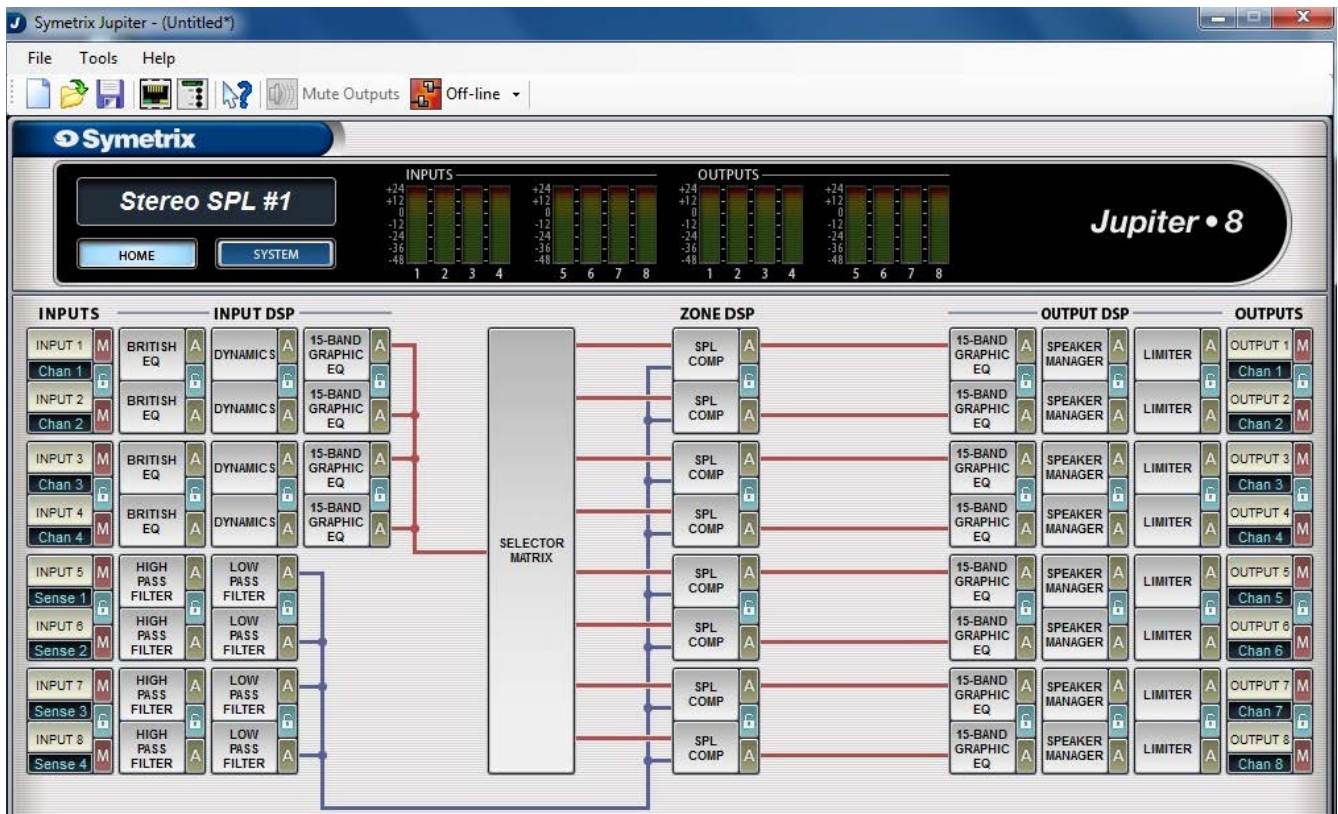
As best as I can describe it, Symetrix has made an open architecture device which allows only specific configurations. They sell Jupiter as a fixed architecture range, but the reality is they're just being modest: it's too flexible to be considered totally fixed architecture.

Physically the Jupiter boxes are compact and unassuming. Multi-colour indicators on the front panel show input and output signal presence, and there are additional LEDs for power, network and ARC status. Jupiter has literally NO buttons on the front panel, and just one recessed

unlabelled button on the back.

The rear panel is a bit more interesting, with euroblock connectors for 8 inputs and 8 outputs. Jupiter 4 is a 4x4 version, and Jupiter 12 is a 12x4 unit. Pick whichever model best suits your signal count. All units have RJ45 for Ethernet and ARC connection, as well as a locking DC connector and euroblock for four logic outputs and 2 external control inputs. Most of it's very self explanatory, except for perhaps the ARC port which exists to link to Symetrix ARC series wall panel user interfaces.

As much as I find mounting external power supplies in racks an annoying process, I've had enough real-world experience to know that internal power supplies are one of the most likely points of



failure in audio DSP units. It's a lot easier to pull out a DC connector and replace a line-lump supply than to remove the whole DSP for off-site service, so for all I dislike the external power supply I think Symetrix has made the right choice with it.

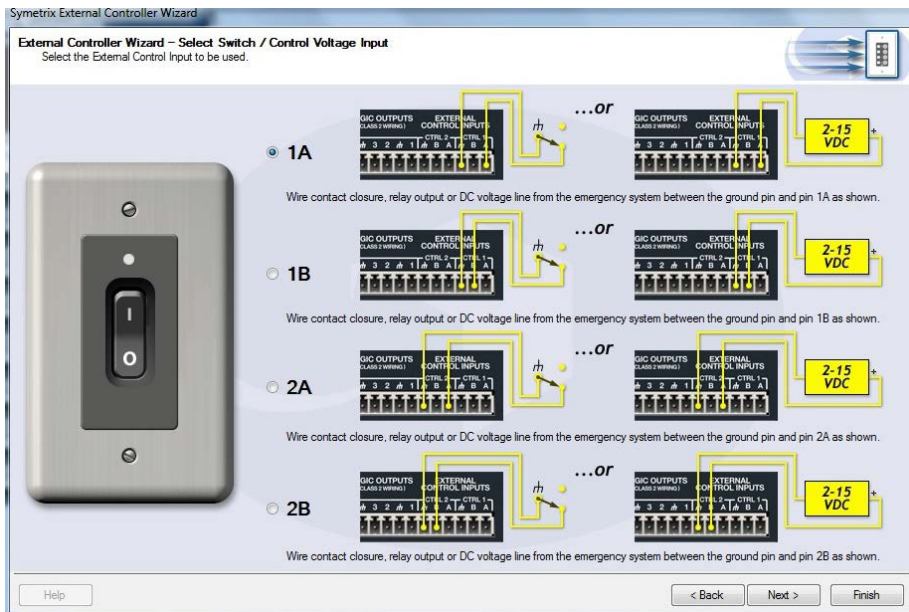
Something else they've got right is the signal flow in their apps – it's good and practical without being overcomplicated. Sure an open architecture system lets you put a billion of everything into each path, but typically all this achieves is making the system

take longer to commission. The apps I looked at include enough control to get the job done, but not so much that you're endlessly opening and shutting windows just to get the system up and running.

THE LOOK

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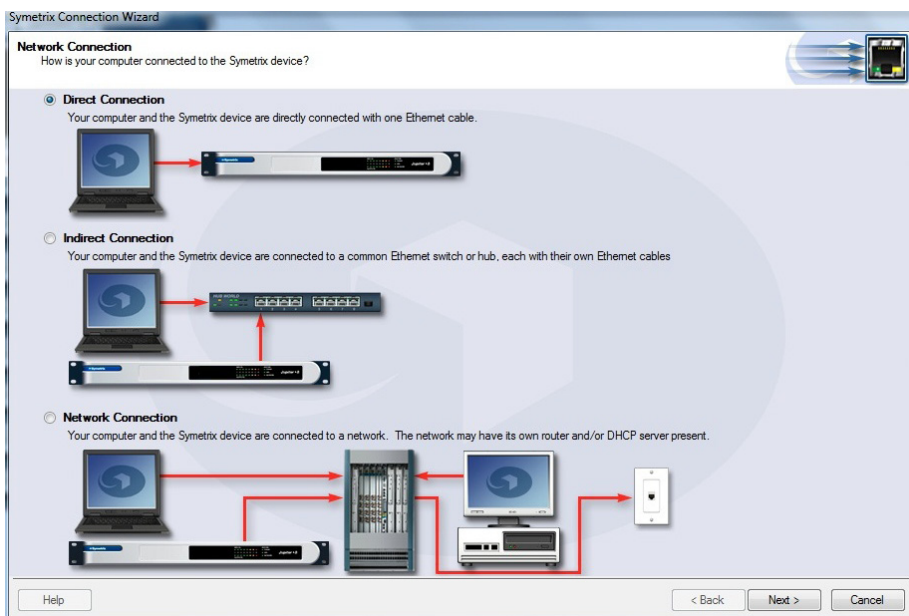
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The ARC wall panels can be programmed through a wizard-type process, as can the external control inputs. The wizard even shows you a diagram of how to wire the interface, which is good since it saves you looking it up in a manual. If you connect the Jupiter to a DHCP enabled router you don't need to worry about punching in the default IP either – just launch the software and go.

If your client doesn't want wall panels, or there simply isn't the budget for additional physical controls, then the ARC-WEB interfaces are a good option. Again these are programmed via the wizard, and can be accessed from a computer or smartphone on the same network as the Jupiter unit. Four separate ARC-WEB interfaces can be programmed, each with different levels of functionality. Best of all, they're totally free to program and use.

I think what Symetrix has done with Jupiter is a very good thing. Not every job has the budget for full open architecture implementation, and often the fixed architecture alternatives just aren't quite right to get the job done. The Jupiter range makes quality signal processing and routing with custom controls a realistic option in situations where previously it would have just been a dream.





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ETC Color Source PAR

Elegant simplicity



BY JIMMY DEN-OUDEM

Some time ago ETC added the Selador range to their product offering, and from this we've seen the evolution of products such as the Desire and Lustr+ ranges. ETC kind of takes a different tack on colour mixing to other manufacturers – they go beyond RGB or RGBW, and in fact use a seven colour mixing system. It yields very nice results, but it's not exactly what you'd call cheap.

Color Source is a new LED PAR product from the company, and it's priced to sit within the reach of more hands. It uses an RGB-L (red, green, blue, lime) colour mixing system. Rather than include white emitters in the engine, ETC has figured out how best to balance colour emitters with Lime and extra Red to achieve greater white light output.

When you look at the front of a Desire series fixture, you can see the individual colours of the LED engines. It's what I call externally homogenised. The Color Source PAR is internally homogenized, meaning the output of the various colour LED modules is combined before it passes through the front lens of the fixture. You can kind of see the colours on the front of the fixture, but only on the actual lenses and only if you look from the very side. There's no colour fringing at all on the beam, which has a native angle of 14.5 degrees. There are seven "engines" visible from the front of the fixture, and they are controlled together as a single entity.

Physically there's not much about the ColorSource PAR that's too exciting – it has a filter holder arrangement on the front into

which various beam adjustment lenses can be slotted, it has five pin XLR and PowerCon in and through connectors for DMX and power, and there's a three digit numeric LED display on the back. Control is via three buttons. You get less in the way of control features than you would on a D40, but then it also costs less. ETC specify that the last fixture in the DMX chain must be manually terminated.

The filter holder is an interesting touch in that it's not something commonly found on this type of fixture. ETC make a range of lenses which allow for linear, round or oblong lightfield shaping. The yoke and its accompanying lock are good and solid, so once you tighten it there's no movement at all – a common problem with cheaper fixtures. There are several safety wire attachment



points integrated into the fixture casing. At full tilt, the Color Source PAR draws just under 90W, so a good number of units may be daisy chained together.

DMX control requires five channels – intensity, red/green/blue level, and strobe. You don't need to control the Lime LED level – the fixture interprets the input control signal and adds lime as is necessary, so it's easy to control. If you don't want to use a console then it's quick to recall one of the 12 preset states or six preset sequences. The preset selection includes white at both 3200 and 5600K, which I like. If the factory presets don't do it for you, or you just need something different then you can re-record them via RDM.

Finally it's probably worth mentioning a couple more features which really set the ColorSource PAR aside from much cheaper fixtures. First up, it's factory calibrated, so if you

buy 10 units they will all produce the same visual output when given the same control signal. Same deal if you buy 100 units. It sounds like a little thing, but it's actually quite important. The other point is that ETC does good thermal management – there's a variable speed fan and the LED control circuitry responds to environmental conditions to ensure consistent visual output.



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Audio-Technica System 10

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BY JIMMY DEN-OUDEM

In what seems to be a pretty common move for wireless manufacturers, Audio-Technica has turned to the 2.4GHz frequency band for its latest wireless mic offering.

System 10 would in many ways be considered a consumer level product. It's priced like one, it's packaged like one, and on the surface the specs look about right to position it accordingly. Our review kit was perfectly geared up for indie filmmakers and the like, including a belt pack transmitter, lavalier microphone and receiver with a neat camera mount. The receiver also has a belt clip, so you can attach it to a pocket if need be.

The diversity receiver employs an internal 3.7V Li-Ion battery, which takes around 4.5 hours to charge and sports a 12 hour run-time. The transmitters (both the handheld and the belt pack) run off a pair of AA batteries, which according to the spec yields a runtime of > 7 hours.

Multiple transmitters can be paired to a single receiver. They can't all be used simultaneously, but one can be switched off then another switched on. So you could for instance use a belt pack transmitter, then quickly switch to a hand held. The pairing process is explained in the manual, and is pretty straightforward. The good news is that the tx/rx pairs come pre-paired out of the box.

The System 10 transmitters all operate at 10mW, which is specified as good for about 30m range under optimal conditions. It doesn't seem like a lot until you put it into context. System 10 is designed for portable and camera mount applications, and in those situations it's common for the person with the mic to be close enough to the camera to be in the shot. I think for this application and market 10mW is probably sufficient. Up to 8 systems can be simultaneously deployed without any frequency co-ordination required.

Using the system is pretty simple. Turn both the receiver and

transmitter on, then connect the receiver output to your camera. The output can be switched between dual mono or balanced operation, so with the right cable you can even plug it into a real XLR socket. It's a nice touch, and so is the headphone monitor output with volume control. Sensitivity on the pack is adjustable via a trimpot, and the receiver output can be attenuated by 10 or 20dB if required.

Really, I wasn't expecting too much from the System 10 but it turns out it actually delivers the goods (and then some). I was surprised by how "pro" a consumer level device could actually be. It sounds decent, and it all works very easily. You can mute and unmute the transmitter with a quick tap on the button, or by holding the PAIR button as you turn it on, this feature can be disabled.

Just for laughs, I sent one of my colleagues for a walk along the street wearing the lapel and belt pack while I stood at the office door and listened on the receiver. With a clear line of sight,



he made it a good 60m down the road before a single dropout was apparent. That's double the specified range. It was still working at 75m, though objects blocking the antennae caused problems at this point. Dropouts are not too bad when they happen either – it just goes silent.

There's a bunch of marketing hype about how System 10 has three levels of diversity assurance – frequency, time and space.

I think they just mean it works really well, since that's my conclusion. System 10 might look like a toy, but it's actually a really solid little product.



BRAND: AUDIO-TECHNICA MODEL: SYSTEM 10
 RRP: ATW-1702 (HANDHELD KIT) - \$499.00 INC GST.
 ATW-1701/L (BELTPACK KIT WITH AT829CW OMNI LAV MIC) - \$599.00 INC GST.
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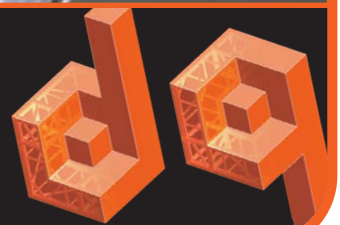
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If truth be told, I didn't quite know what to make of the Right Arm when it arrived at CX. It took some time and experimentation to figure out that while it is largely a theatre specific product, there are other potential applications for it beyond the stage.

Right Arm is what I'd call a remote fixture positioning device from Apollo Design. In a nutshell, you attach the Right Arm to a lighting position, then attach a fixture to the arm. Once this is done, you can remotely pan and tilt the attached fixture via DMX. Due to the construction and mounting options available, it's not just luminaries that can be used with the Right Arm – you could just as easily attach a video camera or projector in place of a lighting fixture.

If you've ever tried to wrangle an ellipsoid or other profile fixture holding onto only the top edge of the yoke, you'll know that it's not easy. Even though the fixture may weigh relatively little, leverage significantly increases the amount of force involved at the mounting point. It's these kind of forces with which the Right Arm mounting point needs to contend. The tilt motors which drive the Right Arm exert around 10 foot-pounds of torque. You probably wouldn't want to put your hands in the way of this thing when it's moving.

Not all fixtures are created equal, and nor do they all balance the same way. Once you add a colour scroller to a profile, its centre of gravity shifts forward. With this in mind, the Right Arm allows you to tilt the arm onto which the fixture attaches in order to shift the luminaire backward or forward relative to the arm pivot point. Or put simply, you can balance the fixture to reduce load on the motors. Once turned off, the motors all let go of their brakes and the arm moves to whatever position gravity dictates it should. While it's on, everything holds position solidly, and position recall is consistent and accurate.

You need a really solid position on which to mount the Right Arm, and you need to do the mounting clamp up really tight to avoid the arm itself tilting left and right. Also, you need to properly balance the attached fixture. I'd definitely use the optional half-coupler kit to

Apollo Design Right Arm Strong-arm tactics



BRAND: APOLLO DESIGN
MODEL: RIGHT ARM
RRP: \$2200.00 INC GST.
PRODUCT INFO:
WWW.APOLLODESIGN.NET
DISTRIBUTOR:
WWW.CLEARLIGHT.COM.AU

BY JIMMY DEN-ODDEN

ensure good purchase on the bar without punching a hole through it.

Unlike a typical moving light, nearly the entire mass of the Right Arm moves. That means the weight distribution is far more prone to change, and hence more force is exerted on the mount. If it feels a little over-engineered in places, I'd care to suggest there's a good reason for that – the Right Arm will support up to 18.1kg of attached fixture.

Movement range is 340 degrees for pan and 270 degrees for tilt, however these ranges can be limited to as little as 90 degrees. Control is via DMX and uses between 2 and 5 channels, the latter option providing 16 bit pan and tilt as well as speed control. At top speed the Right Arm takes about 6 seconds to pan 180 degrees, and while this is pretty quiet the more you slow it down the quieter it becomes. Used for re-positioning fixtures during a theatre show, you'd never even hear it. That's a really attractive point if you've ever sat through a theatre show plagued by a wind farm of moving light noise from above...

In case you do want to use a scroller or DMX iris, 4 and 5 pin accessory ports on the arm allow for connection of these devices. Setup of the unit is via backlit LCD screen

and adjacent menu buttons, and there's not too much to the menu. Independent power cables allow you to power the arm and attached fixture separately, so there's no drama dimming tungsten fixtures if required. The fixture cable is essentially just that – a cable integrated into the arm.

I don't think the Right Arm would be much fun to tour in and out of venues on a daily basis. It's too fiddly and there's too much setup involved to want to do it every day. Where I think it's a winner will be in installations where access is difficult, or small focus changes are regularly required. Add an LED type profile onto the arm and you're looking at a near zero-maintenance fixture. Being able to deploy one fixture to cover multiple stage positions is a win for value, safety, and anyone with limited grid space. It will also hold appeal to users such as shopping centres and corporate environments requiring movable gobo projection.

I think the important thing to remember is that because it's built to hold third party product, there's only so much about the Right Arm that the manufacturer can control. While the product can be as solid and accurate as ever, it's still up to the user to make sure they correctly mount the Right Arm, then attach the required fixture paying good attention to balance.

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Lightware UMX-TPS-TX140 HDMI and more over Cat

BY JIMMY DEN-OU DEN

Remember the days when you could send HDMI over a simple Cat5 balun? No, you don't remember them because they never existed. HDMI is something of a mixed blessing. It's made life much easier for anyone at home needing to plug their bluray player into the television, but it's also much harder to send over long distances and distribute to multiple destinations. How far you can send an HDMI signal down a cable depends on which revision of the format you're using, what kind of cable you're using, who made the devices, and usually some other arbitrary factor like the positioning of the moon in the fourth quadrant of the winter solstice and the lunar eclipse. Or something like that anyway. Now the Display Port format is upon us to further complicate things. It's all a bit of a pain, and I suspect largely the reason we're seeing more people turn to HDBaseT solutions for delivery of HDMI signals. Lightware has had suitable products with which to achieve this for some time, and indeed we've looked at some of them in the past. Today, we look at the UMX-TPS-TX140, which for convenience we'll refer to as the TX140 for the remainder of this article.

The TX140 is an HDBaseT encoder, but it has multiple inputs. The front panel includes VGA on HD15, analogue audio on 3.5mm jack, HDMI and Display Port inputs. Also on the front are video and audio input select buttons. Around the back there's a DVI-I input, balanced audio input, TPS output, Ethernet port, RS-232 connector, and seven way GPIO

port on a euroblock. There are also IR in and out sockets, the locking DC power connector we know and love. The TX140 handles image resolution up to 4K UHD (3840x2160@30Hz, 1600x1200@60Hz, or 1920x1080@60Hz).

So what makes it special? Well, a few things. First up is range – it can send full HD up to 170m. Along with the video, it sends embedded audio, Ethernet, RS-232 data and IR signals. The front panel allows you to choose which video input is sent over the TPS connection, and you can also select either the associated embedded sound or one of the analogue audio inputs. When the device loses power, it restores to the same state it was in at shutdown.

For more advanced control than a few buttons can provide, fire up the software and hook into the Ethernet port. Once you do this, you can not only switch inputs but also make adjustments to an array of associated parameters. There's even a facility to edit the EDID associated with signals, and you can force HDCP states and such. You can also access information about input signals, and the link quality to the TPS receiver – there's even a cable diagnostic tool!

It doesn't sound like much, but all these features help with compatibility. Essentially, Lightware has included a bunch of really useful tools to help you get non-compatible devices talking with each other. The TPS output of the TX140 can be connected directly to a receiver such as the HDMI-TPS-RX90, or

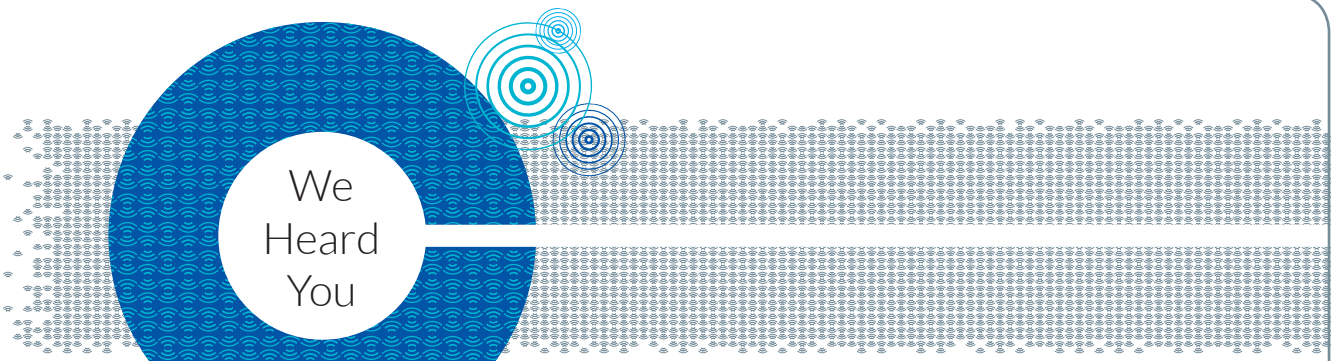
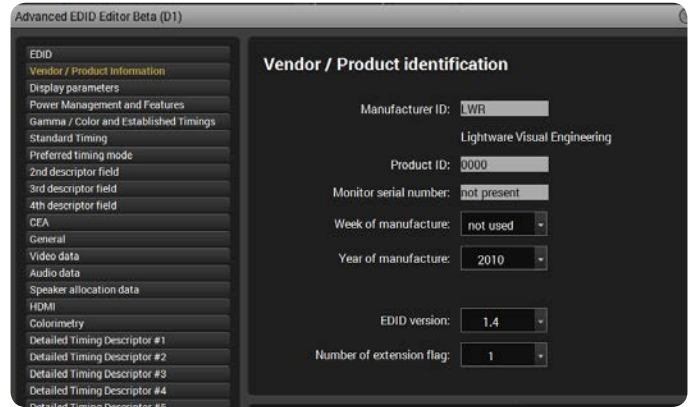
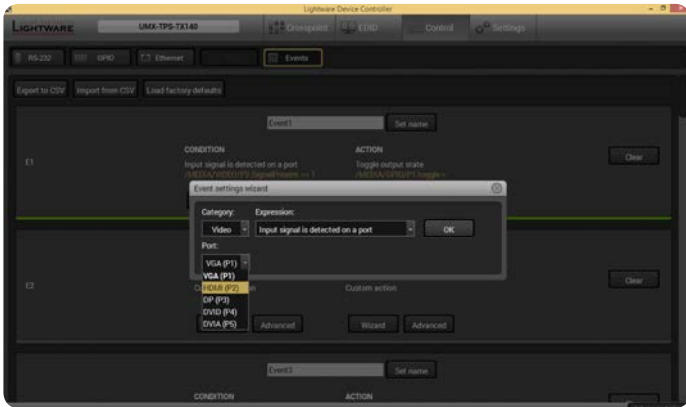
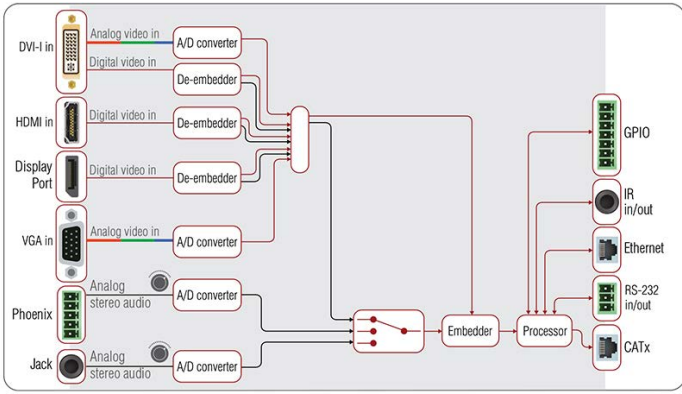
you can use one of Lightware's matrixing products to distribute it to multiple destinations. The active input can be automatically selected based on definable input priorities too, which is pretty cool.

The GPIO port is a cool feature, and with the associated event manager it can be used for a number of purposes. Events detected on either a GPIO port or a video input port (such as a valid signal being detected) can then trigger the TX140 to do things like change inputs, or send RS-232 commands out its own RS-232 port or even that of the connected receiver. GPIO ports can also perform actions as part of events, so for instance you could use a GPIO to activate a motorised projection screen. Programming events is quite a simple matter thanks to the included event wizard.

The TX140 is a solid little problem solver that has been well thought-out and designed. The accompanying 125 page manual is indicative of the true depth and capabilities of what could easily be mistaken for a much simpler product.



BRAND: LIGHTWARE
MODEL: UMX-TPS-TX140
RRP: \$3282.00 INC GST
PRODUCT INFO:
WWW.LIGHTWARE.EU
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**CHARLIE ALBIN,
SOUND CREW CHIEF
WITH CHRIS MARSH**

IT'S NO MEAN FEAT FOR A SOLO ARTIST TO TAKE TO AN ARENA STAGE WITH NO BAND, NO BACKUP SINGERS, NO DANCERS, AND NO STAGE-MATES WHATSOEVER AND THEN THOROUGHLY ENTERTAIN 14,000 PEOPLE. ED SHEERAN DID THIS FOR THREE SOLD-OUT NIGHTS IN A ROW AT SYDNEY'S QANTAS CREDIT UNION ARENA.



SOLD OUT
ED SHEERAN
AUSTRALIAN TOUR



He cut a lonely figure on stage armed only with his acoustic guitar, two microphones and a loop pedal system which allowed him to layer his own voice and guitar parts. Ed is known for using his guitar as a drum machine, hitting its body and looping the resulting booms and clicks.

Ed clearly has no airs about him, more the friendly busker than a rock god, and this laid back, down to earth attitude radiates through to the crew. Although Chris Marsh has a hectic schedule as both Production Manager and FOH sound engineer, he was happy to allow time for an interview and tour of Ed's set up.

Chris began mixing FOH for Ed just as he was emerging into the limelight, describing it as an interesting and challenging journey during which they have both grown.

"People often say that mixing for Ed must be an easy gig as its just one guy with an acoustic guitar but it's actually a lot harder, as there is nothing to hide behind," remarked Chris.

"You genuinely just have a vocal and a guitar although Ed is very clever with the loops that he builds. Consequently it's extremely critical that everything that comes out of his mouth or comes from his guitar is exactly how it should be or the show doesn't work."



Crucial to the tour was the Meyer Sound Leo and Lyon PA shipped over from Major Tom in the UK as it was not available in Australia.

"We've had particularly huge success with the Leo system, it's really been good," said Chris. "It has the ability to throw to the back corners of a room like no other PA I have come across and it always feels very, very intimate wherever you are in the venue. That's very important when you have one guy onstage as there's not much else to involve the audience. They need to hear him in the same way you'd want to hear the words of a comedian when they're telling a joke. Leo really delivers it and the imagery is superb."

At Qantas Credit Union Arena the set up was 12 Leo-M over three Lyon linear line array loudspeakers per main front-hang, with 12 additional Mica loudspeakers in each of the twin side-hangs. Completing the system were 18 1100-LFC low-frequency control elements for low end and UPA's and CQ2's as in and out fill. A Galileo Callisto loudspeaker management system with one Galileo Callisto 616 AES and four Galileo Callisto 616 array processors provided system drive and alignment.

A Meyer Sim 3 was used to analyse the room, with a Mapp Online Pro





acoustical prediction system used to shoot the room with a laser and thus predict what the system will do.

"The room here is not the easiest to work with but the Meyer system allows us to get consistent coverage from the front to the back," added Chris. "The best feature of Leo is its consistency, the side hangs on this tour are different but being a Meyer product too they tie together well."

For many years Chris used a DiGiCo SD11, which he loved to tuck under his arm and rock up at a gig with.

"It was a great sounding console in a small format, absolutely ideal," he reminisced. "However, as we started to expand and develop Ed's sound into involving more effects and inputs through the loop pedal which is a multi-channel device, I grew out of it. I also mix monitors from FOH and choosing the DiGiCo SD7 was a no-brainer. I can see everything I want to see, all the time, all across the metre bridge and also across the screens, I have every fader I need right in front of me. It's the one weapon I wouldn't go to battle without!"

Effects-wise, Chris uses a couple of Bricasti M7 reverb units, which he describes as incredibly natural, evoking a real sense of a certain space in another environment. Added to that is an Eventide Eclipse for harmonizing, the rest of the effects are onboard including choruses, delays and more reverbs.

Although Ed Sheeran is a dependably good player and performer, the way that he plays the songs is not always consistent as he responds to the mood of the crowd.

"Sometimes he'll play quite hard or he'll add in an extra chorus or verse so you have to be very flexible in order to follow him," said Chris. "You can't sit back and let it just happen. With the songs that incorporate the loop,

the power is driven by the sub bass. The big songs use an awful lot of sub bass, which gets developed from Ed hitting his guitar. Normally you would not associate an acoustic guitar with delivering lots of sub bass, as they tend to resonate a lot and then feedback in the lower frequencies. It's quite hard to achieve but that delivery of the sub bass from his acoustic guitar has become a signature and driving force to what we do."

As Ed interacts so much with the crowd he won't even entertain the idea of using in-ear monitors preferring four MJF-212A stage monitors and dual side-fill stacks, each with two 700-HP subwoofers and one JM-1P array able loudspeaker.

"It's loud!" said Chris. "We have two vocal microphones; the main one is a Sennheiser 2000 Series system with a 9235 capsule which was adapted especially for Ed. A Sennheiser 935 is used for the looping of vocals to create harmonies and beat-boxing, and this features a customized grill on the front to stop Ed's mouth distorting the diaphragm as he tends to get right on the microphone."

Ed's aforementioned loop pedal has been named the 'Chewie Monster' and Chris remarks that it does all the hard work of the gig.

"It's run by a pair of Apple Macs running Ableton and a VST plugin called Mobius," he explained. "It's a system that was developed specifically for our needs. It's a complex multi-channel looper – but apart from Ed and his guitar that is quite simply all the gig is."

The tour carries on to South America, USA and some European summer Stadium gigs. The plan is then for a short break although Chris doesn't quite believe that will happen.



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In comparison to her previous shows, at first glance this production is a vastly stripped-down affair with a stationary stage with a series of structural beams and a few key props such as a light-up pair of lips and a bathtub.

Consequently the lighting played an important role in not just illuminating the pop princess but also in expanding a set that resembles a steel skeleton of a high-rise building.

The visuals are the result of a collaboration between Creative Director William Baker, Set Designer Alan Macdonald and Lighting Designer Rob Sinclair, who all agreed that 'precise geometry' and 'Bauhaus aesthetics' were to be the key themes. Consequently the lighting is placed in a linear fashion, most notably the grid of Martin MAC Viper AirFX fixtures which extends far out over the audience. Video Blade LED strips add colourful break up lines to the ceiling grid.



KYLIE

Kiss Me Once

TOUR

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"The false ceiling gives the impression that the stage doesn't end anywhere; the set, the rig and the stage transpires as one," commented lighting director Louisa Smurthwaite at the Sydney gig. "The main design to the show is all about one light source: the 120 MAC Viper AirFX."

A row of fourteen clear light boxes located in a wall upstage are lined with neon and backlit by MAC Auras. "We chose the Auras and AirFXs particularly for their brightness," said Rob Sinclair. "We needed a hard-edged fixture that would be visible against a video wall and needed to be seen in the air more than on stage. I did a shoot-out in Vegas, and the AirFX was the clear winner."

Also in the rig were a few Vari*Lite VL3500 Wash units rigged at the top and bottom of the video screen to provide key and wash light, some Clay Paky Sharpys and Solaris Flares. Lasers are a key element in the show providing some spectacular projection mapping onto the set.

Front of house Louisa has two Vista L5 consoles running the new Jands Vista 2.3 Beta software.

"We're running one Vista L5 as a tracking back up but they share processing," she said. "We've been putting them through their paces and testing the new software. The new effects engine is great and the matrix effects work really well with our Blade lighting grid."





Louisa reports that she finds the Vista L5 enables her to simply adjust the lighting on the go, and this is important to her as she likes to finesse details to improve shows as they tour. She says that the layout of the timeline means she can do that very quickly.

Lighting was supplied by PRG who Louisa describes as great adding that the crew have been amazing. The schedule for the Australian tour was quite tough in terms of back to back shows and having a reliable and consistent crew made all the difference.



**KYLIE WITH
LIGHTING DESIGNER
ROB SINCLAIR &
FOH - LOUISA SMURTHWAITE**

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ROADSIDE

LEGENDARY ROCKER ROD STEWART VENTURED FROM HIS CUSHY RESIDENCY AT CAESAR'S PALACE, LAS VEGAS, FOR A NINE GIG TOUR OF AUSTRALIA LAST MONTH.

It's hard to believe that fifty years has passed since Rod released his first single so when he decided to bring 'The Hits' tour here, there was certainly plenty to choose from.

Lighting designer Mark Payne has lit Rod for the past twenty-five years and is a part of a faithful team that Rod surrounds himself with, many of whom have spent numerous years working with him.

Working with Rod for so long has changed the normal 'designer client' relationship into more of collaboration, certain design elements are a must and others are not.

"I have a wide scope but essentially I am delivering what Rod wants so he feels comfortable and doesn't have to worry about what is going on around him," stated Mark.

The current lighting design, as seen in Australia, is two years old but a new design is currently being worked on. The show design is reminiscent of the Vegas set up especially with the two double helix trusses, which are both the lighting support system and decorative elements, and of course, the padded floor to save Rod's knees. These are shipped over along with the Austrian blind, the set and backline gear.

With no smoke being used throughout the production and an all-white set, Mark predominantly lights the background and performers.



WART



LIGHTING DESIGNER MARK PAYNE



"Lighting them from the inside looked much better and everyone really liked the effect," stated Mark.

Mark is content working almost exclusively with Rod Stewart which over a year works out to be about six months of actual work, as he has a family in the UK and a wife who works full time. He knows exactly where Rod will be a full year in advance and can plan accordingly.

"Rod is not stopping," he said. "He is very clever, obviously to get where he is but I predict that the show will get smaller and as he gets older, the way he presents the show will change. There's still a lot more to do and he is very open to new technology. We're currently looking at what is new for the redesign and he likes that. Don't forget that we pioneered in-ear monitoring many years ago when no one else was doing it"

Audio for the tour was supplied by UK-based Major Tom (who also supplied Ed Sheeran's Australian tour) with Norwest Productions supplying the side hangs and support equipment.

Main system was a Meyer Leo rig with Lyon under hangs and 1100-LFC low-frequency subs. Front of house had a DiGiGo SD7, as did monitors, with a D5 to do the foldback for vocalists.



The show is all about the video content and Mark says that the new show will most likely (to be decided) be a 'white set with loads of video and some lighting up there' so the new content will be of prime importance just as it is in this show. Mark produces and directs the content with long time collaborators duo2.tv, a media design company based in Sao Paulo Brazil.

As well as a full-width video cyclorama and a fixed portrait ratio video screen roughly halfway upstage, there are six LED set towers. In the US, the six set towers are rotating with three sided triangles with video on one face, scenic effects on another and mesh in front of some LED PAR Cans on the last face. However, due to high shipping costs the towers got left behind.

"So we decided to film all sides and I now put them onto the one side!" said Mark. "We actually like the compromise so much, we're going to keep it this way. It saves a truck and a half of equipment and six people off the crew call."

As well as the video content, Mark has two camera feeds into his Catalyst which he displays on the towers whenever he fancies.

When it comes to choosing his lighting fixtures, Mark is experienced and comfortable enough to not really care which brand or model he gets – as long as it does the job.

"We use whatever works in the budget effectively," he remarked. "As I'm an old person, I am more interested in what happens after the light has left the instruments rather than the internal bits and bobs. The quality of all these lights are generally good. As long as they have a nice even field and the CTO is good, I can use anything. I always have my Hog4 so I can just simply clone the fixtures. I've got the Robe BMFL's in New Zealand, which I've never used before, but I'll just clone them with the Hog4 and check all the focuses and parameters in WYSIWYG. Basically I need a powerful wash light, a powerful spotlight and a nice group of front of house lights for front wash but no conventionals as I don't like focusing, it takes too long and it's boring."

The twisty trusses house Martin MAC101's as truss toners although the original idea was to actually fix LED strip to the whole of the twisty bits but it looked too weird and confusing.

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BY ANDY STEWART

MY VOCAL TONE IS ALL OVER THE PLACE... HELP!

When you've reached the end of your tether trying to EQ a vocal so that it sounds good from one end of a song to the other, it might be time to admit defeat and realise that, in this case (as well as countless others), there are several different tones that make up a vocal performance.

A vocal take is rarely, if ever, so tonally balanced that it responds uniformly well to a single EQ setting. Most vocals test the boundaries of any EQ at some point. They may get harsh in the chorus, dull in the verse, bright and sibilant or thin at the crescendo.

Whatever problems a vocal may have, when they first tip the scales, the EQ setting you initially establish suddenly seems inappropriate, and you reach for another solution. Trouble is, any new setting you eventually settle on in response to the first problem now causes others. That section, which previously sounded good, now sounds lame, and this leaves you torn between two compromised settings, neither of which sounds particularly thrilling. So what do you do?

Firstly, reflect on your own internal confusion and realise that there's no set-and-forget tone that will satisfy this outcome. More than likely a shifting tonal balance will be the only way to settle the vocal down. If the vocal tone is shifting, the solution needs to also.

Once you're struck by this realisation, whether it's during the mixdown or the vocal recording session itself – it's time to act.

tone loc

There are several things that can be done to resolve the issues of an unsettled vocal tone, depending on where along the timeline this light-bulb moment strikes you.

If it's during the recording session you may find time to try a different mic, or even record several at once, with the idea of cutting between these alternatives during mixdown as the vocal tone changes. Your valve condenser might suit the verses, for instance, but sound ugly during the choruses. For these you might switch to a dynamic or even a ribbon.

Having these recording options up your sleeve can be very handy later – provided the tonal issues are well documented so that it's crystal clear to the mix engineer why, for instance, there are three different mic channels on the one vocal.

Unfortunately, the downside of this recording approach is that it can be messy and distracting during the session to both engineer and singer, adding complexity and time to the setup, as well as potentially making the singer feel more like they're giving a press conference than delivering a vocal.

during the mix

If you discover the problem during the mix you might try a different EQ setting for the different sections, depending how clearly defined they are from verse to chorus and so on.

This can be done in the digital domain in several ways: by automating further EQs in and out of the main vocal channel to balance out the issues as they come and go; by automating a single EQ so that it morphs to accommodate the changes in the vocal tone; or by duplicating the main vocal as many times as is necessary to dedicate one channel to each and every tone.

All of these techniques (and there are others) can work well; but they do tend to be time consuming and occasionally a little hit-and-miss. No matter how fastidious you are things will still tend to slip through the net, particularly those more transient and fleeting tonal shifts.

dynamic EQ

In my experience, the most efficient and effective way to tame an unsettled vocal tone is with multiband compression.

Now for the uninitiated, briefly defined, a multiband compressor is one that acts on different *groups of frequencies* in different ways. Unlike a 'full-band' compressor, which has one set of controls to manage all the frequencies travelling through it, a multiband has several. This allows each 'band' to be selective about which groups of frequencies it's controlling, and how.

Some digital multibands have set numbers of bands, each of which is adjustable and has its own controls. Others allow you to simply add more bands of control as you require them. Either way, a good multiband – *applied carefully and judiciously* – can allow your vocal to have its cake and eat it too, tonally speaking.

how so?

You know that tone you've established – the one that sounds so amazing in that quiet section but so crap during the high notes of the chorus? Well, with the aid of a multiband, all those horrible high mids that have come roaring into view during the chorus can be controlled with targeted compression – say a band between 1.8 and 7kHz – allowing you to retain what was good about the initial EQ setting as well as making the chorus sound clear and powerful, rather than harsh.

From a practical point of view, a multiband – though by definition a compressor – is really acting more like a dynamic EQ in this context, allowing the vocal to hold together throughout the bright, dull, strident and harsh moments, with each band of compression targeting different tonal excesses that are trying to undermine your fundamental balance.

The important thing to understand about using multiband compression on main vocals, as opposed to EQ, is that they act to control frequencies only when they exceed a certain threshold (multibands can act as expanders too, but we'll leave that discussion for another time).

MULTIBAND



An EQ, meanwhile, makes wholesale changes to the tone of your vocal, regardless of its dynamic. Any changes you therefore make to one passage of the song affect the whole. That's why you wind up chasing your tail.

Multiband compression, on the other hand, allows you to set a tone with your EQ – typically one that's well suited to the lower, softer and more sensitive notes in the song – and then, when the vocal shifts gear and gets brighter, louder or more strident in the midrange, the multiband kicks in to resist the tone moving away from what seems natural or desirable.

I generally only insert multibands across a main vocal if the singer's tonal shifts have painted me into a corner that normal volume, EQ or compression settings can't resolve. At that point I'll setup a digital plug-in to control whatever group of frequencies might be troubling the mix.

There are often issues, for example, during mixdown where midrange bite proves too harsh for a loud chorus. Frequencies somewhere between 2 and 6kHz are often the culprits here, and for that a small amount of relatively fast compression often goes a long way. Great care must be taken to set this band's attack, release, knee and ratio controls just right, as it's where the vocal is most sensitive. A poorly set compressor in this range has the potential to make things far worse.

At other times there will be too much bottom-end on certain low notes of a vocal, which tends to mask the clarity of what are also often ironically the least powerfully delivered words of a song – although, in this circumstance, it's quite possible that a simple high-pass filter might be a simpler option. There may be no need for frequencies below 65Hz anyway, and any problems that are infrequently arising perhaps shouldn't be there in the first place.

Meanwhile at the other end of the spectrum, sometimes a high-end EQ boost, which can for the most part make a vocal sound sweeter and more vivid, tips the sibilance scales over the edge. To control this I'll often activate a high-end band that's got a very fast attack and release, say above 7kHz or so (depending on the singer). This is essentially just a de-esser with arguably greater control.

SOLID & UNCOMPROMISED

By dynamically controlling frequencies above a certain threshold, multiband compressors allow you to add extra tone to main vocals, without the harsh, bright or boomy side-effects. Your tone is preserved and your mix will sound far more stable as a result.



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Crew Wage Survey

WHAT YOU ARE PAID

FOLLOWING LAST MONTH'S SKILLS GAP SURVEY, WE ASKED YOU ABOUT YOUR PAY AND CONDITIONS. ONE THING LEAPT OUT OF THE SURVEY; YOU ARE PASSIONATE! FROM 247 RESPONDERS, 63% REPORT "I AM PASSIONATE, THIS IS MORE THAN A PAID GIG", WHILE 19% SAID "I'M HAPPY, THIS IS JUST A PAID GIG BUT I AM STAYING".

BY JULIUS GRAFTON

While satisfaction with the nature of the industry runs high, there is less cohesion when asked if pay meets expectations. 51% say it matches expectations, while 46% have not had expectations met.

Responders came from Lighting (19%), Audio (20%), Staging (1.5%), Vision (4%) or a combination of all, (49%). Typical workplaces were Events, Corporate or Hotel AV (31%); Theatre (28%), Concerts / Festivals, Music Venues or Touring (19%) and Production Co Warehouse (11%).

51% of people were full time employed, 22% part time or casuals, and 22% freelance. 59% have PAYG tax deducted from pay, while 21% are contractors who provide an invoice for service with an Australian Business Number. 8% were contractors with an incorporated company.

The 21% who are contractors may run into a problem with sham contracting, as the Australian Taxation Office are cracking down on contractors who invoice their services without supplying tools or working on specific contracted tasks. Hourly billing by way of invoice is more often ruled as 'sham contracting'. There is a test tool on the ATO web site to validate what is a 'real contractor' and what is not.

80% of all were Highly Skilled and Experienced, and another 11% had at least 5 years experience.

HAPPY? WHO YOU?

While the vast majority are satisfied with their career thus far (only 5% were not); 24% were unhappy with the pay and rewards.

"It is not an easy industry. People like to blame you when things go wrong. It's not a good thing", was a response.

"Love it. Hate it. Wouldn't ever do anything else for a living" sums it all up for one of our anonymous respondents.

About the money: "It's not enough. (It's a) highly specialised industry - being paid less than a non skilled checkout worker at a supermarket."

"Short answer: terrible."

This points to the issue of advancement: "Our company only gives you a pay rise when it is a national one and they have no choice or when you pass one of their levels and move up. Even if you pass, you have to have them offer you the position before you are promoted. Problem is they give very little to no training on equipment so it is near impossible to move up. Some people do, but when you consistently ask to be trained, their answer is just come in on your day off and play with the equipment."

"It's a dog eat dog world in the industry. You either love it or hate it."

THE MONEY

"The Live Performance Award penalty structure is not fitting. Automatic penalties for Midnight to 7am and Sundays is ridiculous. The award is pointless if not monitored to ensure all are using it", was a comment that reflected a theme.

Most people report a fairly consistent hourly rate, and 15% say they take time off in lieu of overtime. As to hours worked, the average is around 42.

Now for the numbers: 80 people reported weekly wages and when averaged the gross pay was \$72,266. When super is added on, you get a package approaching 80 grand – which is a little lower than the Australian average wage.

When you consider the amount of experience and the wide skill sets reported, the wage is poor.

126 people reported hourly rates of pay. These averaged \$29.07 as the 'lowest typical rate', \$36.79 as the 'typical' rate per hour, and \$59.97 as the 'best rate' over the last 12 months. Yet the award rate of hourly pay for a casual is very low.

Because the survey is varied and wide reaching, I've opened the results up for anyone to analyse. This allows crew and their bosses to drill down into the results, since the numbers above can be distorted.

THE RESULTS ARE HERE:

<https://www.surveymonkey.net/results/SM-X5QWMM57>

Thanks to all who responded.

CX-WORD

MAY EDITION

CX-WORD

ACROSS

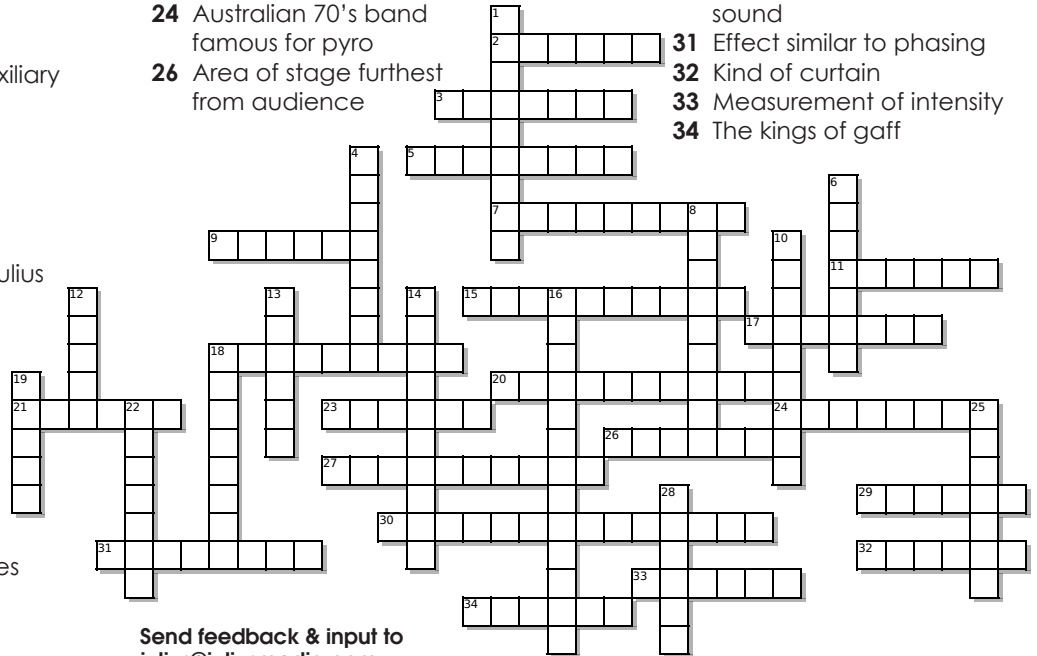
- 2 Electrically fired thunderflash
- 3 German name for light
- 5 Tie mic
- 7 White curtain
- 9 Horizontal pipe
- 11 Output that is not an auxiliary
- 15 Ultraviolet
- 17 Luminare
- 18 A time based effect

- 20 Previous name of CX
- 21 1980's audio mag in Australia
- 23 Projects into auditorium
- 24 Australian 70's band famous for pyro
- 26 Area of stage furthest from audience

- 27 One on each side of stage
- 29 Owns Martin Pro Lighting
- 30 Mic only picks up frontal sound
- 31 Effect similar to phasing
- 32 Kind of curtain
- 33 Measurement of intensity
- 34 The kings of gaff

DOWN

- 1 Measured in ohms
- 4 First mag published by Julius
- 6 Type of recording head alignment
- 8 A theatre fly operator
- 10 Magnetic wiper of tape
- 12 Lee 139
- 13 Stage left
- 14 Events following script climax
- 16 Used on a flying system
- 18 Enemy of live sound types
- 19 Owns Clay Paky
- 22 Gantry overhead
- 25 Lighting multipin plug
- 28 Leads to SPL



Send feedback & input to julius@juliusmedia.com
Answers - page 72

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BIZ TALK

Great software Bungles

When our system went pfft,
dat was NUTTIN!



with Julius Grafton

As CX grinds towards 25 years of publishing this year, we spent an uproarious long lunch at the willoughby laughing about our I.T. system *FUBARS. Like the time the I.T. nerd Long John seriously put a pointer to a database file on the desktop, which was then backed up religiously every night.

Except it was an alias, not the actual Database which of coarse was lost when the RAID array was spiked by its power supply. We actually lost two of these over time, so don't be fooled by the hype – a RAID, or 'redundant array of independent disks' is only as good as its power supply.

I think it was 2006, and we lost so much data, but crucially NOT the accounts because Corallie the frumpy bookkeeper made a floppy disk backup every Wednesday.

She may have been plain, in those tortoiseshell glasses and sensible shoes, but seriously, I could have married her the day she produced her little Avon box of backups! (Except I was married at the time - I think - to ex wife number # 3).

Pre Cloud, we suffered daily with server based Windows. The tape backups were rotated and taken home by someone. When required, they often restored useless stuff. Our data security was poor.

Nowdays we just rely on all our Cloud vendors not going broke or getting nuked. Safe, huh?

Anyhoo, the day of our lunch our mirth was directed at the hapless residents of Victoria who have been gifted with the World's Worse infringement management system. Installed by the laughably named Tenix Solutions, the wonderful system takes up to nine hours to process a query.

Ironically the contract to install this monster was let in 2006, the year we had our first little RAID meltdown. Unlike us, the Victorian Government blundered on, and on, to the point the ombudsman Geroge Brouwer estimates 235,000 offenders remain unsanctioned, at a possible cost of – wait for it - \$1.2 billion.

Yep, the software gig was originally tendered at \$25 million but the government didn't supply a full specification to Tenix. They in turn were forced to 'hunt and gather' info, and the cost to date has reached \$44.6 million. Which does not include all that foregone revenue!

The 'fix' is that Tenix will no longer 'continue to build' the system, but instead 'support the existing system', and 'operate a call centre in relation to the system'. We pulled these quotes from the Australian Financial Review.

So the lesson learned is, take your time to pay your fine in Victoria, and you could be one of the estimated 4 out of 5 people whose matter is stuck inside the digital void. In Victoria, fines expire after five years, it appears.

*** You know, of course, that a FUBAR is something F***ed Up Beyond All Recognition.**

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**In memory of
 Gary Nessel
 & Strauss Sound Systems**



NOVEMBER 2014 - GARY NESSEL
 WITH ORIGINAL PARTNER JOHN WOODHEAD

Initially, and for sentimental reasons, this was a story I wished I didn't have to write, however on reflection it was an opportunity and privilege to honour an individual who made his mark and also to celebrate the innate creativity and ingenuity resident in our Australian entertainment technology industry. It was suggested that I offer this particular piece as I was there and for a time close to the subject matter.

Our story begins early in 1962 when two school friends John Woodhead and Gary Nessel founded Strauss Sound Systems; little did they know their initiative would ultimately become an industry legend. Today John is as active as ever producing high quality speaker cabinets and sadly

BY FRANK HINTON

A Celebration of Australian Creativity and Ingenuity

Gary passed away on Thursday afternoon the 2nd of April 2015, approaching 68 years of age, this tribute is dedicated to his memory.

I commenced working at Strauss Sound Systems in the mid-1960s; the company was located in a small flat above a shop at 264 Toorak Road, South Yarra. By the time I joined ownership of the business had changed, John Potter had replaced John Woodhead as Gary Nessel's partner. Before moving on it is important to set the scene, a backdrop to the evolution of Strauss. The youth of the day had abandoned conservatism and abolished conformity; this was evident in fashion and the explosion of colour, the likes of which had never been witnessed before or since. In the absence of computers, mobile phones and their by products, this generation had music and its companion pop culture to call their own, it was their leisure, communication and spiritual nourishment, the world was rocking and so was Strauss. In those days Sound Reinforcement was a rarity and for many, undiscovered. The energy and information delivered in performance came directly off stage from instrument amplifiers; the vocal PA and a drummer(s) performing without any intervening technology, balance and dynamics was totally controlled by the artists. Needless to say competence in this area of performance would contribute to the success or failure of an act.

The Strauss response was to create high power premium quality amplification, placing performance above meaningless features all driven by a close engagement with the burgeoning client community. Initially Strauss electronics were based on known circuitry, but as a result of client expectation combined with free thinking and a first principle design approach, unique techniques and technologies soon evolved. The same was the case with speaker systems, at the time our most successful enclosure for guitar was a 4 x 12 open back column (deployed in pairs) and for bass a 2 x 15 or 1 x 18 sealed enclosure (deployed singly or in multiples). At one point I recall we produced an amplifier deploying 8 x KT88s valves and 6 x KT88 systems were not unknown. Guitar amplifiers were designated Strauss Polka, Bass amplifiers Strauss Emperor and Vocal PA's Strauss Minuet. These are the product pillars that formed the foundation of the legend.

At the time the six Australian states were akin to different countries, as one of many examples, each produced and consumed their own brand of beer and there was virtually no cross border trading. Likewise most states had one or more amplification producers for example; Melbourne-Strauss, Sydney-Lenard, Brisbane-Vase and Adelaide-Wright. However it was Strauss that transcended all borders with most popular bands of the era choosing Strauss amplification. Melbourne was the centre of the Australian live music scene at the time which no doubt assisted our market acceptance; however it is also generally agreed that Strauss products had achieved remarkably high performance standards. Furthermore, it was quite possible Strauss systems were the equal of, or better than anything available worldwide, a possibility reinforced many times by touring international acts. In the late 1960s we moved to a much larger factory facility at 4 Commercial Road, Highett enabling the introduction of new initiatives including the Strauss Mouse and the lower cost Lancer range of amplifiers. It was in 1969 that design and prototyping of the proposed next generation of Strauss premium products began, including the

Warrior, Warlord, Bandit and Hurricane and we also began experimenting with transistors, however the party was about to end for this ground-breaking entity led by Gary Nessel.

Whilst the reputation of the company was second to none and ahead of the game in terms of technology, we were all aware of financial pressures and management deficiencies. The end came quickly, creditors met on Tuesday the 17th of March 1970 and the next day the curtains were drawn on Strauss Sound Systems, however the basis for the legend had been established. Not long after the enforced closure John Woodhead purchased the assets of Strauss from the receiver and invited Gary Nessel to join him in partnership again, he accepted and they named the new initiative Nova Sound. Many of the Strauss Sound System team joined the new entity but I was committed to a different path, and from this time my recollection is based on third party input and not my own first hand experiences. Nova Sound introduced new Strauss products including the magnificent Warrior guitar amplifier that deployed 6 x KT88 valves and was revered and used by many of the leading musicians of the day, Nova supplied all stage equipment for the legendary Sunbury Festival. Additional funding was required for a specific project (the John Lennon tour that did not eventuate) and John's uncle Al Butler invested becoming the third partner. Partnership difficulties were soon obvious, Gary Nessel departed, bought out by Al, and sometime later John also departed, leaving Al Butler the sole proprietor. From this point Nova Sound focussed on the rapidly developing Sound Reinforcement sector, producing world class systems and devices for sale and rental. In the ensuing decades John Woodhead established himself as a leading speaker cabinet maker and today heads up Aranmar Acoustics based in Melbourne's eastern suburbs. Gary Nessel established a number of ventures based around ideas, usually ahead of the rest, including large transducer voice coils (4 inch), synthetic speaker enclosures and speaker processing, all of which was unknown at the time, but standard practise today. Unfortunately he was rarely able to resource his creativity which at times was nothing short of brilliant.

Unrestrained, enigmatic, an original, Gary Nessel left an indelible mark on those he worked and engaged with. Like many he had his demons and like all was flawed, however he was generous and caring, I vividly recall his charisma, inspirational qualities and can-do spirit. He was a free thinker, not bogged down in industry protocol; his strength was transducer and speaker system design, he would transcend the technical into the intuitive. Working at Strauss Sound Systems in the creative environment established by Gary Nessel ultimately had a significant influence on me, particularly some four and half decades later when I determined to create a range of critical listening systems, Gary, there are some of your genes in Grover Notting for which I thank you. To Denise and family we think of you, John you are not forgotten, to Gary's friends and colleagues; as long as you remember him, he will live on. Rest In Peace Gary, you gave it your best shot.

Postscript: With appropriate resourcing and guidance Strauss could well have become a significant international force and success story. All too often Australian creativity and ingenuity has not achieved its potential. ACETA is determined to affect change, please visit our web site www.aceta.org.au and download the ACETA Manufacturers Manifesto, the beginning of our endeavour to enhance the manufacturing sector. If you are a manufacturer unify and join the movement.

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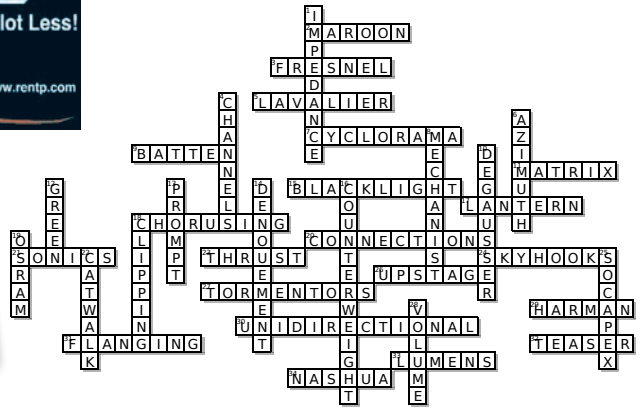
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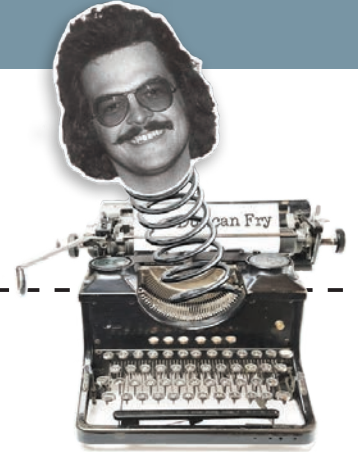
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<p>Australian Health Directory W: www.healthdirectory.com.au</p> <p>JIGSAW Community Services Database Online database of geographical community services W: www.crisissupport.org.au/jigsaw</p> <p>National Aged Care Info Line ☎ (8.30am-5pm Mon-Fri excl. National public holidays) T: 1800 500 853 W: www.health.gov.au</p> <p>Salvo Care Line ☎ T: 1300 36 36 22 (24/7) W: www.salvos.org.au</p> <p>Seniors Portal W: www.seniors.gov.au</p>	<p>Emergency * Police Fire and Ambulance T: 000 (24/7)</p> <p>Kids Helpline * T: 1800 55 1800 (24/7) W: www.kidshelp.com.au</p> <p>Lifeline * T: 13 11 14 (24/7) W: www.lifeline.org.au</p> <p>MensLine Australia * T: 1300 78 99 78 (24/7) W: www.mensline.org.au</p> <p>Salvo Crisis Line * T: 1300 36 36 22 (24/7)</p> <p>Suicide Call Back Service * T: 1300 659 467 (24/7) W: www.suicidecallbackservice.org.au</p>	<p>ENTERTAINMENT ASSIST</p> <p>Before times get tough, talk to someone or ask for help</p>	<p>Headspace National ☎ W: www.headspace.org.au</p> <p>Reach Out ☎ W: www.reachout.com.au</p> <p>Beyond Blue ☎ The National Depression Initiative W: www.beyondblue.org.au</p> <p>Carers Australia ☎ Carer Advisory & Counselling Service T: 1800 242 636 (8.30am-4.30pm)</p> <p>Counselling Online ☎☎ Alcohol & Drug related concerns T: 1800 888 236 (24/7) W: www.counsellingonline.org.au</p> <p>Life Circle Australia ☎ People diagnosed with serious illness & their carers T: 1300 364 673 (24/7)</p> <p>Sane Helpline ☎ T: 1800 18 SANE (7263) (8am-5pm Mon-Fri) W: www.sane.org</p>	<p>National Children's & Youth Law Centre ☎ W: www.lawstuff.org.au/lawstuff</p> <p>Centrelink ☎ (8am-5pm) Employment Services T: 13 2850 Youth & Student Services T: 13 24 90 W: www.centrelink.gov.au</p> <p>Centrelink ☎ (8am-5pm) Disability, Sickness & Carers T: 13 2717 Employment Services T: 13 2850 Family Assistance Office T: 13 6150 (8am-9pm) Seniors T: 13 2300 W: www.centrelink.gov.au</p> <p>National Gambling Helpline ☎☎ T: 1800 858 858 (24/7) W: www.gamblinghelponline.org.au</p> <p>National Legal Aid ☎ W: www.nla.aust.net.au</p>	<p>Kids Helpline * T: 1800 55 1800 (24/7) W: www.kidshelp.com.au</p> <p>The Line ☎ T: 1800 200 526 (24/7) W: www.theline.org.au</p> <p>1800 RESPECT ☎ Sexual assault, domestic & family violence T: 1800 RESPECT (1800 737 732) (24/7) W: www.1800respect.org.au</p> <p>Al-Anon Family Groups Aust ☎ Hope & help for families & friends of alcoholics T: 1300 252 666 (8am-5pm) W: www.al-anon.alteon.org/australia</p> <p>Alcoholics Anonymous ☎ W: www.aa.org.au</p> <p>Relationships Australia ☎☎ T: 1300 364 277 (8am-5pm) W: www.relationships.com.au</p> <p>Family Relationships Advice Line ☎ T: 1800 050 321 8am-8pm Mon-Fri, 10am-4pm Sat except Public Holidays W: www.familyrelationships.gov.au</p>

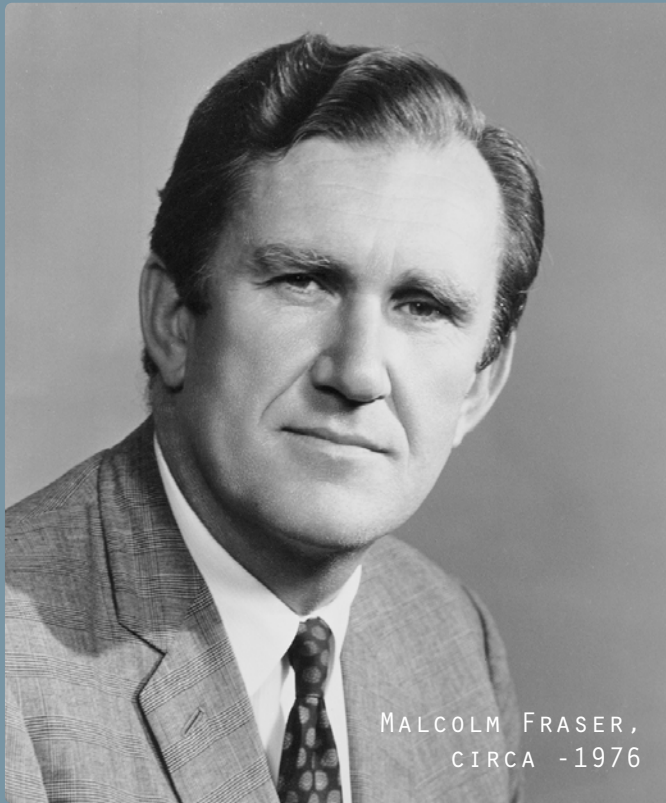
Mal and me

MEMORIES OF WORKING FOR THE LATE
22ND PRIME MINISTER OF AUSTRALIA



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IMAGE | HTTP://GUIDES.NAA.GOV.AU/MALCOLM-FRASER/GALLERY



WHEN I USED TO MIX BANDS FULL TIME, AND LIVED THE STRANGELY NOMADIC, SEMI-NOCTURNAL LIFE OF THE WORKING SOUND ENGINEER, CASUAL ACQUAINTANCES WOULD OFTEN ASK ME, "WHAT DO YOU DO FOR A LIVING?"

If I replied that I worked in the Live Sound industry and did the sound for bands, their reaction was usually one of three generic types:

Older people would tend to say "Yes, I know that's your hobby, but what's your real job?" the implication being that working 24 hours days and nights without a suit and tie somehow wasn't a real job. You could always feign deafness, cup your hand to your ear and say "WHAT? You'll have to speak up - I'm a sound engineer!" but old folks often didn't find that too funny!

Others would say: "Hmm, the sound business, eh? You're just the guy I'm looking for. Can you have a look at my stereo - it hasn't been working right since the cat had kittens on the tweeters!" A subset of these people were those who would follow up that question with, "What sort of a stereo should I buy?" Any answer more detailed than 'buy the one that

sounds best to you' would guarantee a night being quizzed on esoteric aspects of hi fi, and possibly being forced to listen to a scratched, well-worn vinyl copy of Hot August Night on a 1960's HMV 3-in-1 at a level that would make a dead man's ears bleed.

Jim Laing, one of my trusty assistants, got tired of this, and when asked about his job at parties decided to tell people he worked at the city morgue! A bad move - this turned out to be worse than telling the truth. Lots of people had a morbid fascination with this sort of thing, and would ask him all sorts of gruesome details, the answers to which he promptly made up on the spot. Some wanted to know if they would be able to come along and watch; some of the ladies wanted to do a lot more than watch!

And then he hit upon the best answer. When asked what he did for a job, he would reply that he held the 'Stop' and 'Go' sign for the Country Roads Board! The idea of leaning on that sign all day sounded so 'interesting' that not one person ever wanted to know more!

The third response to telling people you mixed Live Sound was "Have you worked for anyone famous?" to which I would reply, "No, but I did stuff up the sound once for Malcolm Fraser!"

The gig was a large Rotary convention at the old Exhibition Buildings in Melbourne. All the big wheels were there (sorry - I couldn't resist that!). We put up a large stack each side of the stage, and then built a tower out of instant scaffolding off to one side, where we placed the mixer and drive racks. The whole thing was checked thoroughly and ran like clockwork. Andy "Biffa" Johnson and myself were left in charge to babysit the system and make any changes as needed throughout the day.

For the main presenter's microphone we had decided to use an EV electret condenser that had a really clean and snappy sparkle to it. It ran off either phantom power or a peculiar voltage battery that only EV seemed able to supply at great expense. Since the phantom power on the console had been playing up lately, we opted for batteries, mortgaged the factory and bought a couple of them.

Now, I don't mean any disrespect to the Rotary people, who were really easy to get along with, but unless you were heavily involved with the organisation, it wasn't the most exciting thing in the world to watch. Speech after speech by people droning on all day. So I stuck on a cassette and listened to it in headphones via the PFL, while Biffa dozed.

The keynote speech was to be given by Mal, and as the appointed time drew near, extra security people slowly filtered in and stood around the hall. The Rotary president came up to the mic, and said: "And now, ladies and gentlemen...the Prime Minister of Australia, the honourable Malcolm Fraser." The mic sounded sweet and clear - no problems there. I relaxed as the crowd leaped to their feet as Mal entered the room to riotous applause, and a couple of TV crew scuttled forward and quickly taped a couple of extra mics onto mine, to record sound for their video.

The Prime Minister walked on stage, acknowledged the crowd, and stepped up to the lectern.

As he began to speak, the microphone went dead!

Up in our little tower Biffa and I jumped to our feet as if we'd been given a liquid nitrogen enema!

"Quick, get down and change the mic" I whispered urgently to him, helping him on his way down the ladder with the toe of my shoe. "I'll check the mixer to see if everything's OK this end. Hurry!" As he was launched into mid-air I quickly scanned the desk, wiggled connectors, but everything seemed OK.

What could it be? I leaned on the desk (it was a Tapco Catalina, an early forerunner of Mackie) which had a switch that had caused grief to many an unsuspecting engineer. And I was about to become one of them. One of my fingers accidentally pushed the PFL to Main Outputs switch.

Whoops - my tape was still running!

BANG! Loud music blasted out of the speakers, and security men in trenchcoats rushed the stage, thinking a bomb had gone off. But no, it was only ZZ Top's 'Sharp Dressed Man' rockin' the joint! I yanked the master faders down as Biffa battled his way through the security cordon to get to the stage. Even without a mic I could hear him yelling "Come on, get outta my way, let's go - go - go" in his usual tactful manner!

After what seemed an age he managed to get there, swapped the mic for a 58, and we were back in business. The Rotary president came back to the mic, tapped his fingers on it as people do, and the system gave a satisfying thud in response. He chuckled and said, "We just wanted to make sure we had your attention", handed the stage back to Mal, who was looking a little shaken, to say the least, and the show went on.

When the Prime Minister finished his speech and left the hall, he was closely surrounded by his security people who all gave us filthy looks as they left.

During the rest of the afternoon I refrained from listening to any more music and studied the microphone carefully. I plugged it back in, checked it in the PFL - it worked perfectly. I shook it - it still worked. I shook it again - and it stopped!

Unscrewing the barrel to check the battery, I noticed that the spring terminals were not making a strong contact to the battery, and there was just enough slop in the fit for it to occasionally stop making contact by a gnat's whisker. Enough to stop it working!

I roamed around the hall after the conference, chatting to delegates, and attempting to put some spin on the occurrence. But I needn't have worried. The grand poobah was quite certain where the problem lay.

"Not your fault at all, old chap," he confided in me. "Don't blame yourself. It's obvious what the problem was." He leaned over conspiratorially. "I blame radical left wing TV crews deliberately sabotaging the speech as a protest!"

"Hmm," I nodded as he handed me the cheque. "You may be right!"

I've often wondered whether Mal ever told this story himself over the dinner table with friends. I know I have, and it usually gets a few chuckles. At the funeral his family all said he had a great sense of humour, so who knows? Maybe he did.

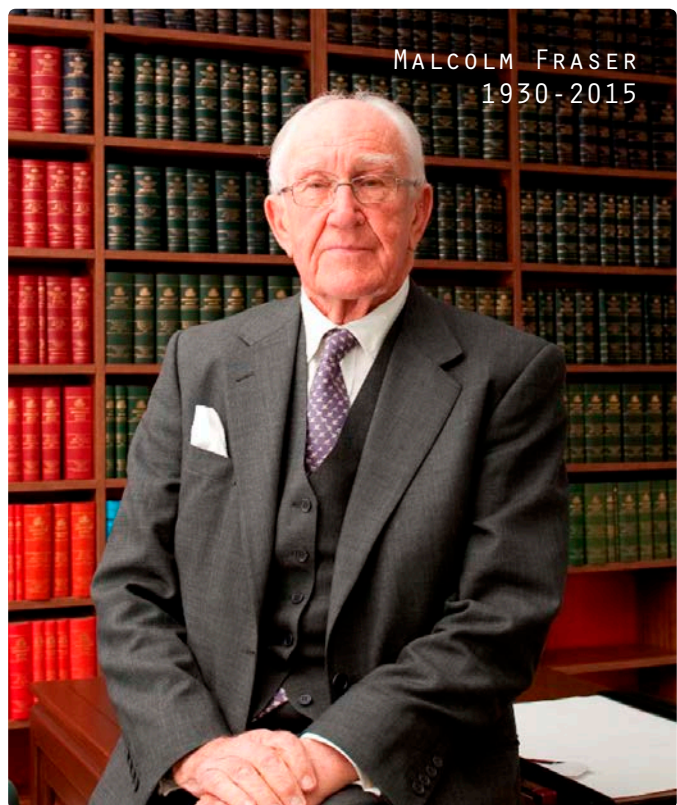


IMAGE | [HTTP://GUIDES.NAA.GOV.AU/MALCOLM-FRASER/GALLERY](http://guides.naa.gov.au/malcolm-fraser/gallery)



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